CESC LIMITED, BUDGE BUDGE GENERATING STATION

Compliance Report (October 2018 TO March 2019) of Environmental Clearance for 2X250 MW units issued BY MOEF vide Letter No: J-13011/17/90-IA.III, dated. 14/08/1991

Sl.	Condition	Compliance Status
1	The proposed capacity of 500 MW will be the ultimate capacity of the plant and no further expansion will be permitted.	Environmental Clearance was granted by MOEF vide letter no J-13011/18/2005.IA-II(T) dated 23-03-06 for expansion of one more Unit of 250 MW.
2	Height of multi flue stacks will not be less than 275 m	One multi flue stack of 275 m height is in operation.
3	Electrostatic Precipitators (ESPs) with operational efficiency of not less than 99.5% should be provided. Particulate emissions from the stack shall not exceed 150mg/Nm^3 under any circumstances – otherwise the plant will have to be stopped.	ESP's installed with designed operational efficiency of more than 99.5%. Particulate emission is monitored on line and is within the prescribed limits. Report is detailed in Annexure.
4	Space provision should be made for installation of denoxification and desulphurization plants, if found necessary on the basis of one year feedback after operation of the plant.	The boilers are provided with burners designed for low NOx emission. Sufficient space has been provided in the Boiler area for installation of the desulphurization plants.
5	Fugitive emissions should be controlled from the coal yard, crushing units, conveyor transfer points etc. Levels of coal dust in the working environment should not exceed the TLV as prescribed by the ACGIH or the Ministry of labour under the Factories Act.	Coal Handling Plant has been provided with Dust Extraction and dry fog dust suppression arrangement to limit coal dust in the working environment as prescribed under Factories Act. Work Zone Air monitoring is carried out periodically. Report is given in Annexure.
6	A multi-fuel boiler should be installed in which coal or oil or gas may be used in any proportion. Efforts should be made to obtain and use gas to reduce or even eliminate use of coal.	Provision has been kept in the Boiler Design for multi-fuel operation.
7	No new development, residential or industrial, other than to meet need or normal urban growth of the present population of the area within a radius of 1 Km will be allowed	This activity is coordinated by the concerned departments of State Govt. Almost all the employees of Budge Budge Generating Station are commuting from outside the areas of Pujali Municipality / Budge Budge Municipality, excepting those who had been residents of these areas before setting up of this Power Plant. CESC Limited has not constructed any residential quarter / building for habitation of their employees in the area.
8	Affected families should be properly rehabilitated in consultation with the outies and an accepted Rehabilitation plan regarding the 140 affected families should be submitted to this Ministry by 31st December, 1991 for approval.	Construction of the Rehabilitation Village was completed as per the approved Rehabilitation Plan.

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Sl.	Condition	Compliance Status
9	Fly ash should be utilized as mentioned in the project report, i.e. :- a) Consumption by local brick manufacturers – 300 Te b) Consumption by CESC sponsored bricks, tiles and tubes manufacturer units- 499 Te c) Cement replacement in accordance with IS:3812-1981 – 200 Te d) Light weight aggregate for road and concrete – 200 Te e) Development of low land – 200 Te	100% ash generated at BBGS is being utilized. A separate "Ash Management Cell" at the corporate level is in place to oversee utilisation of Ash Report of utilization of ash from BBGS is detailed in Annexure.
10	A greenbelt should be raised all around the periphery of the power plant and emergency ash disposal area. The width of the green belt should not be less than 50 meters. Green belt development plan should be prepared taking into account various aspects including attenuation of noise and air pollution and submitted by 31st March, 1992 to this Ministry for approval.	Greenery Development Plan for attenuation of noise and air pollution has already been implemented and saplings of appropriate species planted at the station. Plantation of 3,261 plants carried out last year (FY 2018-19).
11	Recycling and reuse of ash pond effluent and other effluents from the power station should be so done as to ensure zero discharge.	Water used for bottom ash handling is recycled into the system instead of discharging same into the holding pond / river. The entire effluent is recycled as process water. We have also been able to reuse the final effluent from Holding Pond as raw water input for Water Treatment Plant. Recycled water quality report is given in Annexure.
12	Air quality monitoring stations, the number and placing of which would be finalized in consultation with the State Pollution Control Board but would not be less than three, should be set up in down wind direction as well as where maximum ground level concentration is anticipated. Further stack emission should be monitored by setting up of automatic stack monitoring units.	3 nos. Ambient Air Quality monitoring stations have been commissioned in consultation with WBPCB. Stack is provided with on line monitoring facilities. Periodic measurement of stack emission parameters are done by WBPCB and the company's Corporate Environment Cell.
13	A separate environmental management cell with suitably qualified people to carry out various functions should be set up under the control of a senior executive who will report directly to the head of the organization.	At present at BUDGE BUDGE GENERATING STATION, a team of personnel, headed by a Sr. Manager, and assisted by a Deputy Manager looks after the environmental activities of the station. They maintain liaison with functional heads of the station. They are also in constant touch with the Corporate Environment Cell.

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BUDGE BUDGE GENERATING STATION
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CESC LIMITED, BUDGE BUDGE GENERATING STATION

Compliance Report (October 2018 TO March 2019) of Environmental Clearance for 1X250 MW unit issued BY MOEF vide Letter No: J-13011/18/2005.IA-II(T), dated. 23/03/2006

Sl.	Condition	Compliance Status
1	The conditions stipulated by West Bengal Pollution Control Board vide their letter no. 921-2N-93/2005 dated 05.12.2005 shall be strictly implemented.	Has been implemented.
2	No additional area for the ash pond shall be permitted.	No additional area has been acquired.
3	Particulate emission from the proposed third unit shall not exceed 50mg/Nm3 and from the first two existing units shall not exceed 75mg/Nm3.	Emission norms are being complied with for all units. Report is detailed in Annexure.
4	Coal having not more than 33% ash and 0.38% sulphur shall be used.	Is being complied with.
5	Electrostatic Precipitators (ESPs) with an efficiency of not less than 99.9% shall be installed.	ESP with 99.96 % efficiency has been installed
6	A stack of 220 m height shall be provided with continuous online monitoring system. Exit velocity of at least 22m/sec shall be maintained. The system for automatic shut down of power plant in case of non-functioning of ESPs shall be provided.	Stack of 220m height with continuous online monitoring system erected. Exit velocity of 22 m/s is being maintained. Report is detailed in Annexure.
7	Low NOx burners to restrict NOx emission within 750 mg / Nm3 shall be installed.	Boiler erection completed with Low NOx burners.
8	Fly ash shall be collected in dry form. 100% utilization of fly ash shall be ensured from the day of the operation of the expansion unit. The bottom ash shall be disposed of in the form of high concentration slurry in the existing ash pond.	100 % fly ash utilization is being done. Bottom ash is disposed of in moist condition as being followed for the existing units.
9	Permeability of soil (not of solid ash) shall be assessed at least at eight to ten locations in the ash pond area. The infiltration capacity of soil shall also be studied and result furnished to the Ministry within three months.	Complied with.
10	Greenbelt shall be developed in and around the plant area covering at least 20% of the total area acquired in consultation with the State Forest Department.	More than 20% area developed as Green belt in consultation with experts/State Forest Department.
11	Steps shall be taken to effectively control fugitive emissions from the coal conveyor belt.	Is being controlled. Dry fog dust suppression systems installed.
12	House keeping, particularly in the area around the effluent treatment plant shall be improved.	Has been improved.
13	For controlling fugitive dust during transportation, construction and in other vulnerable areas of the plant, dust extraction and suppression systems and water sprinklers shall be provided. It shall be ensured that there is no fugitive dust in and around the plant.	Dust suppression systems by water sprinklers are in use Additionally, dry fog dust suppression systems have been installed. Work Zone Air monitoring is carried out periodically. Report is given in Annexure.

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Sl.	Condition	Compliance Status
14	Noise level shall be limited to 75 dBA. For people working in high noise areas requisite personal protection equipments (PPE) like ear plugs etc. shall be provided.	Being maintained at all the working areas. Suitable PPE is used in high noise areas. Noise level monitoring report is given in Annexure.
15	Regular monitoring of the air quality shall be carried out in and around the power plant and record shall be maintained. Six monthly report shall be submitted to this Ministry and its Regional Office at Bhubaneswar.	Being complied with. Ambient Air Quality report is given in Annexure.
16	All the effluent water shall be suitably treated, recycled and reused within the plant. Waste water discharge outside the plant boundary shall be allowed only during monsoon.	Total effluent is being recycled except for storm water. Recycled water quality report is given in Annexure.
17	Closed Cycle Cooling System with COC of at least 4 shall be adopted.	Being complied with.
18	A separate environment monitoring cell with suitable qualified staff should be setup for implementation of the stipulated environmental safeguards.	Already in place.
19	Regional office of the Ministry of Environment & Forest located at Bhubaneswar will monitor the implementation of the stipulated conditions. Complete set of Environmental Impact Assessment Report and Management Plan should be forwarded to the Regional Office for their use during monitoring.	Complied with.
20	A half yearly report on the status of implementation of the stipulated conditions and environmental safeguards should be submitted to this Ministry / Regional Office / CPCB / SPCB.	Being complied with.
21	Separate funds should be allocated for implementation of environmental protection measures along with item-wise break-up. These cost should be included as part of the project cost. The funds earmarked for the environment protection measures should not be diverted for other purpose and year-wise expenditure should be reported to ministry.	Complied with.
22	Full cooperation should be extended to the Scientist / Officers from the Ministry / Regional Office of the Ministry at Bhubaneswar / the CPCB / the SPCB who would be monitoring the compliance of environmental status.	Full co-operation extended as desired.
23	The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearance letters are availability with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forest at http://www.envfor.nic.in	Already done

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STACK MONITORING REPORT (3 X 250 MW TPP) FROM OCTOBER 2018 TO MARCH 2019

Month	Name of the Unit	Stack height (Mtr.)	Stack diameter (Mtr.)	Exit Velocity (m/sec)	Concentration of PM (mg/Nm^3)
Oct-18	Unit - 1	275	4.75	22.97	32
	Unit - 2			22.78	22
	Unit - 3	220		22.05	28
Nov-18	Unit - 1	275	4.75	22.29	36
	Unit - 2			22.37	34
	Unit - 3	220		22.00	26
Dec-18	Unit - 1	275	4.75	22.34	37
	Unit - 2			22.72	39
	Unit - 3	220		22.03	19
Jan-19	Unit - 1	275	4.75	22.06	29
	Unit - 2			22.37	33
	Unit - 3	220		22.22	23
Feb-19	Unit - 1	275	4.75	22.20	26
	Unit - 2			22.74	35
	Unit - 3	220		22.24	20
Mar-19	Unit - 1	275	4.75	22.04	30
	Unit - 2			22.78	29
	Unit - 3	220		22.84	23

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BUDGE BUDGE GENERATING STATION
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AMBIENT AIR QUALITY MONITORING DATA FROM OCTOBER 2018 TO MARCH 2019

	Location - 1				Location - 2				Location - 3				Location - 4			
	Near ESP				Top of DM Plant Building				Near Coal Stack Yard				Beside Unit-3 Cooling Tower			
Direction (w.r.t stack)	S				WSW				SSW				ESE			
Month / Date	$PM_{2.5}$	PM_{10}	SO_2	NO_2	$PM_{2.5}$	PM_{10}	SO_2	NO_2	$PM_{2.5}$	PM_{10}	SO_2	NO_2	$PM_{2.5}$	PM_{10}	SO_2	NO_2
(Oct-18) 22.10.2018 - 27.10.2018	55.0	90.0	7.9	60.2	51.0	84.0	7.1	56.5	50.0	76.0	6.0	45.4	47.0	78.0	6.4	52.0
(Nov-18) 07.11.2018 - 12.11.2018	51.0	97.0	6.7	54.0	46.0	87.0	6.4	51.0	53.0	92.0	5.4	44.6	43.0	84.0	5.8	45.9
(Dec-18) 22.12.2018 - 27.12.2018	63.0	121.0	8.4	56.9	53.0	102.0	8.2	61.0	68.0	130.0	7.1	52.5	62.0	114.0	7.7	54.7
(JAN-19) 11.01.2019 - 17.01.2019	53.0	95.0	11.0	58.3	72.0	123.0	8.9	59.0	60.0	112.0	9.4	60.1	64.0	120.0	8.4	55.9
(FEB-19) 11.02.2019 - 15.02.2019	58.0	96.0	7.4	56.7	55.0	90.0	9.2	55.5	57.0	99.0	6.4	51.5	53.0	81.0	6.5	54.5
(MAR-19) 15.03.2019 - 13.03.2019	50.0	86.0	6.3	48.5	46.0	80.0	5.6	44.2	48.0	89.0	5.7	45.4	42.0	83.0	5.4	42.6
Permissible Limits (24 hrs. Avg.)	**60**	**100**	**80**	**80**	**60**	**100**	**80**	**80**	**60**	**100**	**80**	**80**	**60**	**100**	**80**	**80**

Note: All units in $\mu g/m^3$

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WORKZONE AIR MONITORING DATA FROM OCTOBER 2018 TO MARCH 2019

Month	Location	SPM	RPM	SO_2	NO_2	CO
Dec-18	Wagon Tippler	9.511	4.036	0.25	0.48	17.95
	Transfer Point - 4	9.239	4.461	0.30	0.40	18.33
	Secondary Crusher House	9.658	4.661	0.32	0.51	<0.05
	Bunker Floor Unit - 1	9.755	4.497	0.30	0.48	16.88
	Bunker Floor Unit - 2	9.645	4.108	0.31	0.48	17.13
	Bunker Floor Unit - 3	9.562	4.411	0.33	0.46	17.68
	Coal Mill Bay Unit - 1	9.655	4.254	0.32	0.48	17.68
	Coal Mill Bay Unit - 2	9.728	4.457	0.36	0.50	18.16
	Coal Mill Bay Unit - 3	9.658	4.314	0.29	0.50	15.67
	Chemical Regeneration Room	4.205	1.325	0.34	0.75	18.67
Mar-19	Wagon Tippler	9.694	4.118	0.27	0.50	18.66
	Transfer Point - 4	9.447	4.364	0.31	0.42	17.89
	Secondary Crusher House	9.598	4.451	0.33	0.53	2.56
	Bunker Floor Unit - 1	9.669	4.357	0.32	0.49	17.21
	Bunker Floor Unit - 2	9.716	4.223	0.32	0.49	18.32
	Bunker Floor Unit - 3	9.632	4.359	0.33	0.47	17.95
	Coal Mill Bay Unit - 1	9.741	4.336	0.33	0.49	16.56
	Coal Mill Bay Unit - 2	9.684	4.429	0.37	0.51	18.27
	Coal Mill Bay Unit - 3	9.711	4.478	0.31	0.53	18.11
	Chemical Regeneration Room	4.311	1.349	0.33	0.74	17.33
Limit: (mg/m^3)		***10***	***5***	***5***	***6***	***55***

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RECYCLED WATER QUALITY REPORT FROM OCTOBER 2018 TO MARCH 2019

Month	Parameters	Holding Pond Outlet	Limit
October-18	pH	7.9	6.5 to 8.5
	Temperature (°C)	27	NA
	TSS (mg/l)	10	100
	Oil and Grease (mg/l)	<6	10
	BOD (mg/l)	5.4	30
	COD (mg/l)	27	250
	Iron as Fe (mg/l)	0.28	1.0
	Zinc as Zn (mg/l)	<0.05	1.0
November-18	pH	7.7	6.5 to 8.5
	Temperature (°C)	27	NA
	TSS (mg/l)	<10	100
	Oil and Grease (mg/l)	<6	10
	BOD (mg/l)	5.4	30
	COD (mg/l)	28	250
	Iron as Fe (mg/l)	0.14	1.0
	Zinc as Zn (mg/l)	0.061	1.0
December-18	pH	7.6	6.5 to 8.5
	Temperature (°C)	20.5	NA
	TSS (mg/l)	<10	100
	Oil and Grease (mg/l)	<6	10
	BOD (mg/l)	5.1	30
	COD (mg/l)	24	250
	Iron as Fe (mg/l)	0.18	1.0
	Zinc as Zn (mg/l)	<0.05	1.0
January-19	pH	7.81	6.5 to 8.5
	Temperature (°C)	25	NA
	TSS (mg/l)	<10	100
	Oil and Grease (mg/l)	<6	10
	BOD (mg/l)	5.9	30
	COD (mg/l)	30	250
	Iron as Fe (mg/l)	0.21	1.0
	Zinc as Zn (mg/l)	0.069	1.0
February-19	pH	7.91	6.5 to 8.5
	Temperature (°C)	27	NA
	TSS (mg/l)	<10	100
	Oil and Grease (mg/l)	<6	10
	BOD (mg/l)	<5	30
	COD (mg/l)	18	250
	Iron as Fe (mg/l)	0.16	1.0
	Zinc as Zn (mg/l)	<0.05	1.0
March-19	pH	7.72	6.5 to 8.5
	Temperature (°C)	29	NA
	TSS (mg/l)	<10	100
	Oil and Grease (mg/l)	<6	10
	BOD (mg/l)	6.2	30
	COD (mg/l)	31	250
	Iron as Fe (mg/l)	0.25	1.0
	Zinc as Zn (mg/l)	0.066	1.0

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ASH UTILISATION REPORT (3 X 250 MW TPP) FROM OCTOBER 2018 TO MARCH 2019

Month	Ash Generation			Ash Utilisation									
				Fly Ash					Bottom Ash			Total Ash Utilisation (MT)	% Utilisation
	Total Bottom Ash Generation (MT)	Total Fly Ash Generation (MT)	Total Ash Generation (MT)	Bricks (Mechanised) (MT)	Blocks (MT)	Ready Mix Concrete (MT)	Indigenous Cement Plants (MT)	Export to Bangladesh (MT)	Roads & Embankment (MT)	Land Filling (Non-project) (MT)	Land Filling (Project) (MT)		
Oct-18	14046.402	95077.879	109124.281	1179.984	3285.822	20.942	5043.598	85547.533	167.592	10900.566	2978.244	109124.281	100.00
Nov-18	9562.266	65287.171	74849.437	1470.92	3644.997	73.389	6119.584	53701.397	25.416	8151.583	1662.151	74849.437	100.00
Dec-18	9525.316	66782.524	76307.84	1906.289	3954.613	43.458	8135.877	52734.468	16.392	6951.67	2565.073	76307.84	100.00
Jan-19	12262.232	82703.911	94966.143	1664.345	3586.279	0	8273.454	68830.272	4.092	8763.551	3844.15	94966.143	100.00
Feb-19	10719.615	76193.355	86912.97	1714.242	2701.675	0	8881.562	62248.127	160.731	6436.886	4769.747	86912.97	100.00
Mar-19	13275.743	77312.842	90588.585	2008.871	2052.716	0	9599.472	63423.726	547.825	7025.8	5930.175	90588.585	100.00

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NOISE LEVEL MONITORING REPORT FROM OCTOBER 2018 TO MARCH 2019

Sl. No.	Monitoring Location	Oct-18		Nov-18		Dec-18		Jan-19		Feb-19		Mar-19	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
1	Near Unit # 3 Cooling Tower	65.8	58.2	68.1	57.5	63.7	58.9	65.2	57.4	67.4	58.3	64.9	58.9
2	Near Neutralizing Pit	64.7	63.3	67.1	63.2	64.4	56.6	65.9	63.6	68.7	63.1	66.1	60.0
3	Main Gate	65.8	58.9	68.7	57.8	63.1	53.5	67.0	57.1	69.2	57.3	64.6	58.0
4	Near Holding Pond	65.1	58.0	63.8	56.3	56.1	51.4	63.9	56.8	64.1	56.5	63.1	57.7
5	Near Lytag	65.6	62.9	66.2	62.4	57.2	50.3	65.4	60.5	65.2	63.3	65.2	59.1

Remarks: Limit of Noise Level is 75 dB(A)

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