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No. ERPC/MS/2016-17/

Date: 23rd January, 2017

FAX MESSAGE NO. 45

To,

As per list.

Sub: Preparation of Phasing Plan for implementation of new Environmental Norms for Thermal Plants, issued by MOEF&CC -- reg

Ref: CEA letter vide no CEA/Th./TPE&CC/ENV/55/2015/1472 dated 22.12.2016

Sir,

With reference to above referred letter it is to intimate that a committee was constituted headed by Chairperson, CEA by Ministry of Power; Govt. of India vide Office Order No. FU-1/2015-IPC dated 21.09.2016 for preparing a phasing plan for implementation of new environmental norms issued by MoEF&CC in December 2015 regards to SPM, SOx& NOx emissions. The 1st & 2nd meetings of committee was held on 21.10.2016 & 13.12. 2016 respectively, wherein the following decisions were taken:-

- (i) Region-wise lists to be prepared by CEA identifying the thermal units for ESP upgradation & installation of FGD. The lists of Eastern Region have been prepared and enclosed at **Annexure-1 to Annexure-4**.
- (ii) Concerned RPC is to prepare phasing plan for above identified units for ESP Upgradation and FGD installation in consultation with concerned Power Utilities, SLDC & POSOCO.
- (iii) Installation of low NOx burners in all coal based thermal units was discussed by the committee. It was brought to the notice of committee, that all new units installed after 2004 onwards have low NOx burners/system, however, older units may not have low NOx burners/system. The Committee recommended to take up installation of low NOx system in these coal based thermal units during their next over- hauling period positively.

The technical feasible options available for reducing NOx emissions are given below:-

(a) For units commissioned up to 31.12.2003, following was proposed: -

- In case Wall fired boilers installed before 31.12.2003, modification in combustion system such as reducing excess air, combustion optimization and installation of Low NOx burners (if required) may be taken up to bring down NOx emission within stipulated norms of 600 mg/Nm³.
- In case of tangential fired boilers installed before 31.12.2003, following modification in combustion system may be taken up bring down NOx emissions within stipulated norms of 600 mg/Nm³:
 - Reduction in excess air (considering increase in CO, flame length and its stability)

- Wind box modifications like air nozzle, coal nozzle, port size modification, installation of Over Fire Air (OFA) and changing its operation from manual to pneumatic
- Combustion optimization
- It was also informed to members that above notification (except installation of Low NOx burner) are of minor in nature and estimated cost will be about 1 lakh/MW only.

(b) For units commissioned after 31.12.2003, following was proposed:

- All the available feasible modifications in combustion system like use of Low NOx burners, OFA with dynamic classifier (in wall fired boilers) and Low NOx system with additional provision of wind box for installing Separate Over fire Air System (SOFA) with dynamic classifier (in tangentially fired boilers) need to be done to bring down NOx emissions below 450 mg/Nm³ which is achievable.

Considering estimated cost of 10 Lacs/MW, the tariff implication to carry out above mentioned modification in combustion system, is of the order of 7 Paisa/kWh considering operational life of next 5 years.

Further, in the 3rd meetings of committee held on 03.01.2017 the following were decided:

- (i) No expenditure may be done for the units where FGD space is not available unless MOEF agrees to allow operation of these units for a certain minimum time without meeting SOx norms. only . As such ESP upgrade/retrofit and installation of Low NOx system/burners are not to be taken up for these units irrespective of their vintage.
- (ii) Phasing of ESP upgrade/retrofitting is to be considered for units based on CFBC boilers and not meeting new SPM norms.
- (iii) ESP upgrade phasing for remaining units will be taken up after receipt of some assurance from MOEF

Therefore, it is requested that your plan for phasing for ESP Upgradation & FGD installation as per above guidelines may be furnished to this office within a week to ERPC (e-mail: mserpc-power@nic.in).


Further, a **special meeting** to deliberate on the above issue is scheduled on **13.02.2017** at 1100 AM in **ERPC, Kolkata**.

You are requested to kindly participate or depute your concerned officer(s) in the meeting with all the relevant details.

Please consider this as most urgent.

Thanking you,

Yours faithfully,


(A. K. Bandyopadhyaya)
Member Secretary

LIST OF ADDRESSES:

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26. General Manager (O&M), BRBCL, First Floor, Vidyut Bhavan II, Bailey Road, Patna-800001

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- 1) Chief Engineer, TPE & CC Division, CEA, Sewa Bhawan, R.K.Puram, N.Delhi- 110066
- 2) Director (Project), BSPTCL, Vidyut Bhavan , Bailey Road, Patna-800021.
- 3) Director (O&M), WBPDC, Bidyut Unnayan Bhavan, 3C, Block-LA, Sector-III, Bidhannagar, Kolkata-700098.
- 4) General Manager I/C (Corporate), Durgapur Projects Ltd., Administrative Building, Durgapur-713201, West Bengal
- 5) Principal Chief Engineer (HQ), Energy & Power Dept., Govt. of Sikkim, Kazi Road, Gangtok-737101.
- 6) Director (Commercial), GRIDCO Ltd., Janpath, Bhubaneswar-751022.
- 7) Director (Operation), OPGC, Zone-A, 7th floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023.
- 8) Chief Engineer (Trans. O&M), JUSNL, Engineering Building, HEC, Dhurwa, Ranchi-834004.
- 9) General Manager, Tenughat TPS, Lalpania, Dist- Bokaro, Jharkhand-829149.
- 10) Executive Director (Commercial), Damodar Valley Corporation, DVC Tower, VIP Road, Kolkata-700054.
- 11) Regional Executive Director (ER-I), NTPC Ltd., 2nd floor, Lok Nayak Jai Prakash Bhawan, Dak Bunglow Chowk, Patna-800001.
- 12) Regional Executive Director (ER-II), NTPC Ltd., 3rd Floor, OLIC Building, Plot No.N-17/2, Nayapalli, Bhubaneswar-751012.
- 13) General Manager, ERLDC, 14 Golf Club Road, Kolkata –700 033.
- 14) Chief Executive Officer, POSOCO, National Load Dispatch Center,B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016
- 15) Executive Director (CS & SO), CESC Ltd, CESC House, 1 Chowringhee Square, Kolkata-700001.
- 16) Station Head & General Manager (O&M), Maithon Power Ltd., MA-5, Gogna Colony, P.O.-Maithon Dam, Dist.- Dhanbad, Jharkhand-828207
- 17) Director, Adhunik Power & Natural Resources Ltd., Crescent Tower, 3rd Floor, 229 AJC Bose Road, Kolkata-700020.
- 18) Sr. Vice President (Power), 4x600 MW IPP, Vedanta Ltd. Bhurkhamunda, P.O.-Sripura, Jharsuguda, Odisha-768202.
- 19) Director & COO, GMR Kamalanga Energy Ltd., 29 Satyanagar, Bhubaneswar-751007.
- 20) Sr. General Manager (E), Chuzachen HEP, Gati Infrastructure Private Limited, Lower Bering Karabari, Pakyong, East Sikkim-737106.
- 21) Chief Operating Officer, Jindal India Thermal Power Limited, Plot No. 12, Sector-B1, Local Shopping Complex, Vasant Kunj, New Delhi- 110070.

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2. Managing Director, Haldia Energy Limited, 8, Chittaranjan Avenue, Barick Bhawan, 6th Floor, Kolkata 700072

UNITS IDENTIFIED FOR FGD INSTALLATION (UNITS INSTALLED AFTER 31-12-2003)

EASTERN REGION

Annexure-1

Sr. No.	Developer	Name of Project	Sector	State	Region	Unit No	Total Capacity	DT-of COMMISSIONING	Age in years	Whether FGD Installed	Whether CFBC	Present SPM Norms	Revised SPM Norms	Present SPM Level	Whether ESP retrofit required	Whether FGD space available (Y/N)	Whether LE work completed /Ongoing (Y/N)	Year of Completion/Ongoing of LE Works	Committee Recommendations
237	D.V.C	BOKARO 'A' TPS	Central Sector	Jharkhand	ER	1	500	22-03-2016	1	N	N	100	50	NA	Y	Y			FGD Installation
1081	NTPC	NABI NAGAR TPP	Central Sector	Bihar	ER	1	250	20-03-2016	1	N	N	50	50	NA	N	Y			FGD Installation
271	D.V.C	RAGHUNATHPUR TPP	Central Sector	West Bengal	ER	2	600	18-01-2016	1	N	N	50	50	29	N	Y			FGD Installation
1657	WBPDCL	SAGARDIGHI TPS	State Sector	West Bengal	ER	3	500	14-12-2015	1	N	N	50	50	44	N	Y			FGD Installation
1156	NTPC & Bihar	MUZAFFARPUR TPS	Central Sector	Bihar	ER	3	195	31-03-2015	2	N	N	150	50	NA	Y	Y			FGD Installation
1021	NTPC	BARH II	Central Sector	Bihar	ER	2	660	04-03-2015	2	N	N	50	50	24	N	Y			FGD Installation
502	JIPL	DERANG TPP	Private Sector	Odisha	ER	2	600	24-01-2015	2	N	N	50	50	NA	N	Y			FGD Installation
268	D.V.C	RAGHUNATHPUR TPP	Central Sector	West Bengal	ER	1	600	24-08-2014	2	N	N	50	50	38	N	Y			FGD Installation
501	JIPL	DERANG TPP	Private Sector	Odisha	ER	1	600	10-04-2014	3	N	N	50	50	NA	N	Y			FGD Installation
363	GMR	KAMALANGA TPS	Private Sector	Odisha	ER	3	350	21-03-2014	3	N	N	50	50	36	N	Y			FGD Installation
1020	NTPC	BARH II	Central Sector	Bihar	ER	1	660	20-11-2013	3	N	N	50	50	43	N	Y			FGD Installation
362	GMR	KAMALANGA TPS	Private Sector	Odisha	ER	2	350	28-09-2013	3	N	N	50	50	31	N	Y			FGD Installation
361	GMR	KAMALANGA TPS	Private Sector	Odisha	ER	1	350	29-03-2013	4	N	N	50	50	43	N	Y			FGD Installation
257	D.V.C	KODARMA TPP	Central Sector	Jharkhand	ER	2	500	15-02-2013	4	N	N	100	50	31	N	Y			FGD Installation
1360	Sterlite Energy Ltd	STERLITE TPP	Private Sector	Odisha	ER	4	600	25-04-2012	5	N	N	50	50	36	N	Y			FGD Installation
1263	TATA Power Co.MPL	MAITHON RB TPP	Private Sector	Jharkhand	ER	2	525	31-03-2012	5	N	N	100	50	39	N	Y			FGD Installation
247	D.V.C	DURGAPUR STEEL TPS	Central Sector	West Bengal	ER	2	500	23-03-2012	5	N	N	50	50	32	N	Y			FGD Installation
1359	Sterlite Energy Ltd	STERLITE TPP	Private Sector	Odisha	ER	3	600	16-08-2011	5	N	N	50	50	42	N	Y			FGD Installation
246	D.V.C	DURGAPUR STEEL TPS	Central Sector	West Bengal	ER	1	500	29-07-2011	5	N	N	50	50	36	N	Y			FGD Installation
250	D.V.C	KODARMA TPP	Central Sector	Jharkhand	ER	1	500	20-07-2011	5	N	N	100	50	36	N	Y			FGD Installation
1262	MPL	MAITHON RB TPP	Private Sector	Jharkhand	ER	1	525	30-06-2011	6	N	N	100	50	32	N	Y			FGD Installation
1462	TATA Power Co.	JOJOBBERA TPS	Private Sector	Jharkhand	ER	5	120	27-03-2011	6	N	N	50	50	49	N	Y			FGD Installation
267	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	8	500	26-03-2011	6	N	N	100	50	65	Y	Y			FGD Installation
1047	NTPC	FARAKKA STPS	Central Sector	West Bengal	ER	6	500	07-03-2011	6	N	N	75	50	65	Y	Y			FGD Installation
1358	Sterlite Energy Ltd	STERLITE TPP	Private Sector	Odisha	ER	2	600	29-12-2010	6	N	N	50	50	23	N	Y			FGD Installation
1357	Sterlite Energy Ltd	STERLITE TPP	Private Sector	Odisha	ER	1	600	14-10-2010	6	N	N	50	50	21	N	Y			FGD Installation
264	D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	7	500	30-09-2010	6	N	N	100	50	58	Y	Y			FGD Installation
202	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Bengal	ER	3	250	29-09-2009	7	N	N	50	50	22	N	Y			FGD Installation
1067	NTPC	KAHALGAON TPS	Central Sector	Bihar	ER	7	500	31-07-2009	7	N	N	100	50	42	N	Y			FGD Installation

TOTAL CAPACITY=14035 MW, NO OF UNITS=29

UNITS IDENTIFIED FOR FGD INSTALLATION (UNITS INSTALLED BEFORE 31-12-2003)

EASTERN REGION

Annexure-2

Sr. No.	Developer	Name of Project	Sector	State	Region	Unit No	Total Capacity	DT-of COMMISSIONING	Age in years	Whether FGD Installed	Whether CFBC	Present SPM Norms	Revised SPM Norms	Present SPM Level	Whether ESP retrofit required	Whether FGD space available (Y/N)	Whether LE work completed /Ongoing (Y/N)	Year of Completion/Ongoing of LE Works	Committee Recommendations
1120	NTPC	TALCHER STPS	Central Sector	Odisha	ER	4	500	25-10-2003	13	N	N	100	100	89	N	Y			FGD Installation
1119	NTPC	TALCHER STPS	Central Sector	Odisha	ER	3	500	21-02-2003	14	N	N	100	100	91	N	Y			FGD Installation
201	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Bengal	ER	2	250	06-03-1999	18	N	N	75	100	36	N	Y			FGD Installation
200	C.E.S.C. Pvt.	BUDGE BUDGE TPS	Private Sector	West Bengal	ER	1	250	16-09-1997	19	N	N	75	100	30	N	Y			FGD Installation
1195	OPGCLtd	IB VALLEY TPS	State Sector	Odisha	ER	2	210	22-10-1995	21	N	N	100	100	129	Y	Y			FGD Installation
1194	OPGCLtd	IB VALLEY TPS	State Sector	Odisha	ER	1	210	02-06-1994	23	N	N	100	100	130	Y	Y			FGD Installation

TOTAL CAPACITY=1920 MW, NO OF UNITS=06

UNITS IDENTIFIED FOR ESP UPGRADATION (UNITS INSTALLED AFTER 31-12-2003)

EASTERN REGION

Annexure-3

Developer	Name of Project	Sector	State	Region	Unit No	Total Capacity	DT-of COMMISSIONING	Age in years	Whether FGD Installed	Whether CFBC	Present SPM Norms	Revised SPM Norms	Present SPM Level	Whether ESP retrofit required	Whether FGD space available (Y/N)	Whether LE work completed /Ongoing (Y/N)	Year of Completion/Ongoing of LE Works	Committee Recommendations
Ind barath	IND BARATH TPP	Private Sector	Odisha	ER	1	350	25-02-2016	1	N	N	NA	50	NA	Y	N			ESP Upgradation
D.P.L.	D.P.L. TPS EXT.	State Sector	West Bengal	ER	8	250	31-03-2014	3	N	N	150	50	99	Y	N			ESP Upgradation
WBPDC	SANTALDIH TPS	State Sector	West Bengal	ER	6	250	29-06-2011	6	N	N	100	50	92	Y	N			ESP Upgradation
WBPDC	BAKRESWAR TPS	State Sector	West Bengal	ER	1	210	07-06-2009	8	N	N	150	50	89	Y	N			ESP Upgradation
WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	ER	1	300	20-07-2008	8	N	N	100	50	68	Y	N			ESP Upgradation
WBPDC	BAKRESWAR TPS	State Sector	West Bengal	ER	5	210	24-12-2007	9	N	N	150	50	91	Y	N			ESP Upgradation
WBPDC	SAGARDIGHI TPS	State Sector	West Bengal	ER	2	300	21-12-2007	9	N	N	100	50	78	Y	N			ESP Upgradation
D.P.L.	D.P.L. TPS	State Sector	West Bengal	ER	7	300	24-11-2007	9	N	N	150	50	99	Y	N			ESP Upgradation
WBPDC	SANTALDIH TPS	State Sector	West Bengal	ER	5	250	07-11-2007	9	N	N	100	50	63	Y	N			ESP Upgradation
D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	5	250	01-10-2007	9	N	N	150	50	96	Y	N			ESP Upgradation
D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	6	250	31-03-2007	10	N	N	150	50	145	Y	N			ESP Upgradation
NTPC	TALCHER STPS	Central Sector	Odisha	ER	6	500	06-02-2005	12	N	N	100	50	91	Y	N			ESP Upgradation
D.V.C	MEJIA TPS	Central Sector	West Bengal	ER	4	210	12-10-2004	12	N	N	150	50	140	Y	N			ESP Upgradation
NTPC	TALCHER STPS	Central Sector	Odisha	ER	5	500	13-05-2004	13	N	N	100	50	85	Y	N			ESP Upgradation

TOTAL CAPACITY=4130 MW, NO OF UNITS=14

UNITS IDENTIFIED FOR ESP UPGRADATION (UNITS INSTALLED BEFORE 31-12-2003)

EASTERN REGION

Annexure-4

Name of Project	Sector	State	Region	Unit No	Total Capacity	DT-of COMMISSIONING	Age in years	Whether FGD Installed	Whether CFBC	Present SPM Norms	Revised SPM Norms	Present SPM Level	Whether ESP retrofit required	Whether FGD space available (Y/N)	Whether LE work completed /Ongoing (Y/N)	Year of Completion/Ongoing of LE Works	Committee Recommendations
MEJIA TPS	Central Sector	West Bengal	ER	3	210	25-03-1998	19	N	N	150	100	148	Y	N			ESP Upgradation
MEJIA TPS	Central Sector	West Bengal	ER	2	210	24-03-1997	20	N	N	150	100	130	Y	N			ESP Upgradation
KAHALGAON TPS	Central Sector	Bihar	ER	4	210	18-03-1996	21	N	N	150	100	137	Y	N			ESP Upgradation
MEJIA TPS	Central Sector	West Bengal	ER	1	210	01-03-1996	21	N	N	150	100	146	Y	N			ESP Upgradation
KAHALGAON TPS	Central Sector	Bihar	ER	3	210	24-03-1995	22	N	N	150	100	137	Y	N			ESP Upgradation
TENUGHAT TPS	State Sector	Jharkhand	ER	1	210	14-04-1994	23	N	N	150	100	108	Y	N			ESP Upgradation
KAHALGAON TPS	Central Sector	Bihar	ER	2	210	17-03-1994	23	N	N	150	100	137	Y	N			ESP Upgradation
FARAKKA STPS	Central Sector	West Bengal	ER	5	500	16-02-1994	23	N	N	150	100	141	Y	N			ESP Upgradation
KOLAGHAT TPS	State Sector	West Bengal	ER	5	210	28-12-1993	23	N	N	150	100	226	Y	N			ESP Upgradation
KOLAGHAT TPS	State Sector	West Bengal	ER	1	210	16-01-1993	24	N	N	150	100	961	Y	N			ESP Upgradation
FARAKKA STPS	Central Sector	West Bengal	ER	4	500	25-09-1992	24	N	N	150	100	143	Y	N			ESP Upgradation
KAHALGAON TPS	Central Sector	Bihar	ER	1	210	31-03-1992	25	N	N	150	100	137	Y	N			ESP Upgradation
KOLAGHAT TPS	State Sector	West Bengal	ER	6	210	17-03-1991	26	N	N	150	100	280	Y	N			ESP Upgradation
BOKARO 'B' TPS	Central Sector	Jharkhand	ER	2	210	01-11-1990	26	N	N	150	100	146	Y	N			ESP Upgradation
KOLAGHAT TPS	State Sector	West Bengal	ER	2	210	13-08-1990	26	N	N	150	100	985	Y	N			ESP Upgradation
BOKARO 'B' TPS	Central Sector	Jharkhand	ER	1	210	24-03-1986	31	N	N	150	100	138	Y	N			ESP Upgradation
MUZAFFARPUR TPS	Central Sector	Bihar	ER	2	110	17-03-1986	31	N	N	150	100	NA	Y	N	Y	2014	ESP Upgradation
FARAKKA STPS	Central Sector	West Bengal	ER	1	200	01-01-1986	31	N	N	150	100	117	Y	N			ESP Upgradation
KOLAGHAT TPS	State Sector	West Bengal	ER	3	210	16-12-1985	31	N	N	150	100	850	Y	N			ESP Upgradation
D.P.L. TPS	State Sector	West Bengal	ER	6	110	03-07-1985	32	N	N	150	100	NA	Y	N			ESP Upgradation
MUZAFFARPUR TPS	Central Sector	Bihar	ER	1	110	31-03-1985	32	N	N	150	100	NA	Y	N	Y	2013	ESP Upgradation
KOLAGHAT TPS	State Sector	West Bengal	ER	4	210	24-01-1984	33	N	N	150	100	208	Y	N			ESP Upgradation
BANDEL TPS	State Sector	West Bengal	ER	1	210	08-10-1982	34	N	N	150	100	236	Y	N			ESP Upgradation
BANDEL TPS	State Sector	West Bengal	ER	4	60	01-02-1966	51	N	N	150	100	134	Y	N			ESP Upgradation
BANDEL TPS	State Sector	West Bengal	ER	3	60	01-10-1965	51	N	N	150	100	119	Y	N			ESP Upgradation
BANDEL TPS	State Sector	West Bengal	ER	2	60	01-09-1965	51	N	N	150	100	107	Y	N			ESP Upgradation

TOTAL CAPACITY=5280 MW, NO OF UNITS=26