

Eastern Regional Power Committee, Kolkata

Minutes of Special Meeting on Preparation of Phasing Plan in respect of Eastern Region for implementation of new Environmental Norms for Thermal Plants, issued by MOEF&CC held on 13.02.2017 at 11:00 Hrs. at ERPC, Kolkata.

List of participants in the meeting is enclosed in **Annexure – I**.

Member Secretary, ERPC welcomed all the participants and specially welcomed Shri B. K. Sharma, CE (TPE & CC), CEA. Then all the participants introduced themselves. Member Secretary, ERPC requested Chief Engineer (TPE & CC), CEA to initiate the discussion and explain the issue to the participants.

Shri B. K. Sharma, CE, CEA thanked Member Secretary, ERPC for arranging the meeting and all others for participating in the meeting. He explained the following in the issue of **Phasing Plan for implementation of new Environmental Norms for Thermal Plants, issued by MOEF&CC**.

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 & NO_x emissions. The 1st & 2nd meeting of committee was held on 21.10.2016 and 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 circulated.
- (ii) As decided in meetings, 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. To complete the exercise a Special Meeting with Stakeholders were very much required and the the outcome of the meeting to be included in the report of the committee.
- (iii) Installation of low NO_x 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 NO_x burners/system, however, older units may not have low NO_x burners/system. The Committee recommended to take up installation of low NO_x system in these coal based thermal units during their next over- hauling period positively.

Following technical feasible options are available for reducing NO_x emissions:

- (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 NO_x burners (if required) may be taken up to bring down NO_x 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 NO_x 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.

On the issue of expenditure involved Shri Sharma, CE explained that 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.

Shri Sharma, CE, CEA intimated that around 4-6 weeks of shut down is required for the unit for final hooking up with the FGD.

He then requested the participants from the utilities to finalize their plan for phasing of FGD installation.

MPL representative highlighted the expenditure issue and asked for a clear guideline from CERC that how to recover the money spent for the purpose from tariff. All the other utility members present in the meeting also supported him.

Shri Sharma, CE explained that CEA is in regular touch with CERC and hoped that CERC would shortly come out with the methodology.

Another major issue, availability of space for installation of FGD was also highlighted by the participants.

Shri Sharma, CE requested the utilities to undertake the study through a vendor specialized in this filed for assessing the ground reality and suggest remedial measures. He also hoped that as technology has improved a lot, FGD could be installed by non convention method which the experts in the field may suggest. He emphasized that a vendor of suitable stature be appointed at the earliest and to request them to provide tailor made fitting plan.

NTPC representative informed that they would communicate detail plan for their units by 20th February to CEA with a copy to ERPC.

DVC representative explained that due to declaration of their old 57 MW units of Bokaro "A" as heritage plant, availability of land is the main constraint for their new Bokaro "A" units.

CESC also expressed that in Budge Budge as the available land is situated on two different sides of the main road, installation of FGD would be a problem. However, they will again study for space availability by this March'2017.

After detail deliberation, a quarter wise tentative plan for installation of FGD has been prepared for the thermal units of Eastern Region and the same is enclosed in **Annexure - II**. Constituent members were requested to further study the proposed plan for their respective units and if there is any change, the same may be communicated to CEA with a copy to ERPC within a week time positively.

Shri Sharma, CE, CEA once again thanked all the participants and requested them to expedite their activities on the issue as time is very shot.

Meeting ended with vote of thanks to the chair.

**Participants in Special meeting on Phasing Plan for implementation of new Environmental Norms
for Thermal Plants, issued by MOEF&CC**

Venue: ERPC Conference Hall, Kolkata

Time: 11:00 hrs

Date: 13.02.2017 (Monday)


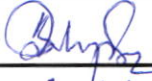
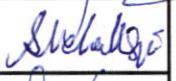
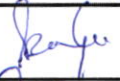
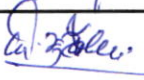
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**Participants in Special meeting on Phasing Plan for implementation of new Environmental Norms
for Thermal Plants, issued by MOEF&CC**

Venue: ERPC Conference Hall, Kolkata

Time: 11:00 hrs

Date: 13.02.2017 (Monday)

| Sl No | Name | Designation/ Organization | Contact Number | Email | Signature |
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UNITS IDENTIFIED FOR FGD INSTALLATION (UNITS INSTALLED AFTER 31-12-2003)

| Sr. No. | Developer | Name of Project | Sector | State | Region | Unit No | Total Capacity | DT-of COMMISSIONING | 2020 | | | | 2021 | | | | 2022 | |
|---------|----------------|--------------------|----------------|-------------|--------|---------|----------------|---------------------|------|----|----|----|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | | | | | | | Q1 | Q2 | Q3 | Q4 | Q1 (Jan-Mar) | Q2 (Apr-Jun) | Q3 (Jul-Sep) | Q4 (Oct-Dec) | Q1 (Jan-Mar) | Q2 (Apr-Jun) |
| 237 | D.V.C | BOKARO 'A' TPS | Central Sector | Jharkhand | ER | 1 | 500 | 22-03-2016 | | | | | | | | | v | |
| 1081 | NTPC | NABI NAGAR TPP | Central Sector | Bihar | ER | 1 | 250 | 20-03-2016 | | | | | | | | | | |
| 271 | D.V.C | RAGHUNATHPUR TPP | Central Sector | West Bengal | ER | 2 | 600 | 18-01-2016 | | | | | | | | v | | |
| 1657 | WBPDC | SAGARDIGHI TPS | State Sector | West Bengal | ER | 3 | 500 | 14-12-2015 | | | | | | | | v | | |
| 1156 | NTPC & Bihar | MUZAFFARPUR TPS | Central Sector | Bihar | ER | 3 | 195 | 31-03-2015 | | | | | | | | | | |
| 1021 | NTPC | BARH II | Central Sector | Bihar | ER | 2 | 660 | 04-03-2015 | | | | | | | | | | |
| 502 | JITPL | DERANG TPP | Private Sector | Odisha | ER | 2 | 600 | 24-01-2015 | | | | | v | | | | | |
| 268 | D.V.C | RAGHUNATHPUR TPP | Central Sector | West Bengal | ER | 1 | 600 | 24-08-2014 | | | | | | | | v | | |
| 501 | JITPL | DERANG TPP | Private Sector | Odisha | ER | 1 | 600 | 10-04-2014 | | | | | v | | | | | |
| 363 | GMR | KAMALANGA TPS | Private Sector | Odisha | ER | 3 | 350 | 21-03-2014 | | | | | | | v | | | |
| 1020 | NTPC | BARH II | Central Sector | Bihar | ER | 1 | 660 | 20-11-2013 | | | | | | | | | | |
| 362 | GMR | KAMALANGA TPS | Private Sector | Odisha | ER | 2 | 350 | 28-09-2013 | | | | | | | | v | | |
| 361 | GMR | KAMALANGA TPS | Private Sector | Odisha | ER | 1 | 350 | 29-03-2013 | | | | | | | | v | | |
| 257 | D.V.C | KODARMA TPP | Central Sector | Jharkhand | ER | 2 | 500 | 15-02-2013 | | | | | | | | v | | |
| 1263 | MPL | MAITHON RB TPP | Private Sector | Jharkhand | ER | 2 | 525 | 31-03-2012 | | | | | | | | | v | |
| 247 | D.V.C | DURGAPUR STEEL TPS | Central Sector | West Bengal | ER | 2 | 500 | 23-03-2012 | | | | | | v | | | | |
| 246 | D.V.C | DURGAPUR STEEL TPS | Central Sector | West Bengal | ER | 1 | 500 | 29-07-2011 | | | | | | v | | | | |
| 250 | D.V.C | KODARMA TPP | Central Sector | Jharkhand | ER | 1 | 500 | 20-07-2011 | | | | | | | | v | | |
| 1262 | MPL | MAITHON RB TPP | Private Sector | Jharkhand | ER | 1 | 525 | 30-06-2011 | | | | | | | v | | | |
| 1462 | TATA Power Co. | JOJOBBERA TPS | Private Sector | Jharkhand | ER | 5 | 120 | 27-03-2011 | | | | | v | | | | | |
| 267 | D.V.C | MEJIA TPS | Central Sector | West Bengal | ER | 8 | 500 | 26-03-2011 | | | | | | | v | | | |
| 1047 | NTPC | FARAKKA STPS | Central Sector | West Bengal | ER | 6 | 500 | 07-03-2011 | | | | | | | | | | |
| 1358 | Vedanta Ltd | Vedanta TPP | Private Sector | Odisha | ER | 2 | 600 | 29-12-2010 | | | | | | | | v | | |
| 264 | D.V.C | MEJIA TPS | Central Sector | West Bengal | ER | 7 | 500 | 30-09-2010 | | | | | | | v | | | |
| 202 | C.E.S.C. Pvt. | BUDGE BUDGE TPS | Private Sector | West Bengal | ER | 3 | 250 | 29-09-2009 | | | | | | | | v | | |
| 1067 | NTPC | KAHALGAON TPS | Central Sector | Bihar | ER | 7 | 500 | 31-07-2009 | | | | | | | | | | |
| | WBPDC | SAGARDIGHI TPS | State Sector | West Bengal | ER | 4 | 500 | | | | | v | | | | | | |
| | HEL | Haldia TPS | Private Sector | West Bengal | ER | 1 | 300 | | | | | | | | v | | | |
| | HEL | Haldia TPS | Private Sector | West Bengal | ER | 2 | 300 | | | | | | | | | v | | |
| | APNRL | Adhunik TPS | Private Sector | Jharkhand | ER | 1 | 270 | | | | | | | | | | v | |
| | APNRL | Adhunik TPS | Private Sector | Jharkhand | ER | 2 | 270 | | | | | | | | | | v | |

Note: NTPC will communicate their plan for all of their units by 20.02.2017 directly to CEA with a copy to ERPC.

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

| Sr. No. | Developer | Name of Project | Sector | State | Region | Unit No | Total Capacity | 2020 | | | | 2021 | | | | 2022 | |
|---------|---------------|-----------------|----------------|-------------|--------|---------|----------------|--|----|----|----|--------------|--------------|--------------|--------------|--------------|--------------|
| | | | | | | | | Q1 | Q2 | Q3 | Q4 | Q1 (Jan-Mar) | Q2 (Apr-Jun) | Q3 (Jul-Sep) | Q4 (Oct-Dec) | Q1 (Jan-Mar) | Q2 (Apr-Jun) |
| 1120 | NTPC | TALCHER STPS | Central Sector | Odisha | ER | 4 | 500 | | | | | | | | | | |
| 1119 | NTPC | TALCHER STPS | Central Sector | Odisha | ER | 3 | 500 | | | | | | | | | | |
| 201 | C.E.S.C. Pvt. | BUDGE BUDGE TPS | Private Sector | West Bengal | ER | 2 | 250 | CESC to Study & confirm for Space Availability for installation of FGD by March, 2017. | | | | | | | | | |
| 200 | C.E.S.C. Pvt. | BUDGE BUDGE TPS | Private Sector | West Bengal | ER | 1 | 250 | | | | | | | | | | |
| 1195 | OPGCLtd | IB VALLEY TPS | State Sector | Odisha | ER | 2 | 210 | | | | | | | √ | | | |
| 1194 | OPGCLtd | IB VALLEY TPS | State Sector | Odisha | ER | 1 | 210 | | | | | | | √ | | | |