

SPEED POST

B-33014/07/2018/IPC-II/TPP/ 380

April 06, 2018

To

The General Manager
Bokaro - B Thermal Power Station
Domodar Valley Corporation
Bokaro -829107; Jharkhand

Sub: Directions under Section 5 of the Environment (Protection) Act, 1986 regarding compliance of emission limit notified vide notification No.S.O.3305 (E) dated 07.12.2015 - reg.

WHEREAS, taking into consideration pollution from thermal power plants, Ministry of Environment, Forest & Climate Change had issued notification in the year 1984 laying out standards for thermal power plants. Further, the stack height regulation was notified in the year 1989, effluent standard for thermal power plants was notified in the year 1986, revised temperature limit of discharge of cooling water from the plants was notified in the year 1999, and use of beneficiated coal in the plants was issued in June 2002. The fly ash utilization notification was also issued on 14th September, 1999 and amended in the year 2003 and 2009. Thereafter, MoEF&CC vide Notification No.S.O.3305 (E) dated 07.12.2015 amended emission limit for particulate matter and notified new limits for Sulphur dioxide (SO₂), Oxides of Nitrogen (NO_x) and mercury emission, and water consumption limit for coal/lignite based thermal power plants. As per the notification dated 07.12.2015, thermal power plants are required to achieve the notified limit within two years from the date of the notification i.e. by 07.12.2017;

WHEREAS, with the implementation of the amendment in the notification dated 07.12.2015, it is expected that there would be reduction in emission of PM, Sulphur dioxide and oxide of Nitrogen, which in turn will help in improvement in Ambient Air Quality in and around thermal power plants, besides reduction of mercury emission, and reduction in water consumption in the thermal power plants.;

WHEREAS, in the meeting on Emission Norms for Thermal Power Plants and Coal Washeries (Environment & Forest Clearances) chaired by the Hon'ble Minister of Environment, Forest & Climate Change and Minister of Power, Coal & Renewable Energy on June 08, 2016, it was decided that a committee comprising of representatives from MoEF& CC, Ministry of Power (MoP), Central Electricity Authority (CEA), Ministry of Coal (MoC), Power Grid Corporation of India Limited (PGCI) and Central Pollution Control Board (CPCB) may be constituted to look into all issues related to implementation of norms;

WHEREAS, following decisions were also taken in the above meeting:

1. MoP/CEA shall submit plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation plan for each power plant. The implementation of plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and it shall be completed by the year 2022.
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of plan by December, 2016 for all the power plants.

WHEREAS, the MoP constituted a committee under the Chairmanship of Chairman, Central Electricity Authority (CEA) on 21.09.2016 to prepare an action plan for implementation of new emission limits;

WHEREAS, to ensure compliance of the new emission norms the MOEF&CC convened a meeting on 23.05.2017 in which CEA, NTPC and the Central Pollution Control Board participated;

WHEREAS, the MOEF&CC received a letter from Secretary Ministry of Power *vide* their D.O. letter No. FU-1/2016-IPC dated 30th June, 2017 indicating the concerns of various thermal power plants in the country with regard to the compliance with the new emission norms for the thermal power plants notified on 7.12.2015 particularly w.r.t. Particulate Matter (PM), Sulphur dioxide (SO₂) & Oxides of Nitrogen (NO_x);

WHEREAS, it was noted that out of present 196667 MW installed capacity, about 60 % capacity (1,15,214 MW) meets the new PM norms with existing ESP installations. Remaining capacity of 64,334 MW which does not meet the new environmental norms regarding PM will require retrofitting additional fields in Electrostatic Precipitator (ESP)/replacement of ESP in existing plants to meet the new emission norms of PM;

WHEREAS, Ministry of Power after consultation with Central electricity Authority informed that retrofitting additional fields in ESP/replacement of ESP in existing plants will need complete shutdown of 4-6 months for each unit;

WHEREAS, in order to meet SO₂ emission norms, FGD system shall be required to be installed in all plants. MoP informed that about 30-36 months required for design & engineering, approvals, funds arrangements, tendering, erection and commissioning of FGD. Besides, planned shutdown will be required as all plants cannot be shut down simultaneously. Another challenge highlighted for installation of FGD was availability of technologies/suppliers. In addition, issues relating to availability of good quality lime stone for operation of FGD and disposal of Gypsum to run the FGD in existing plants were also taken note of;

WHEREAS, the standard of 300 & 100 mg/NM³ would require installation of Selective Non Catalytic Reduction (SNCR) or Selective Non Catalytic Reduction (SCR). While these technologies are established globally, these are not established for Indian Coal, which has high ash content. Therefore, it was decided to engage various technology vendors to run pilots at NTPC stations to validate technology of SNCR/SCR system for Indian coal;

WHEREAS, the Ministry of Power in the letter dated 30.06.2017 enclosed the report outlining the plan of action for implementation of the new norms keeping in mind the techno-economic feasibility and ensuring availability of power to all at affordable cost without any disruption;

WHEREAS, as per the phasing plan proposed by MOP after consultation with CEA and Regional Power Committees, out of the installed capacity of 1, 87,162 MW (as on December, 2016), 8217 MW have been identified for retirement/already retired. Further, 12,974 MW of capacity already have either CFBC boilers or FGDs.

WHEREAS, a phasing plan was proposed for the balance 165971 MW of coal based thermal capacity for achieving compliance, out of which 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner and about 3205 MW of coal based capacity was stated to be compliant with revised norms of SO₂ emission;

WHEREAS, it was further noted that approximately about 16789 MW would not be able to install FGDs due to various constraints which include lack of space, etc.;

WHEREAS, CEA has worked out the requirement of capacity of coal based thermal power plants including hydro, wind, solar, gas based units to meet the estimated peak demand of 225 GW in 2021-22;

WHEREAS, MoP suggested that the compliance period of PM for the plants installing FGD may be kept same as per the FGD phasing plan;

WHEREAS, it was requested that for implementation of NO_x norms in the plants installed before 31.12.2003 a period of three years may be permitted to achieve specified standards of 600 mg/Nm³. For other plants a relaxation of 600 mg/Nm³ in place of 300 and 100 mg/Nm³ for a period of 3 years was also requested;

WHEREAS, taking into account the issues/concerns raised by the MoP and the sensitivity involved in the matter as it relates to general public of the country, the Ministry undertook detailed analysis of each of the issues in the meetings held on 06.07.2017, 27.07.2017, 11.08.2017 and 01.09.2017. These meetings were attended by the various stakeholders including Ministry of Power, CEA, NTPC etc.;

WHEREAS, MOEF & CC in the meeting with MoP, CEA, NTPC & CPCB etc. held on September 1, 2017 decided that the action plan submitted by MoP for 7 years i.e. up to 2024 was too long and it should instead commence from 2018 and implemented by 2022 with respect to all pollutants. It was further suggested that action plan should be revised prioritising the plants located in critically polluted area /close to habitation /urban area. Based on the decisions taken in the meeting Ministry of Power vide letter No. FU-1/2017-IPC dated 13.10.2017 submitted the revised action plan, to implement/phasing FGD installation/ ESP upgradation to meet new emission norms for thermal power plants;

WHEREAS, as per the revised plan submitted by the MoP vide letter dated 13.10.2017, 650 units comprising 196667 MW need to meet the new emission limits. Out of 650 units, FGD will be installed to achieve the emission limit of SO₂ by the year 2022 in 415 units comprising 161522 MW (01 unit by 2018, 08 units by 2019, and 55 units by 2020, 172 units by 2021 and 178 units by 2022, and for 01 units with 150 MW capacity plan is not received). Remaining 235 units comprised of 35145 MW either complying with SO₂ emission limits or planned for phasing out, or have not submitted plan for FGD;

WHEREAS, out of 650 units, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 for 231 units comprising of 65925 MW capacity (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, and for 09 units with capacity of 1400 MW plan is not received);

WHEREAS, out of 414 units, in 64 units FGD installation and upgradation of ESPs will be completed by December 31, 2020;

WHEREAS, with regard to compliance of emission limit of NO_x, it is suggested that pre combustion modification such as in situ modification in boiler, installation of Low NO_x burners and Over Fire Air shall be adopted besides installation of SCR/SNCR systems wherever needed by the year 2022;

WHEREAS, electricity is cleanest form of energy which helps in mitigating house hold air pollution which is matter of concern;

WHEREAS, there is need to provide electricity supply to people who do not yet have access to it;

WHEREAS, taking into consideration the technical challenges and time requirements for installation of FGD and other technologies to meet the new emission limits, the MoEF&CC vide its letter F. No. Q-15017/40/2007-CPW dated 07.12.2017 has directed CPCB to direct all the thermal power plants to ensure compliance with the norms laid down in the 07.12.2015 notification in accordance with the revised Plan submitted by the Ministry of Power letter dated 13.10.2017 as well as NO_x by 2022;

WHEREAS, based on the directions issued by the MoEF&CC to CPCB vide letter dated 07.12.2017, CPCB issued necessary directions to 414 units of 132 thermal power plants on 11.12.2017 to ensure compliance with the norms laid down in the 07.12.2015 notification in respective units in accordance with the revised Plan submitted by the Ministry of Power vide letter dated 13.10.2017;

WHEREAS, IIT, Kanpur in a study on "Air Pollution and Green House Gases (GHGs) in Delhi, January, 2016" indicated that there are 13 thermal power plants (TPP) with a capacity of over 11000 MW in the radius of 300km of Delhi, which are expected to contribute to secondary particles. Hence, 13 Thermal Power Plants were issued directions to comply new emission norms by December 31, 2019;

WHEREAS, remaining 109 units are more than 25 years old, having more potential to pollute environment;

WHEREAS, vide letter dated 27.12.2017 and 02.01.2018 CPCB had requested Ministry MoEF & CC to provide status of remaining 109 (1+67+41) units for which no plan/time schedule for ESP upgradation and FGD installation has been received;

WHEREAS, FGD phasing plan / unit phase out plan were discussed in the meeting held on 07.02.2018 in CPCB Head Office with senior officers of thermal power plants concerning 109 (1+67+41) units for which Ministry of Power had not proposed any action plan vide its letter No. FU-1/2017-IPC dated 13.10.2017;

WHEREAS, according to the information submitted in reference to the above meeting, 17 units propose to install FGD with time lines varying from December 2021 to December 2022, 6 more units reported to have retired (in addition to 41 units reported earlier as already retired) and 86 units have retirement/phase out plan having various time line, up to December 2022;

WHEREAS, to decide time line for implementation of FGD and other technologies to meet new emission norms in power plants, a meeting was conducted with technology providers on February 09, 2018 and based on the assessment of time required to implement necessary measures to achieve revised emission norms, fresh time lines were worked out for implementation of new emission norms notified on 07.12.2015 in above mentioned Thermal Power Plants;

WHEREAS, vide No. letter B-33014/7/2018/IPC-II dated February 13, 2018, the Ministry of Environment, Forest & Climate Change, Government of India, has been requested to consider the proposed time lines and grant approval for issuing directions.

WHEREAS, the MoEF&CC vide its letter F. No. Q-15017/40/2007-CPW dated 27.02.2018 has directed CPCB to take necessary action in the above matter under appropriate section of EPA, 1986;

WHEREAS, the Ministry of Environment, Forest & Climate Change, Government of India, vide Notifications No. S. O. 157 (E) of 27.02.1996 and S. O. 730 (E) dated 10.07.2002, has delegated the powers vested under Section 5 of the Environment (Protection) Act, 1986 (29 of 1986) to the Chairman, Central Pollution Control Board, to issue directions to any industry or any local body or any other authority for violations of the standards and rules notified under the Environment (Protection) Rules, 1986 and amendment thereof.

NOW, THEREFORE, taking into consideration all material facts including environmental concerns and ensuring stability of power supply and need for implementation of new emission norms notified on 07.12.2015 and in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Bokaro - B Thermal Power Station (Unit- 3), DVC, Bokaro, Jharkhand:

- i. That plant shall retrofit/ install Electrostatic Precipitator (ESP) and install FGD by December 31, 2020 so as to comply with PM & SO₂ emission limits.
- ii. That plant shall take immediate measure like installation of low NO_x burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NO_x emission limit latest by December 31, 2020.
- iii. That plant shall not operate beyond December 31, 2020, if it fails to comply with new/ revised emission limits for SO₂, NO_x & PM.

M/s Bokaro - B Thermal Power Station (Unit- 3), DVC, Bokaro, Jharkhand shall ensure compliance of directions mentioned above (i to iii), failing which action will be taken under appropriate provisions of the Environment (Protection) Act, 1986.

(S.P.S. Parihar)
Chairman

10/4/18

Copy to:

1. The Chairman
Jharkhand State Pollution Control Board
T.A. Bldg., HEC, P. O.
Dhurwa, Ranchi-834 004 (Jharkhand)
2. The Adviser (CP Division)
Ministry of Environment, Forests and Climate Change
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Jor Bagh Road, New Delhi - 110003
3. The Joint Secretary (Thermal)
Ministry of Power,
Shram Shakti Bhawan, Rafi Marg,
New Delhi

4. The Regional Director,
Central Pollution Control Board
Southend Conclave, Block 502,
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Rajdanga Main Road
Kolkata - 700 107

5. The Divisional Head - IT, CPCB



(A. Sudhakar)

Member Secretary

10/4/2018