



सत्यमेव जयते

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

तापीय यांत्रिकी एवं अभियांत्रिकी विकास प्रभाग

Thermal Engineering & Technology Development Division

संख्या: CEA/TETD-TT/2020/N-15/

दिनांक : 4.05.2020

सेवा में

सचिव,

केंद्रीय विद्युत विनियामक आयोग,

तीसरी और चौथी मंजिल,

चंद्रलोक बिल्डिंग, 36, जनपथ,

नई दिल्ली - 110 001

**विषय: CERC Terms and Conditions of Tariff (First Amendment) Regulations 2020 dated 1<sup>st</sup> April, 2020 – Comments on Draft Notification - के बारे में.**

महोदय,

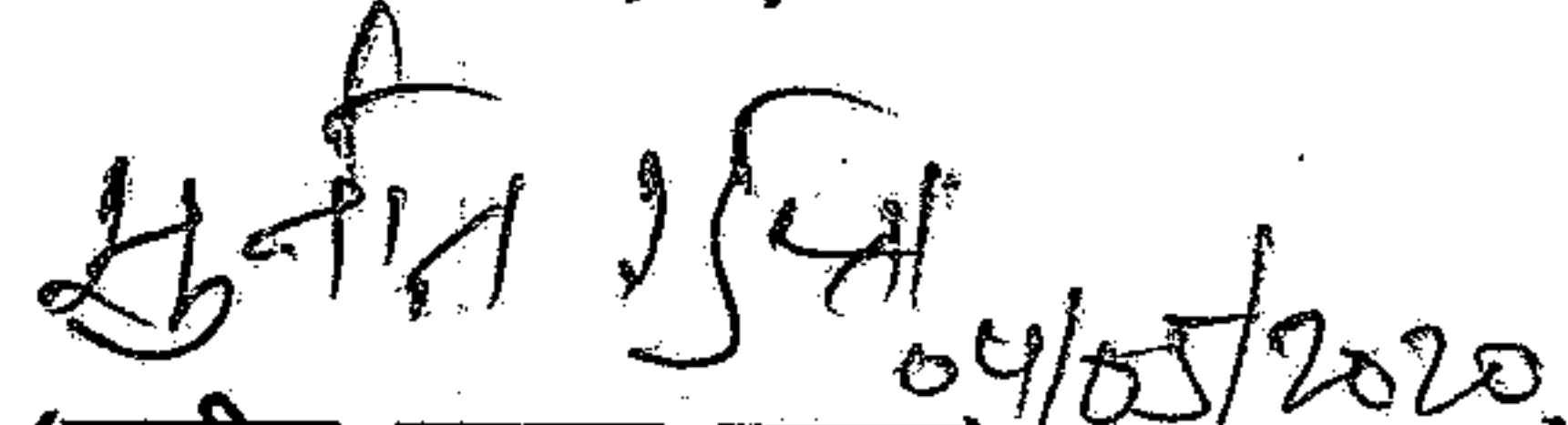
This is with reference to draft Notification on Central Electricity Regulatory Commission (terms and Conditions of Tariff) (First Amendment) Regulations, 2020 downloaded from CERC website.

The draft notification on CERC Regulations, 2020 (First Amendment), related to additional operation norms for thermal generating stations (coal & lignite) for units/ stations on account of installation of Environment Control Systems (ECS) for complying MoEF&CC new environmental norms, have been examined and our observations/ comments on the draft notification are given at Annexure.

This issues with approval of Chairperson, CEA.

संलग्नक: यथोपरी.

भवदीय,

  
(सुनीत कुमार गुप्ता)

उप - निदेशक

Copy for kind information to: i) अध्यक्ष, के.वि.प्रा.  
ii) मुख्य अभियंता (R.A. प्रभाग), के.वि.प्रा.

Annexure

**Comments on draft notification in respect of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2020 dated 1<sup>st</sup> April 2020.**

1. **Clause 25** Amendment of Regulation 49 of the Principal Regulations:

Sub Clause 25.1

It is to mention that emission control system is applicable for all coal and lignite based power plants. Therefore, it is suggested that instead of inserting a sub-clause (bb) after sub-clause (b) of clause (E) of Principal Regulation 49, the auxiliary energy consumption on account of emission control systems is suggested to be indicated under a new clause (F) to be added after clause (E) of Regulation 49 of the Principal Regulations.

2. **Clause 25** Amendment of Regulation 49 of the Principal Regulations:

Sub Clause 25.2

i) In line with comment at (1) above in respect of Sub Clause 25.1 above, the new clause under Sub Clause 25.2 should be added as clause (G) instead of (F) of Regulation 49 of the Principal Regulations.

ii) Sub clause F (a):

a) The reference of words under the meaning of CVPF as "primary fuel" and weighted average GCV on "per litre or per standard cubic meter", as applicable for lignite based stations at page 19 may be reviewed for deletion.

b) The "K" factor is indicated as dependent on design SO<sub>2</sub> removal efficiency. Its value for units to comply with SO<sub>2</sub> emission norm of 100/200 mg/Nm<sup>3</sup> is taken as 35.2 with reference SO<sub>2</sub> removal efficiency as 96% and for units to comply with SO<sub>2</sub> emission norm of 600 mg/Nm<sup>3</sup> its value is taken as 26.8 with reference SO<sub>2</sub> removal efficiency as 73%.

In our opinion, "K" should not be indicated as dependent on design SO<sub>2</sub> removal efficiency of FGD system, since for lower requirement also (say 70% required for some unit having norm of 600 mg/Nm<sup>3</sup>), the FGD



system can be designed for higher efficiency (say 95%) but operated only at about 70% to comply with the emission norms. As such, for units to comply with SO<sub>2</sub> emission norm of 100/ 200 mg/Nm<sup>3</sup>, "K" should be taken as 35.2 (having reasonable inbuilt SO<sub>2</sub> removal efficiency factor of 96%) and for units to comply with SO<sub>2</sub> emission norm of 600 mg/Nm<sup>3</sup>, it should be taken as 26.8 (having reasonable inbuilt SO<sub>2</sub> removal efficiency factor of 73%).

- c) In the formula for specific limestone consumption (g/kWh) at page 19, the limestone purity (LP) is indicated in percentage. For correct result, the reference limestone purity factor of 0.85 in the formula needs to be taken as 85.
- d) Considering above aspect, the formula for specific limestone consumption (g/kWh) should be corrected as mentioned below:

$$[K \times SHR \times S / CVPF] \times [85/LP]$$

Where,

$$K = 35.2 \text{ for units to comply with SO}_2 \text{ emission norm of 100/ 200 mg/Nm}^3,$$
$$= 26.8 \text{ for units to comply with SO}_2 \text{ emission norm of 600 mg/Nm}^3.$$

The other terms viz. "SHR", "S", "CVPF" and "LP" have same meaning as indicated in CERC draft notification.

- iii) Sub clause F (b):

In the formula for specific limes consumption (g/kWh) at page 20, the purity of lime (PL) is indicated in percentage. For correct result, the reference purity of lime mentioned as 0.90 in the formula needs to be taken as 90. Accordingly, the formula for specific lime consumption should be indicated as below:

$$[6 \times (90/PL)] \text{ gm/kWh};$$

Where,

PL = Purity of lime in percentage (%)

- iv) Sub clause F (d):

- a) For CFBC Technology (furnace injection) based generating station, with limestone purity taken as variable factor, the reference of "85% purity limestone" needs to be deleted from first para.

- b) The unit of specific limestone consumption indicated as “kg/kWh” in first para may be corrected to “g/kWh”.
- c) In the formula for specific limestone consumption (g/kWh), the limestone purity (LP) is indicated in percentage. For correct result, the reference limestone purity factor of 0.85 needs to be taken as 85.
- d) Considering above aspect, the formula for specific limestone consumption (g/kWh) for CFBC based generating station (furnace injection) should be corrected as mentioned below:

$$\mathbf{[62.9 \times SHR \times S / CVPF] \times [85/ LP]}$$

The terms “SHR”, “S”, “CVPF” and “LP” have same meaning as indicated in CERC draft notification.

- e) The reference of words under the meaning of CVPF as “primary fuel” and weighted average GCV on “per litre or per standard cubic meter”, as applicable for lignite based stations at page 21 may be reviewed for deletion.
3. The limestone consumption norms for lignite-based generating station using CFBC technology indicated at Clause (E) (d) (iv) of Regulation 49 of the Principal Regulations needs to be deleted considering the amendment at sub clause F(d) for CFBC Technology (furnace injection) based generating station under sub clause 25.2 of the draft CERC Regulations, 2020 (First Amendment).

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