

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s Rajpura Thermal Power Plant
Nabha Power, Nalash/Nalas Village,
Rajpura, Dist. Patiala,
Punjab

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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-CPWdated 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 13.10.2017as well as NOx by 2022;

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.

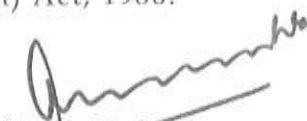

NOW, THEREFORE, taking into consideration all material facts including environmental concerns and ensuring stability of power supply and need for phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Rajpura Thermal Power Plant, Rajpura, Punjab:

- i. That plant shall meet emission limit of PM immediately by installing Electrostatic Precipitator (ESP).
- ii. That plant shall install FGD by December 31, 2019 in Unit 1 & 2 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2019

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

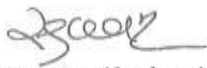
The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Rajpura Thermal Power Plant, Rajpura, Punjab shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman


Copy to:

1. The Chairman
Punjab Pollution Control Board
Vatavaran Bhawan, Nabha Road
Patiala-147001, Punjab
2. The Addl. Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh Road, New Delhi - 110003
3. The Joint Secretary
Ministry of Power
Shashtri Bhawan, Rafi Marg
New Delhi
4. The Regional Director,
Central Pollution Control Board
PICUP Bhawan, Ground Floor
Vibhuti Khand, Gomti Nagar
Lucknow-226010
5. The Divisional Head - IT, CPCB


(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s Guru Hargobind Singh Thermal Power Station
Punjab State Electricity Board
Lehra Mohabbat, Bhatinda,
Punjab

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 13.10.17, 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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.

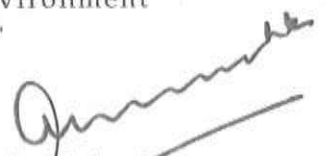
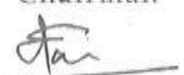
NOW, THEREFORE, taking into consideration all material facts including environmental concerns and ensuring stability of power supply and need for phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Guru Gobind Singh Thermal Power Station, Lehra Mohabbat, Punjab :

- i. That plant shall install/retrofit Electrostatic Precipitator (ESP) by December 31, 2019 in Unit 1, 2, 3 & 4 respectively so as to achieve PM emission limit.
- ii. That plant shall install FGD by December 31, 2019 in Unit 1, 2, 3 & 4 respectively so as to comply SO₂ emission limit.
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2019

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Guru Gobind Singh Thermal Power Station, Lehra Mohabbat, Punjab shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman


Copy to:

1. The Chairman
Punjab Pollution Control Board
Vatavaran Bhawan, Nabha Road
Patiala 147 001, Punjab
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110 003
3. The Joint Secretary (Thermal)
Ministry of Power
Shram Shakti Bhawan, Rafi Marg
New Delhi
4. The Regional Director,
Central Pollution Control Board
PICUP Bhawan, Ground Floor
Vibhuti Khand, Gomti Nagar
Lucknow-226010
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s Chhabra Thermal Power Station
Rajasthan Rajya Vidyut Utpadan Nigam Ltd.
Village: Motipura, Teh: Chhabra
Dist: Baran, Rajasthan

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WHEREAS, with the implementation of the amendment 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 water use in the thermal power plants will reduce;

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WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

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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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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-CPWdated 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 13.10.2017as well as NOx by 2022;

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.

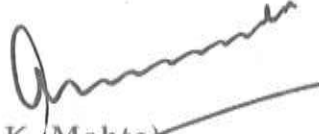
NOW, THEREFORE, taking into consideration all material facts including environmental concerns and ensuring stability of power supply and need for phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Chhabra Thermal Power Station:

- i. That plant shall install/ retrofit Electrostatic Precipitator (ESP) so as to comply PM emission limit by December 31, 2021, October 31, 2021, August 31, 2021, August 31, 2021 and April 30, 2020 in Unit 1, 2, 3, 4 & 5 respectively
- ii. That plant shall install FGD by December 31, 2021, October 31, 2021, August 31, 2021, August 31, 2021 and April 30, 2020 in Unit 1, 2, 3, 4 & 5 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

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


(A.K. Mehta)
Chairman

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Copy to:

1. The Chairman
Rajasthan Pollution Control Board
A-4, Institutional Area
Jalana Dungri
Jaipur-302 004 Rajasthan
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110003
4. The Joint Secretary (Thermal)
Ministry of power
Shram Shakti Bhawan, Rafi Marg
New Delhi
3. The Regional Director,
Central Pollution Control Board
4th Floor, Sahkar Bhawan, North TT Nagar
Bhopal - 462 003
- ✓ 5. The Divisional Head - IT, CPCB


(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s Kawai Thermal Power Station
Adani Power Ltd, Kawai Village,
Atru Taluk, Baran District,
Rajasthan

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce; ...

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Kawai Thermal Power Station:

- i. That plant shall install/ retrofit Electrostatic Precipitator (ESP) so as to immediately comply PM emission limit
- ii. That plant shall install FGD by August 31, 2020 and June 30, 2020 in Unit 1 & 2 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

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


(A.K. Mehta)
Chairman


Copy to:

1. The Chairman
Rajasthan Pollution Control Board
A-4, Institutional Area
Jalana Dungri
Jaipur-302 004 Rajasthan
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110003
4. The Joint Secretary (Thermal)
Ministry of power
Shram Shakti Bhawan, Rafi Marg
New Delhi
3. The Regional Director,
Central Pollution Control Board
4th Floor, Sahkar Bhawan, North TT Nagar
Bhopal - 462 003
- ✓ 5. The Divisional Head - IT, CPCB


(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s Kalisindh Thermal Power Station
Rajasthan Rajya Vidyut Vitaran Nigam Ltd
Kalisindh Village, Dist. Jhalawar,
Rajasthan

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Kalisindh Thermal Power Station:

- i. That plant shall install/ retrofit Electrostatic Precipitator (ESP) so as to immediately comply PM emission limit
- ii. That plant shall install FGD by June 30, 2021 and April 30, 2021 in Unit 1 & 2 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants


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


(A.K. Mehta)
Chairman



Copy to:

1. The Chairman
Rajasthan Pollution Control Board
A-4, Institutional Area
Jalana Dungri
Jaipur-302 004 Rajasthan
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110003
4. The Joint Secretary (Thermal)
Ministry of power
Shram Shakti Bhawan, Rafi Marg
New Delhi
3. The Regional Director,
Central Pollution Control Board
4th Floor, Sahkar Bhawan, North TT Nagar
Bhopal - 462 003
- ✓ 5. The Divisional Head - IT, CPCB


(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s Suratgarh Super Thermal Power Station
Rajasthan Vidyut Utpadan Nigam Ltd.
Suratgarh, Rajasthan

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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-

CPWdated 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 13.10.2017as well as NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Suratgarh Super Thermal Power Station:

- i. That plant shall install/ retrofit Electrostatic Precipitator (ESP) so as to comply PM emission limit by February 28, 2022 in Unit 6
- ii. That plant shall install FGD by December 31, 2022, October 31, 2022, August 31, 2022, June 30, 2022, April 30, 2022 and February 28, 2022 in Unit 1,2,3,4,5 & 6 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

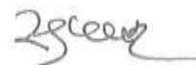
M/s Suratgarh Super Thermal Power Station shall ensure compliance of directions mentioned above (i to iii) failing which action will be-taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman


Copy to:

1. The Chairman
Rajasthan Pollution Control Board
A-4, Institutional Area
Jalana Dungri
Jaipur-302 004 . Rajasthan
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110003
4. The Joint Secretary (Thermal)
Ministry of power
Shram Shakti Bhawan, Rafi Marg
New Delhi
3. The Regional Director,
Central Pollution Control Board
4th Floor, Sahkar Bhawan, North TT Nagar
Bhopal - 462 003

✓ 5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s Kota Thermal Power Station
Rajasthan Vidyut Utpadan Nigam Ltd.
Dada Bari, Kota, Rajasthan

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Kota Thermal Power Station:

- i. That plant shall install/ retrofit Electrostatic Precipitator (ESP) so as to comply PM emission limit by December 31, 2022 in Unit 5 & 6
- ii. That plant shall install FGD by December 31, 2022 in Unit 5 & 6 and October 31, 2022 in Unit 7 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

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



(A.K. Mehta)
Chairman



Copy to:

1. The Chairman
Rajasthan Pollution Control Board
A-4, Institutional Area
Jalana Dungri
Jaipur-302 004 Rajasthan
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110003
4. The Joint Secretary (Thermal)
Ministry of power
Shram Shakti Bhawan, Rafi Marg
New Delhi
3. The Regional Director,
Central Pollution Control Board
4th Floor, Sahkar Bhawan, North TT Nagar
Bhopal - 462 003

✓  The Divisional Head - IT, CPCB


(A. Sudhakar)
Member Secretary

SPEED POST

December 11, 2017

B-33014/07/2017-18/IPC-II/TPP/

To

The General Manager
Raj West Power Ltd. (JSW)
Jalipura, Jodhpur 342003
Rajasthan

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022 /
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Raj West Power Ltd. (JSW) :

- i. That plant shall install installing Electrostatic Precipitator (ESP) by December 31, 2022 in unit 1&2, August 31, 2022 in unit 3&4, April 30, 2022 in unit 5&6 and December 31, 2021 in unit 7&8 respectively so as to comply PM emission limit
- ii. That plant shall meet SO₂ emission limit by installing FGD/lime injection as applicable immediately
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Raj West Power Ltd. (JSW) shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman



Copy to:

1. The Chairman
Rajasthan Pollution Control Board,
A-4, Institutional Area,
Jalana Dungri, Jaipur 302 004,
Rajasthan
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110 003
3. The Joint Secretary (Thermal)
Ministry of Power
Shram Shakti Bhawan, Rafi Marg
New Delhi
4. The Regional Director,
Central Pollution Control Board
4th Floor, Sahkar Bhawan, North TT Nagar,
Bhopal - 462 003
- ✓ 5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

The General Manager
Mettur Thermal Power Station
Mettur Dam-636406, Tamil Nadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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. PU-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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Mettur Thermal Power Station, Tangenco:

- i. That plant shall install installing Electrostatic Precipitator (ESP) by March 31, 2021, June 30, 2021, September 30, 2021 & December 31, 2021 in unit 1,2,3 & 4 respectively so as to comply PM emission limit
- ii. That plant shall meet SO₂ emission limit by installing FGD/lime injection as applicable immediately
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Mettur Thermal Power Station, Tangenco shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman
108

Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s NTPL-Tuticorin Thermal Power Project
2 X 500 MW Thermal Power Project,
Joint Venture of NLC & TNEB,
Harbour Estate, Tuticorin - 628 004, Tamilnadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s NTPL-Tuticorin Thermal Power Project:

- i. That plant shall retrofit/ install Electrostatic Precipitator (ESP) by December 31, 2021 and June 30, 2020 in Unit 1 & 2 respectively so as to comply with PM emission limit.
- ii. That plant shall install FGD by December 31, 2021 and June 30, 2020 in Unit 1 & 2 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s NTPL-Tuticorin Thermal Power Project shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman

Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

The General Manager
North Chennai Thermal Power Station
Tangedco, Chennai - 600 120,
Tamil Nadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s North Chennai Thermal Power Station, Tangedco:

- i. That plant shall retrofit/ install Electrostatic Precipitator (ESP) by December 31, 2022, June 30, 2022 and March 31, 2022 in Unit 1, 2 & 3 respectively so as to comply with PM emission limit.
- ii. That plant shall install FGD by December 31, 2022, June 30, 2022 and March 31, 2022 in Unit 1, 2 & 3 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants


M/s North Chennai Thermal Power Station, Tangedco shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman

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Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

M/s. TAQA Neyveli Electric Company Pvt. Ltd,
Uthangai Village, Virudhachalam Taluk.
Dist. Cuddalore 639 112
Tamil Nadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

1
M/s. TAQA Neyveli Electric Company Pvt. Ltd,

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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 (1,15,244 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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s. TAQA Neyveli Electric Company Pvt. Ltd.:

- i. That plant shall install / retrofit Electrostatic Precipitator (ESP) immediately to comply with PM limit
- ii. That plant shall install FGD by June 2020 in unit 2 so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

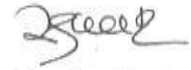
The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s. TAQA Neyveli Electric Company Pvt. Ltd, shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman

Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

Neyveli Lignite Thermal Power Station Extension
Neyveli, Tamilnadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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. PU-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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to Neyveli Lignite Thermal Power Station Extension:

- i. That plant shall install / retrofit Electrostatic Precipitator (ESP) immediately to comply with PM limit
- ii. That plant shall install FGD by June 2021 & December 2021 in unit 1 & 2 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

Neyveli Lignite Thermal Power Station Extension, shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman


Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

Neyveli Lignite Thermal Power Station 2
Neyveli, Tamilnadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to Neyveli Lignite Thermal Power Station 2:

- i. That plant shall install / retrofit Electrostatic Precipitator (ESP) immediately to comply with PM limit
- ii. That plant shall install FGD by December 2021, September 2021, June 2021, March 2022, June 2022, September 2022 & December 2022 in unit 1, 2, 3, 4, 5, 6 & 7 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

Neyveli Lignite Thermal Power Station 2, shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman

Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

North Chennai Thermal Power Station, ~~Extm.~~
Chennai - 600 120, Tamil Nadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and /CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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;

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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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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.;

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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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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WHEREAS, electricity is cleanest form of energy which helps in mitigating household 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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to North Chennai Thermal Power Station^(Extn):

- i. That plant shall install / retrofit Electrostatic Precipitator (ESP) immediately to comply with PM limit
- ii. That plant shall install FGD by December 2019 & September 2020 in unit 1 & 2 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

North Chennai Thermal Power Station^(Extn) shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman



Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary, (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

Vallur Thermal Power Project,
Vellivoyal Chavadi, Ponneri Taluk,
Tiruvallur, Chennai- 600 103
Tamil Nadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to Vallur Thermal Power Project:

- i. That plant shall install / retrofit Electrostatic Precipitator (ESP) immediately to comply with PM limit
- ii. That plant shall install FGD by June 2022, September 2022 & December 2022 in unit 1, 2 & 3 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

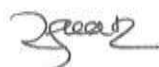
The time line for compliance of water consumption limit shall also be finalised in consultation of plants

Vallur Thermal Power Project, shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman


Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB


(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

Mutiara Thermal Power Plant (Coastal Energen),
Melamaruthur Village, Ottapidaram Taluk,
Dist. Tuticorin, Tamil Nadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to Mutiara Thermal Power Plant (Coastal Energen):

- i. That plant shall install / retrofit Electrostatic Precipitator (ESP) immediately to comply with PM limit
- ii. That plant shall install FGD by September 2022 & December 2022 in unit 1 & 2 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

Mutiara Thermal Power Plant (Coastal Energen) shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman



Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

Mettur Thermal Power Station [Extn]
Mettur Dam-636406, Tamil Nadu

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to Mettur Thermal Power Station^(Extn):

- i. That plant shall install / retrofit Electrostatic Precipitator (ESP) immediately to comply with PM limit
- ii. That plant shall install FGD by December 2020 in unit 1 so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

Mettur Thermal Power Station^(Extn) shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman



Copy to:

1. The Chairman
Tamil Nadu Pollution Control Board
No. 76, Mount Salai, Guindy
Chennai- 600 032, Tamilnadu
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
JorBagh 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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

The General Manager
Kothagudem Thermal Power Station
TSGENCO, Paloncha,
Distt. Khammam - 507 115, Telangana

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Kothagudem Thermal Power Station, TSGENCO:

- i. That plant shall retrofit/ install Electrostatic Precipitator (ESP) by September 30, 2019 in Unit 11 so as to comply with PM emission limit.
- ii. That plant shall install FGD by September 30, 2019 in Unit 11 so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Kothagudem Thermal Power Station, TSGENCO shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman
hgf

Copy to:

1. The Chairman
Telangana State Pollution Control Board
Paryavaran Bhavan,
A-III, Industrial Estate, Sanathnagar,
Hyderabad - 500 018
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru - 560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

The General Manager
Kakatiya Thermal Power Project,
TSGENCO, Chelpur (V), Ghanpur,
Dist. Warrangal- 506168, Telangana

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Kakatiya Thermal Power Project, TSGENCO:

- i. That plant shall retrofit/ install Electrostatic Precipitator (ESP) by March 31, 2020 in Unit 1 so as to comply with PM emission limit.
- ii. That plant shall install FGD by March 31, 2020 and June 30, 2020 in Unit 1 & 2 so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Kakatiya Thermal Power Project, TSGENCO shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986


(A.K. Mehta)
Chairman

hgf

Copy to:

1. The Chairman
Telangana State Pollution Control Board
Paryavaran Bhavan,
A-III, Industrial Estate, Sanathnagar,
Hyderabad - 500 018
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru -560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

The General manager
Ramagundam Super Thermal Power Station
N.T.P.C Ltd, P.O. Jyothinagar,
Dist. Karim Nagar-505 215, Telangana

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unitwise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Ramagundam Super Thermal Power Station, NTPC Ltd:

- i. That plant shall retrofit/ install Electrostatic Precipitator (ESP) by March 31, 2022 in Unit 2, June 30, 2022 in Unit 4, September 30, 2022 in Unit 5 & 6 and December 31, 2022 in Unit 7 respectively so as to comply with PM emission limit.
- ii. That plant shall install FGD by March 31, 2022 in Unit 1 & 2, June 30, 2022 in Unit 3 & 4, September 30, 2022 in Unit 5 & 6 and December 31, 2022 in Unit 7 respectively so as to comply SO₂ emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Ramagundam Super Thermal Power Station, NTPC Ltd shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman

Copy to:

1. The Chairman
Telangana State Pollution Control Board
Paryavaran Bhavan,
A-III, Industrial Estate, Sanathnagar,
Hyderabad - 500 018
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
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
1st & 2nd Floors, Nisarga Bhavan, A-Block,
Thimmaiah Main Road, 7th D Cross,
Shivanagar, Bengaluru - 560 079
5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

Dadri Thermal Power Station (NCTPS)
National thermal Power corporation
Dadri, Dist: Gautambudhnagar-201008; U.P

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Dadri Thermal Power Station (NCTPS), NTPC Ltd. :

- i. That plant shall meet PM emission limit immediately by installing Electrostatic Precipitator.
- ii. That plant shall install FGD by December 31, 2019 in Unit 1,2,3,4,5 & 6 respectively so as to comply SO₂ emission limit.
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2019

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

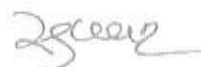
The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Dadri Thermal Power Station (NCTPS), NTPC Ltd shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman


Copy to:

1. The Chairman
Uttar Pradesh Pollution Control Board
IIIrd Floor PICUP Bhavan
Vibhuthi Khand, Gomti Nagar,
Lucknow - 226 020, UP
2. The Joint Secretary (CP Division)
Ministry of Environment, Forests and Climate Change
Prithvi Wing, 2nd Floor, Room No. 216
Indira Paryavaran Bhawan, Aliganj,
Jor Bagh Road, New Delhi - 110 003
3. The Joint Secretary (Thermal)
Ministry of Power
Shram Shakti Bhawan, Rafi Marg
New Delhi
4. The Regional Director,
Central Pollution Control Board
PICUP Bhawan, Ground Floor
Vibhuti Khand, Gomti Nagar
Lucknow-226 010
- ✓ 5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary

SPEED POST

B-33014/07/2017-18/IPC-II/TPP/

December 11, 2017

To

Bara Thermal Power Project
(Prayagraj Thermal Power Project)
Bara Village, Bara Tehsil,
Allahabad, Uttar Pradesh

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 and effluent standard for thermal power plants was notified in the year 1986. The revised temperature limit of discharge of cooling water from the plants was notified in the year 1999 and thereafter 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 has 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 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 water use in the thermal power plants will reduce;

WHEREAS, in the meeting on Coal Washeries (Environment & Forest Clearances) and Emission Norms for Thermal Power Plants 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 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 the all issues related to implementation of norms;

WHEREAS, following decisions were taken in the meeting:

WHEREAS, following decisions were taken in the meeting:

1. MoP/CEA shall submit action plan by December 2016 for phasing out of the power plants commissioned before December, 2003.
2. MoP / CEA shall submit action plan by December, 2016 in respect of power plants commissioned during January, 2004 to December, 2016 indicating unit wise retrofit / renovation for each power plant. The implementation of action plan shall be taken up in backward manner starting from the plants commissioned in the 2015 and the shall be completed by 15.08.2022
3. MoP and CEA shall coordinate with each State Public Sector Undertakings separately for submission of action plan by December, 2016 for all the power plants.

WHEREAS, it was further decided that MoP shall take action for installation of Flue gas Desulphurisation (FGD) if needed to achieve prescribed SO₂ norms based on the SO₂ emission levels from power plants;

WHEREAS, it was also pointed out that NO_x control technology in case of Indian coal is not established. Selective Catalytic Reduction (SCR) technology is used for NO_x control, however, its feasibility for Indian coal needs to be established. MoP suggested that Pilot studies may be taken up in two plants and based on the results, further action plan to be drawn regarding retrofitting of SCR in plants to achieve prescribed NO_x norms;

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, requiring 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 with 145977 MW capacity proposing installation of FGDs within a period of 7 years to be undertaken in a phased manner. 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 also 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 all 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, 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;

WHEREAS, ESP upgradation to achieve emission limit of particulate matter will be completed by the year 2022 in PM for 231 units comprising of 65925 MW capacity out of 650 units (01 unit by 2018, 02 units by 2019, 28 units by 2020, 97 units by 2021 and 94 units by 2022, for 09 units of 1400 MW capacity plan by 2022);

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

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 NOx by 2022;

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 phasing the implementation, in exercise of powers vested under Section 5 of the Environment (Protection) Act, 1986, following directions are issued to M/s Bara Thermal Power Project, (Prayagraj Thermal Power Project), UPRVUNL:

- i. That plant shall install/retrofit Electrostatic Precipitators (ESP) by February 28, 2020 in unit 3 so as to comply PM emission limit
- ii. That plant shall install FGD by April 30, 2020, June 30, 2020 & February 28, 2020 in unit 1,2 & 3 respectively so as to comply SO2 emission limit
- iii. That plant shall take immediate measure like installation of low NOx burners, providing Over Fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022

The time line mentioned above (i to iii) for compliance of PM, SO₂ & NOx emission limits shall be reviewed by CPCB within a period of three months and shall be brought down further considering the location specificity of the plant such as critical polluted area/ closeness to habitation/ urban area.

The time line for compliance of water consumption limit shall also be finalised in consultation of plants

M/s Bara Thermal Power Project, (Prayagraj Thermal Power Project), UPRVUNL shall ensure compliance of directions mentioned above (i to iii) failing which action will be taken under the appropriate provisions of the Environment (Protection) Act, 1986.


(A.K. Mehta)
Chairman

hgf

Copy to:

1. The Chairman
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2. The Joint Secretary (CP Division)
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3. The Joint Secretary (Thermal)
Ministry of Power
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4. The Regional Director,
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- ✓ 5. The Divisional Head - IT, CPCB



(A. Sudhakar)
Member Secretary