एनटीपीसी NTPC

ISO 14001 DNV REGISTERED FIRM

रामगुण्डम
RAMAGUNDAM

Ref.No:09/EMG/A1/2015/112

Date: 03.05.2016

To

THE DIRECTOR
Regional Office (SEZ)
Ministry of Environment Forests & Climate Change
1st and 2nd Floors, Handloom Export Promotional Council
4 Cathedral Garden Road
Nungambakkam, Chennai -560 034

Dear Sir

Sub: Six Monthly Compliance report of EC issued to NTPC Ramagundam -Reg

We are herewith submitting the six monthly compliance reports for EC given to our station pertaining to the period October 2015 to March 2016. Also we are submitting the stack data, ambient air quality data and dust concentration data for the period along with report. Also please find enclosed the Soft copy of the report in CD.

Thanking you

Yours faithfully
For NTPC Ltd

03.05.2016

(B.K.GARG)
Additional General Manager (EMG)

STATUS OF IMPLEMENTATION OF CONDITIONS STIPULATED IN ENVIRONMENTAL CLEARANCE

NAME OF THE PROJECT: RAMAGUNDAM STPP STAGE-III (1X500MW)

LETTER NO: OMNOJ-1301/20/94-IA-II DATED 25/09/1995.

S. No.	STIPULATIONS	STATUS AS ON 31.03.2016
1.	All the conditions stipulated by the State Pollution Control Board shall be implemented effectively.	All the conditions stipulated by the State Pollution Control Board are being implemented effectively.
2.	A stack of height not less than 275 meters shall be provided along with stack monitoring devices.	Stack height of 275 meter with stack monitoring facilities have been provided.
3.	The Electrostatic Precipitators having efficiency of not less than 99.8 percent shall be installed.	ESP having 99.8% efficiency have been provided.
4.	The particulate emission shall not exceed the prescribed limit of 150 mg/Nm^3 at any time.	Particulate emissions are being maintained within the prescribed limit of 115 mg/Nm^3 by TSPCB.
5.	Space provision shall be made for installation of FGD plant, if felt necessary, at future time.	Adequate Space has been provided in the layout for installation of FGD plant in future, if necessary.
6.	Regular monitoring of air quality (at lest two days a week) in and around the power plant shall be carried out and records maintained. Periodic report (on six monthly basis) on air quality shall be submitted to this Ministry.	Ambient Air Quality monitoring for the station for PM_{10}, $PM_{2.5}$, SO_2 and NO_x is being carried out twice a week at 3 locations identified with SPCB through MoEF&CC recognized laboratory and record maintained. Other parameters as per NAAQ standards are being monitoring from January 2016 and is being submitted along with this report.
7.	Recycling and reuse of ash pond effluents shall be undertaken to the extent possible. There shall be no direct discharge into the river Godavari.	The ash pond water is treated and reused for ash handling; Station is having adequate return water line (Hume pipe and pipeline) to bring back into AWRS at plant and reuse water. Also additional pipe with pumping system proposed for ash water return. However, on request from villagers, Ash pond decant water is allowed for agriculture use. Testing of ash pond decant water has been done through EPTRI for chemical parameters and bio-assay test and BARC for radioactivity and found to be within the limit.
8.	The proposed study on leaching of heavy metals from the ash pond to ground water will be undertaken early and report furnished to this Ministry. Based on the results of the study, corrective measures if any felt necessary shall be implemented.	A geo-hydrological study under the Indo-Dutch collaboration has been completed. The report was submitted to MoEF on 02.06.1997.

9.	NOC from State Pollution Control Board shall be obtained and furnished.	No Objection Certificate (NOC) was obtained and submitted to MoEF&CC on 23.08.1999.
10.	Dust suppression and dust extraction devices shall be installed in the coal handling areas to ensure that the level of dust is well within the prescribed limits.	Dust Suppression and Extraction System in coal handling areas are provided to ensure that the level of dust is well within the prescribed limits.
11.	Closed circuit cooling with induced draft cooling tower shall be provided.	Closed cycle cooling system with induced draft towers has been provided.
12.	The workers in the high noise areas will be provided with ear protection devices.	The workers in the high noise area are provided with appropriate ear protection devices.
13.	A workable plan for ash Utilisation starting with at least 20% in the first year and gradually increasing by 10 during subsequent years so as to achieve 100% Utilisation by the end of the ninth year shall be prepared and submitted to this Ministry within six months.	Revised Ash Utilization Plan submitted to MoEF on 03.08.2000 and the same is being implemented. In compliance to the latest fly ash notification dated 03.11.2009, revised action plan has also been submitted. In FY 2015-16 the station has achieved ash utilization of 89.22%. For 100% ash utilization, station has created following facilities. 1. Station has installed Full fledged Dry Ash Extraction System in all units (unit-2 to 7) other than unit 1. For unit-1 DAES was already tendered. 2. Rail loading facilities commissioned in unit 4&5 to meet the distance customer's demand. 3. Pond ash is utilized in Mine stowing purpose, ash dyke raising, clay brick units, etc.
14.	In order to conserve water at thermal power station, efforts should be made to utilize the treated water to the maximum extent possible.	The treated DM effluent, Coal settling ponds effluent and plant effluent are reused for ash handling. The cooling tower blow down is reused in dust suppression system and as service water.
15.	Liquid effluents shall be treated to conform to the standards prescribed by State/Central Pollution Control Board.	An integrated Effluent Treatment Plant (ETP) cum Ash Water Recirculation System (AWRS) has been provided at the station. All effluents from plant area are finally treated and effluent confirming by SPCB/CPCB are discharged from the plant.
16.	Adequate measures for protection against various hazards such as fire, shall be taken to the satisfaction of the respective authorities concerned.	Extensive Fire detection and protection system are provided to the satisfaction of the respective authorities concerned.
17.	Green belt of adequate width shall be developed all around the power plant by selecting suitable species in consultation with the authorities of State Forest Department.	Green belt all around the power plant has been developed.

18.	As the liquid effluents are finally being discharged into river Godavari, a study on bio-magnification of heavy metals in the aquatic life may be taken up and the report submitted to this Ministry.	The study was undertaken through M/s. Shriram Institute of Industrial Research, Delhi and the report has been forwarded to MoEF vide letter dated 16.08.2004.
19.	During ash pond reclamation, the selection of species to be planted may be made very carefully taking into consideration the nature of the soil and the total climatic conditions in consultation with the authorities of the State Forest Department.	A pioneering attempt of growing selected species like *Casuarinas Equisetifolia, Acacia Auriculiformis, Cassia Siamea, Eucalyptus Globules* on the ash directly has already been successfully implemented in the abandoned temporary ash pond of RSTPS (before 1990). In the present ash pond reclamation has not yet started.
20.	Stack data to be furnished within three months.	Data is regularly being furnished through six monthly compliance reports.
21.	Information on change of emission load with ESP field failures may be furnished.	Adequate care has been taken in the ESP design and function to ensure emission within stipulated standards all the times.
22.	Copy of the confirmation regarding coal linkage to be provided.	Coal linkage had been accorded vide letter dated 02.09.1999. A copy of this letter is submitted to MoEF&CC on 03.08.2000.
23.	Only washed coal shall be used for the project. Fuel; analysis of the washed coal so used shall be carried out every month and records maintained. The analysis report shall form part of the six monthly report to be submitted to this Ministry.	Permission has been granted for uses of raw coal vide MoEF&CC letter dated 14.12.1998.
24.	Reduction in fresh water requirement may be examined taking into account the plant as a combined unit by adopting suitable size of the condenser, flow rate and drift.	The closed cooling water system along with dedicated treatment system for CW water enabled the COC increase from 2.0 to 3.5, which has reduced the water requirement. Blow down of CW system is used for equipment cooling and service water purpose before joining plant effluent.
25.	Separate funds should be allocated for implementation of environment protection measures along with item wise breakup. These costs should be included as part of the project cost. The funds earmarked for the environmental protection measures should not be diverted for other purposes and year wise expenditure should be reported to this Ministry.	The funds on environmental protection measures along with item – wise break-up is provided in the project cost. The total funds earmarked for environmental protection has not been diverted for other purposes.
26.	Regional office of this Ministry at Bangalore will monitor the implementation of above conditions.	Noted.
27.	The project authorities shall submit to this Ministry a half yearly report on the implementation of the stipulate conditions and environmental safeguards.	This report provides the latest status for the period of October 2015 to March 2016 of the implementation of stipulated conditions and environmental safeguards.

STATUS OF IMPLEMENTATION OF CONDITIONS STIPULATED IN ENVIRONMENTAL CLEARANCE

NAME OF THE PROJECT: RAMAGUNDAM STPP STAGE-III (1X500MW)

LETTER NO.J.13011/20/94-I AII (T) DT.NOVEMBER 8,2000

S. NO.	STIPULATIONS	STATUS AS ON 31.03.2016
1.	All the stipulations made in our environmental clearance letter dated 25th September, 1995 referred to above should be strictly implemented	Status is enclosed separately.
2.	100% fly ash utilization should be ensured by 9th year as per the broad utilization Plan submitted along with NTPC's communication no. CC: ESE: 3100:2000: GEN: 4B dated 3rd August 2000.	Revised Ash Utilization Plan submitted to MoEF on 03.08.2000 and the same is being implemented. In compliance to latest fly ash notification dated 03.11.2009, revised action plan has also been submitted. In FY 2015-16 the station has achieved ash utilization of 89.22%. For 100% ash utilization, station has created following facilities. 1. Station has installed Full fledged Dry Ash Extraction System in all units (Unit-2 to 7) other than unit 1. For unit-1 DAES was already tendered. 2. Rail loading facilities commissioned in unit 4&5 to meet the distance customer's demand. 3. Pond ash is utilized in Mine stowing purpose, ash dyke raising, clay brick units, etc.
3.	The findings of the study on Bio-magnification of heavy metals in the aquatic life due to discharge of liquid effluents into Godavari river should be submitted along with the Management Plan within one year.	The study was undertaken through M/s. Shriram Institute of Industrial Research, Delhi and the report has been forwarded to MoEF&CC vide letter dated 16.08.2004.
4.	A copy of the Geo-hydrological study under Indo-Dutch collaboration should be submitted along with the plans for necessary corrective measures to avoid leaching of heavy metals from ash pond area to ground water.	A Geo-hydrological study under the Indo-Dutch collaboration has been completed. The report was submitted to MoEF on 2nd June, 1997. (A detailed study to understand Geology of N2 Ash Pond as recommended in the Indo-Dutch Report has been completed.)
5.	Rs.162.38 crores earmarked for environmental measures should not be diverted for any other activity and provision should be made for additional funds, if required.	The earmarked amount of environmental measures was not diverted for any other activity. Any additional funds required for environmental mitigation measures would be met from miscellaneous fund kept in the Operation & Maintenance fund kept for the project.

TABLE-1: AMBIENT AIR QUALITY MONITORING DATA FOR OCTOBER ' 2015 TO MARCH '2016

Month/Date	Location	Concentration (µg/m^3)			
		PM-10	PM-2.5	SO2	NO_X
OCT'2015					
02.10.2016	Balancing Reservoir	52	20	9	11
	Ramagundam Pump House	51	20	14	11
	Guest House	52	20	12	13
06.10.2016	Balancing Reservoir	46	24	12	16
	Ramagundam Pump House	55	22	11	10
	Guest House	48	18	9	11
09.10.2015	Balancing Reservoir	46	18	10	12
	Ramagundam Pump House	52	19	10	9
	Guest House	54	22	13	15
13.10.2015	Balancing Reservoir	49	20	14	11
	Ramagundam Pump House	58	23	13	11
	Guest House	51	20	12	14
16.10.2015	Balancing Reservoir	53	19	11	14
	Ramagundam Pump House	51	20	14	13
	Guest House	53	21	14	15
20.10.2016	Balancing Reservoir	51	21	13	14
	Ramagundam Pump House	55	22	13	11
	Guest House	49	19	12	14
23.10.2015	Balancing Reservoir	47	20	10	12
	Ramagundam Pump House	57	24	16	14
	Guest House	58	24	13	13
27.10.2015	Balancing Reservoir	49	19	14	16
	Ramagundam Pump House	54	21	14	11
	Guest House	57	22	11	12
30.10.2015	Balancing Reservoir	45	22	9	12
	Ramagundam Pump House	56	19	12	10
	Guest House	51	19	10	13
Nov-15					
03.11.2015	Balancing Reservoir	51	21	11	14
	Ramagundam Pump House	57	22	14	11
06.11.2015	Balancing Reservoir	45	19	13	16
	Ramagundam Pump House	53	20	15	13
	Guest House	53	24	13	14
10.11.2015	Balancing Reservoir	49	20	12	14
	Ramagundam Pump House	55	25	12	10
	Guest House	57	21	11	13
13.11.2015	Balancing Reservoir	57	23	10	12
	Ramagundam Pump House	66	27	15	12
	Guest House	50	22	14	17
17.11.2015	Balancing Reservoir	51	21	12	15
	Ramagundam Pump House	59	24	13	11
	Guest House	56	25	12	13
20.11.2015	Balancing Reservoir	56	23	11	13
	Ramagundam Pump House	55	20	10	9
	Guest House	49	20	13	15
24.11.2015	Balancing Reservoir	53	20	13	15
	Ramagundam Pump House	51	23	14	12
	Guest House	52	23	11	14
27.11.2015	Balancing Reservoir	49	18	10	11
	Ramagundam Pump House	56	21	15	11
	Guest House	56	20	10	12

TABLE-1: AMBIENT AIR QUALITY MONITORING DATA FOR OCTOBER ' 2015 TO MARCH '2016

Month/Date	Location	Concentration ($\mu g/m^3$)			
		PM-10	PM-2.5	SO2	NO_x
Dec-15					
01.12.2015	Balancing Reservoir	53	23	13	15
	Ramagundam Pump House	54	20	16	13
	Guest House	53	20	13	15
04.12.2015	Balancing Reservoir	48	20	15	14
	Ramagundam Pump House	51	22	14	12
	Guest House	55	26	14	12
08.12.2015	Balancing Reservoir	51	22	13	16
	Ramagundam Pump House	57	27	15	14
	Guest House	54	22	13	14
11.12.2015	Balancing Reservoir	54	21	12	14
	Ramagundam Pump House	62	24	12	11
	Guest House	51	20	16	15
15.12.2015	Balancing Reservoir	50	23	15	17
	Ramagundam Pump House	57	21	15	13
	Guest House	55	26	13	14
18.12.2015	Balancing Reservoir	54	20	13	15
	Ramagundam Pump House	52	23	12	10
	Guest House	50	21	15	13
22.12.2015	Balancing Reservoir	51	22	14	16
	Ramagundam Pump House	56	25	17	14
	Guest House	53	20	12	15
25.12.2015	Balancing Reservoir	47	19	13	12
	Ramagundam Pump House	50	20	13	10
	Guest House	52	22	11	13
29.12.2015	Balancing Reservoir	52	23	12	14
	Ramagundam Pump House	53	22	14	12
	Guest House	54	24	13	11
Jan-16					
01.01.2016	Balancing Reservoir	55	25	12	14
	Ramagundam Pump House	52	23	18	15
	Guest House	55	23	15	14
05.1.2016	Balancing Reservoir	50	22	16	12
	Ramagundam Pump House	55	24	16	13
	Guest House	52	24	11	10
08.01.2016	Balancing Reservoir	53	24	15	13
	Ramagundam Pump House	53	25	13	11
	Guest House	56	25	16	12
12.01.2016	Balancing Reservoir	55	23	13	11
	Ramagundam Pump House	58	23	15	13
	Guest House	53	22	14	16
15.01.2016	Balancing Reservoir	52	21	14	16
	Ramagundam Pump House	54	25	17	15
	Guest House	51	24	15	13
19.01.2016	Balancing Reservoir	55	23	11	13
	Ramagundam Pump House	57	20	15	12
	Guest House	52	23	13	11
21.01.2016	Balancing Reservoir	69	38	20	18
	Ramagundam Pump House	50	30	16	14
	Guest House	68	36	18	14
25.01.2016	Balancing Reservoir	56	33	16	14
	Ramagundam Pump House	44	26	15	13
	Guest House	64	38	19	16

TABLE-1: AMBIENT AIR QUALITY MONITORING DATA FOR OCTOBER ' 2015 TO MARCH '2016

Month/Date	Location	Concentration ($\mu g/m^3$)			
		PM-10	PM-2.5	SO2	NO_x
Feb-16					
04.02.2016	Balancing Reservoir	52	31	17	14
	Ramagundam Pump House	48	29	15	13
	Guest House	72	42	20	16
07.02.2016	Balancing Reservoir	62	37	19	16
	Ramagundam Pump House	54	32	17	15
	Guest House	76	44	16	14
12.02.2016	Balancing Reservoir	68	39	20	18
	Ramagundam Pump House	59	35	21	16
	Guest House	86	52	23	17
15.02.2016	Balancing Reservoir	56	33	20	17
	Ramagundam Pump House	57	34	22	19
	Guest House	74	44	20	16
19.02.2016	Balancing Reservoir	64	38	23	18
	Ramagundam Pump House	56	33	20	16
	Guest House	82	46	21	18
22.02.2016	Balancing Reservoir	68	41	22	19
	Ramagundam Pump House	57	32	20	16
	Guest House	72	42	21	17
27.02.2016	Balancing Reservoir	62	25	20	16
	Ramagundam Pump House	58	26	16	13
	Guest House	72	30	18	14
29.02.2016	Balancing Reservoir	64	29	19	15
	Ramagundam Pump House	54	24	17	14
	Guest House	76	32	20	17
Mar-16					
05.03.2016	Balancing Reservoir	66	30	22	19
	Ramagundam Pump House	54	23	18	14
	Guest House	78	36	21	16
07.03.2016	Balancing Reservoir	64	31	18	15
	Ramagundam Pump House	58	25	19	16
	Guest House	70	32	18	15
11.03.2016	Balancing Reservoir	62	27	20	16
	Ramagundam Pump House	55	24	19	15
	Guest House	92	40	22	17
14.03.2016	Balancing Reservoir	68	31	20	15
	Ramagundam Pump House	60	27	19	14
	Guest House	88	41	20	16
22.03.2016	Balancing Reservoir	64	31	18	15
	Ramagundam Pump House	66	30	19	15
	Guest House	82	34	18	14
24.03.2016	Balancing Reservoir	65	30	20	15
	Ramagundam Pump House	62	27	21	16
	Guest House	75	32	19	14
28.03.2016	Balancing Reservoir	66	34	17	17
	Ramagundam Pump House	71	35	21	17
	Guest House	78	41	19	15

TABLE-2: STACK MONITORING DATA FOR OCT'2015 TO MAR'2016

DATE	SPM (mg/Nm^3)						
	Unit -1	Unit -2	Unit -3	Unit -4	Unit -5	Unit -6	Unit -7
OCTOBER'15							
06.10.2015	90	93	87				
07.10.2015					105	109	82
19.10.2015	93	96	91				
21.10.2015					108	106	88
26.10.2015				104			
NOVEMBER'15							
06.11.2015	88	92	84				
07.11.2015				106	110	108	
10.11.2015							80
20.11.2015		96	87	110			
24.11.2015					106	109	77
DECEMBER'15							
07.12.2015		98	90	108			
08.12.2015	84				104	110	
09.12.2015							72
18.12.2015	80	93	84				
19.12.2015				110	107	110	
21.12.2015							83
JANUARY'16							
06.01.2016	86	100	89				
04.01.2016				109	110	109	
07.01.2016							87
19.01.2016	83	95	87				
21.01.2016				110	106	110	
23.01.2016							75
FEBRUARY'16							
09.02.2016	80	89	84				
08.02.2016				108	106	109	
10.02.2016							83
18.02.2016	86	90	78				
19.02.2016				110	108	110	
20.02.2016							80
MARCH'16							
04.03.2016	74	77	80				
03.03.2016				108	107	109	
05.03.2016							76
22.03.2016	78	83	89				
24.03.2016				106	110	108	
26.03.2016							85

TABLE-3: DUST MONITORING (PM- 10) DATA FOR OCT' 2015 TO MAR' 2016

DATE	LOCATION	Dust Concentration (PM 10) in $\mu g/m^3$
OCTOBER'15		
06.10.2015	ESP Stage - I Area	72
	DAETP Stage -II Area	86
07.01.2015	BURNER FLOOR Stage - I	54
	BRICK PLANT	75
10.102015	ASH POND AREA	62
14.10.2015	MILL AREA STAGE - I	86
NOVEMBER'15		
03.11.2015	ESP Stage - II Area	65
	DAETP Stage -II Area	90
04.11.2015	BURNER FLOOR Stage - I	62
	BRICK PLANT	86
05.11.2015	ASH POND AREA	70
	MILL AREA STAGE -II	96
DECEMBER'15		
07.12.2015	ESP Stage - I Area	60
	DAETP Stage -IArea	84
08.12.2015	BURNER FLOOR Stage - II	68
	BRICK PLANT	72
09.12.2015	ASH POND AREA	75
	MILL AREA STAGE - II	94
JANUARY'16		
06.01.2016	ESP Stage - II Area	62
	DAETP Stage -II Area	86
07.01.2016	BURNER FLOOR Stage - II	66
	BRICK PLANT	82
08.01.2016	ASH POND AREA	72
	MILL AREA STAGE - II	92
FEBRUARY'16		
03.02.2016	ESPm Stage - II Area	64
	DAETP Stage -I Area	84
04.02.2016	BURNER FLOOR Stage - II	60
	BRICK PLANT	88
09.02.2016	ASH POND AREA	76
10.02.2016	MILL AREA STAGE - I	96
MARCH'16		
10.03.2016	ESP Stage - I Area	60
	DAETP Stage -I Area	92
15.03.2016	BURNER FLOOR Stage - I	62
	BRICK PLANT	84
10.03.2016	ASH POND AREA	78
15.03.2016	MILL AREA STAGE - I	86