BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO……

IN THE MATTER OF : Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of **Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW) for the period from 01.04.2024 to 31.03.2029**.

INDEX

Sl. No.	Description	Page No.
1	Petition for Approval of Tariff of Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW) for the period from 01.04.2024 to 31.03.2029	1-11
2	Affidavit	12-13
3	Appendix-I Tariff Forms	14-76
4	Appendix-IA Supplementary Tariff Forms	77-100
5	Annexure-R1	101-102
6	Annexure-R2	103-104
7	Annexure-R3	105-120
8	Annexure-R4	121-124
9	Annexure-R5	125-125
10	Annexure-R6	126-126
11	Annexure-R7	127-128
12	Annexure-R8	129-134
13	Annexure-R9	135-160
14	Annexure-R10	161-164
15	Annexure-R11	165-186
16	Annexure-R12	187-192
17	Annexure-R13	193-193

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO……

IN THE MATTER OF : Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of **Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW) for the period from 01.04.2024 to 31.03.2029**.

AND
IN THE MATTER OF Approval of Supplementary Tariff for Emission Control System (ECS), De-NoX (CM) for the period from 01.04.2024 to 31.03.2029.

AND
IN THE MATTER OF

Petitioner: : NTPC Ltd.
NTPC Bhawan
Core-7, Scope Complex
7, Institutional Area, Lodhi Road
New Delhi-110 003.

Respondents

1. Uttar Pradesh Power Corp. Ltd. (UPPCL)
Shakti Bhawan
14, Ashok Marg,
Lucknow – 226 001.

2. Rajasthan Urja Vika Nigam Limited (RUVNL)
(on behalf of DISCOMs of Rajasthan),
Vidyut Bhawan, Janpath,
Jaipur 302 005.

3. Tata Power Delhi Distribution Ltd.
Grid Substation, Hudson Road
Kingsway Camp
Delhi-110009.

4. BSES Rajdhani Power Ltd.,
2nd floor, B-Block
BSES Bhawan, Nehru Place
New Delhi-110019.

5 BSES Yamuna Power Ltd.,
Shakti Kiran Building
Karkardooma
Delhi-110092

6 Haryana Power Purchase Centre (HPPC)
Shakti Bhawan, Sector – VI,
Panchkula
Haryana – 134 109

7 Punjab State Power Corporation Ltd. (PSPCL)
The Mall
Patiala – 147 001

8 Himachal Pradesh State Electricity Board Ltd. (HPSEB)
Kumar Housing Complex Building-II
Vidyut Bhawan
Shimla – 171 004

9 Power Development Department (J&K)
Govt. of J&K, Secretariat
Srinagar

10 Electricity Department (Chandigarh)
Union Territory of Chandigarh
Addl. Office Building
Sector-9 D, Chandigarh

11 Uttarakhand Power Corporation Ltd. (UPCL)
Urja Bhawan, Kanwali Road
Dehradun – 248 001
Uttarakhand.

The Petitioner humbly states that:

1) The Petitioner herein NTPC Ltd. (hereinafter referred to as '**Petitioner**' or **'NTPC')**, is a company incorporated under provisions of the Company Act, 1956 and a Government Company as defined under Section 2(45) of the Companies Act, 2013. Further, NTPC is a 'Generating Company' as defined under Section 2(28) of the Electricity Act, 2003.

2) In terms of Section 79(1)(a) of Electricity Act, 2003, the Hon'ble Commission has been vested with the functions to regulate the tariff of NTPC Ltd.

Generating Company owned and controlled by the Central Government. The regulation of the tariff of NTPC is as provided under Section 79(1)(a) read with Section 61, 62 and 64 of the Electricity Act, 2003 and the Regulations notified by the Hon'ble Commission in exercise of powers under Section 178 read with Section 61 of the Electricity Act, 2003.

3) The Petitioner is having power stations/ projects at different regions and places in the country. **Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW)** (hereinafter referred to as Unchahar St-III) is one such station located in the State of Uttar Pradesh. The power generated from Unchahar St-III is being supplied to the respondents herein above.

4) The Hon'ble Commission has notified the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2024 (hereinafter 'Tariff Regulations 2024') which came into force from 01.04.2024, specifying the terms & conditions and methodology of tariff determination for the period 01.04.2024 to 31.03.2029.

5) Regulation 9(2) of Tariff Regulations 2024 provides as follows:

"(2) In case of an existing generating station or unit thereof, or transmission system or element thereof, the application shall be made by the generating company or the transmission licensee, as the case may be, by 30.11.2024 , based on admitted capital cost including additional capital expenditure already admitted and incurred up to 31.3.2024 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2024-29 along with the true up petition for the period 2019-24 in accordance with the CERC (Terms and Conditions of Tariff) Regulations, 2019."

In terms of above, the Petitioner is filing the present petition for determination of tariff for Unchahar St-III for the period from 01.04.2024 to 31.03.2029 as per the Tariff Regulations 2024.

6) The tariff of the Unchahar St-III for the tariff period 1.4.2019 to 31.3.2024 was determined by the Hon'ble Commission vide its order dated 07.10.2022 in Petition No.427/GT/2020 in accordance with the CERC (Terms & Conditions o

Tariff) Regulations 2019. The petitioner vide affidavit dated 21.11.2024 had filed a separate true up petition for the period 01.04.2019 to 31.03.2024 for revision of tariff in line with the applicable provisions of Tariff Regulations 2019.

7) It is submitted that Hon'ble Commission vide order dated 07.10.2022 in Petition no 427/GT/2020 has allowed a capital cost of Rs 88,680.96 Lakh as on 31.03.2024 based on the admitted projected capital expenditure for the 2019-24 period. However, the actual closing capital cost as on 31.03.2024 has been worked out in the foresaid true-up petition as Rs. 89,388.73 Lakh based on the actual expenditure after truing up exercise for the period 2019-24. Accordingly, the Petitioner has adjusted an amount of Rs. 707.77 Lakh from the admitted capital cost as on 31.03.2024 and accordingly the opening capital cost as on 01.04.2024 has been considered as Rs. 89,388.73 Lakh in the instant petition. The Hon'ble Commission may be pleased to accordingly adopt this adjustment in the admitted capital cost as on 31.3.2024 and determine the tariff in the present petition for the period 2024-29.

8) The capital cost claimed in the instant petition is based on the opening capital cost as on 01.04.2024 considered as above and projected estimated capital expenditures claimed for the period 2024-29 under Regulation 19 and Regulation 24, 25 and 26 of the Tariff Regulations, 2024.

9) The Petitioner further respectfully submits that as per Regulation 36(1)(6) of the Tariff Regulations 2024, the water charges, security expenses, ash transportation expenses and capital spares consumed for thermal generating stations are to be allowed separately. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2023-24 have been furnished below. In accordance with provision of the Regulations, the petitioner shall be furnishing the details of actual for the relevant year at the time of truing up and the same shall be subject to retrospective adjustment.

Description	**Remarks**
Type of Plant	Coal based station
Type of cooling water system	Closed Cycle

Rate of Water charges	Water Charges: Rs 12.48 (Rs/1000 Cubic Feet) Royalty: Rs 6 Lakh/Cusec Per Year
Total Water Charges	Rs. 67.47 lacs

10) Similarly, the Petitioner is claiming the security & ash transportation expenses based on the estimated expenses for the period 2024-29, the same shall be subject to retrospective adjustment based on actuals at the time of truing up. In respect of capital spares consumption, it is submitted that the same shall be claimed at the time of true-up in terms of the proviso to the Regulation 36(1)(6) based on actual consumption of spares during the period 2024-29.

11) However, it is submitted that the expenditure towards the ash transportation charges is recurring in nature and the Petitioner has been incurring ash transportation expenditure in its stations in the current tariff period also. In case the same is permitted to be recovered after the issuance of the tariff order for the period 2024-29, there will be additional liability on the beneficiary on account of the interest payment for the period till the time the tariff petitions for the period 2024-29 is decided. To avoid the interest payment liability of the beneficiaries, it is prayed that the petitioner may be allowed to recover/ pass on the ash transportation charges on a monthly basis subject to true-up at the end of the 2024-29 period.

12) The petitioner humbly submits that petition no. 227/MP/2024 has been filed by the petitioner concerning Ash **Utilization** Expenditure for its stations which is under active consideration of this Hon'ble Commission and the outcome of the said petition will be applicable to the instant petition also.

13) It is submitted that the tariff has been worked out in the present petition on the basis of norms specified in the Tariff Regulations 2024. However, it is submitted that the petitioner is in the process of installing the Emission Control Systems (ECS), Flue Gas Desulphurization (FGD) for controlling SOX emission in compliance of the Revised Emission Standards as notified by MOEF&CC vide notification dated 07.12.2015 as amended. Completion of these schemes in compliance of revised emission norms will affect the Station APC, Heat Rate

O&M expenses, water charges etc. In addition, the availability of the unit/ station would be also affected due to shutdown of the units for installation of ECS. The petitioner would be filing the details of the same in a separate petition in terms of the Regulation 29 of CERC (Terms& Conditions of Tariff) Regulations 2024.

14) Further, it is submitted that the petitioner has already installed Emission Control (ECS) System, Combustion Modification for controlling Nox emissions and the tariff for the same has been claimed as a separate stream under regulation under regulation 29 of Central Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2024. The tariff forms for the ECS (DeNox) System are attached as **Appendix-IA**.

15) The petitioner has accordingly calculated the tariff for 2024-29 period based on the above and the same is enclosed as **Appendix-I** to this petition.

16) The Petitioner humbly submits that the pay/wage revision for the employees of the Petitioner will be due wef 01.01.2027. Further, the wage/pay revision of CISF and Kendriya Vidyalaya employees will also be due for revision during the tariff period 2024-29. Regulation-36(1)(8) of CERC (Terms & Conditions of Tariff) Regulations-2024 provides as below:

"In the case of a generating company owned by the Central or State Government, the impact on account of implementation of wage or pay revision shall be allowed at the time of truing up of tariff."

In accordance with the above said regulation, the Petitioner shall approach the Hon'ble Commission for allowing the impact of Pay/wage revision of employees of the Petitioner i.e. NTPC Limited, CISF and Kendriya Vidyalaya (wherever applicable) as additional O&M at the time of truing-up of tariff for the control period 2024-29. Hon'ble Commission may be pleased to grant liberty to consider the impact of wage/pay revision as an additional impact on O&M from the date same is implemented and allow the same as additional O&M over and above the normative O&M.

17) It is submitted that in terms of Regulation 60 (5) of the Tariff Regulations 2024, the Petitioner is required to furnish details qua providing the details of Landed Price & Gross Calorific Value ("GCV") of coal in Form 15. It is further submitted that the Petitioner in terms of Regulation 40 of the Tariff Regulations 2019 was

required to furnish the details for Landed Price & GCV of coal also as per Form 15 of the Tariff Regulations, 2019.

18) However, in so far as the present Petition is concerned, the Petitioner has prepared & submitted the data of coal as per Form 15 of the Tariff Regulations, 2019. The same is because of the following reasons:-

(a) This Hon'ble Commission had notified the Tariff Regulations, 2019 on 07.03.2019 and the same was in effect till 31.03.2024.

(b) The Petitioner being a diligent utility has been seamlessly providing the said data of coal in terms of the prescribed format (i.e. Form 15 of Annexure-I (Part I)) of the Tariff Regulations, 2019 to this Hon'ble Commission for computation of Interest on Working Capital.

(c) Thereafter, this Hon'ble Commission on 15.03.2024 notified the Tariff Regulations, 2024, wherein the format of Form 15 was changed/ amended by this Hon'ble Commission and a new format was placed in the Tariff Regulations 2024 in the month of June'2024.

(d) By virtue of the said change, the Petitioner has been obligated to furnish the data of coal for its existing plants month wise for the preceding 12 months i.e. for FY 2023-24 for computation of Interest on Working Capital.

19) It is humbly submitted that by virtue of the Tariff Regulations, 2024, this Hon'ble Commission has added a new format/ revised the format of Form-15 which has not prescribed in the past Tariff Regulations i.e. of 2019. Hence, it is only now (in the Tariff Regulations 2024) that the Petitioner has been obligated to furnish the data of coal as per the new format of Form-15.

A True copy of the Form 15 of Tariff Regulations 2019 and Form 15 of Tariff Regulations 2024, is marked and annexed herewith as Annexure P/ [•]

20) It is respectfully submitted that since the format for Form 15 has been changed in Tariff Regulations, 2024 and was notified in the month of June'2024, the Petitioner could not have been aware about the said changes earlier, hence the Petitioner did not maintain the data required in new format of Form 15 of Tariff Regulations, 2024.

21) Therefore, this Hon'ble Commission may kindly exempt the Petitioner from furnishing the data of coal in terms of new format of Form 15 of the Tariff Regulations, 2024 & may be allowed to furnish the details of coal for FY 2023-24 in terms of the prescribed format of Form-15 of the Tariff Regulations, 2019.

22) In light of the above submissions, it may kindly be noted that no prejudice shall be caused to any party if the Petitioner is allowed for providing the details of Landed Price & GCV of coal to this Hon'ble Commission in terms of Form 15 of the Tariff Regulations, 2019 as the value of Landed Price & GCV of coal will remains unaffected.

23) It is submitted the Petitioner has served the copy of the Petition on to the Respondents mentioned herein above and has posted the Petition on the company website i.e. www.ntpc.co.in.

24) In accordance with the 'Conduct of Business Regulations 2023' of the Hon'ble Commission, the Petitioner shall, within 7 days after filing the tariff petition, publish a notice about such filing in at least two daily leading digital newspapers one in English language and another in any of the Indian languages, having wide circulation in each of the States and Union Territories where the beneficiaries are situated, as per Form 14 appended to these regulations. Subsequently, the Petitioner shall submit the proof of publications as soft copies of the publications under an affidavit through the e-filing portal of the Hon'ble Commission within one week from the date of publication. Further, the Petitioner shall also submit the detail of expenses incurred for publication of the notice alongwith the prayer for recovery of Publication Expenses as per Regulation-94 of CERC Tariff Regulations 2024.

25) It is submitted that the Petitioner has already paid the requisite filing fee vide **UTR No. 37c568eba62158b7b321** on 24.04.2024 for the year 2024-25 and the details of the same have been duly furnished to the Hon'ble Commission For the subsequent years, it shall be paid as per the provisions of the CERC (Payment of Fees) Regulations, 2012 as amended. Further Regulation 94 (1) of Tariff Regulations 2024 provides that the application fee and publication expenses may be allowed to be recovered directly from the beneficiaries at the discretion of the Hon'ble Commission. Accordingly, it is prayed that Hon'ble Commission may be pleased to allow recovery of filing fee and publication fee directly from the beneficiaries.

26) It is submitted that the petitioner is filing this tariff petition subject to the outcome of its various appeals/ petitions pending before different courts. Besides, the petitions filed by NTPC for determination of capital base as on 31.3.2019 through true-up exercise are pending before the Hon'ble Commission and would take some time. The Petitioner, therefore, reserves its right to amend the tariff petition as per the outcome in such appeals/ petitions, if required.

Prayers

In the light of the above submissions, the Petitioner, therefore, prays that the Hon'ble Commission may be pleased to:

i) Approve tariff of **Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW)** for the tariff period 01.04.2024 to 31.03.2029.

ii) Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries.

iii) Approve supplementary tariff for **Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW)** on installation of Emission Control System for controlling Nox emissions.

iv) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries on monthly basis, subject to true up.

v) Grant liberty to approach the Hon'ble Commission to allow for the recovery of pay/wage revision due in 2024-29 period as additional O&M over and above the normative O&M.

vi) Pass any other order as it may deem fit in the circumstances mentioned above.

Petitioner

Noida

____

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI

PETITION NO.....

IN THE MATTER OF : Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for determination of tariff of **Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW)** for the period from **01.04.2024 to 31.03.2029.**

AND
IN THE MATTER OF

Approval of Supplementary Tariff for Emission Control System (ECS), De-NoX (CM) for the period from 01.04.2024 to 31.03.2029.

AND
IN THE MATTER OF

Petitioner: :

NTPC Ltd.
NTPC Bhawan
Core-7, Scope Complex
7, Institutional Area, Lodhi Road
New Delhi-110 003

Respondents:

1. Uttar Pradesh Power Corp. Ltd. (UPPCL)
Shakti Bhawan
14, Ashok Marg
Lucknow – 226 001

And others

NOTARY YOGENDRA SINGH AREA NOIDA G.B. NAGAR REGN. NO. 5677/08 NOTARIAL NOTARIAL

AFFIDAVIT

I, Parimal Piyush, Son of Late Bharat Mishra, aged about 49 years, resident of IN1-2004, Inspire, Eldeco Aamantran, Sector-119, Noida (UP), do hereby solemnly affirm and state as follows:

NOTARY YOGENDRA SINGH AREA NOIDA G.B. NAGAR REGN. NO. 5677/08 GOVT. OF INDIA

परिमल पीयूष/PARIMAL PIYUSH
अपर महाप्रबन्धक (कानूनी)
Addl. General Manager (Commercial)
एन टी पी सी लिमिटेड/NTPC LIMITED
EOC, A-8A, Sector-24, Noida-201301 (U.P.)

Signature Not Verified
Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

1. That the deponent is the Additional General Manager (Commercial) of the Petitioner NTPC Ltd. and is well conversant with the facts and the circumstances of the case and therefore competent to swear this affidavit.

2. That the accompanying Petition under Section 62 and 79 (1) (a) of the Electricity Act, 2003, has been filed by my authorized representative under my instruction and the contents of the same are true and correct to the best of my knowledge and belief.

3. That the contents of Para No...**1**....to...**26**... as mentioned in the Petition are true and correct based on my personal knowledge, belief and records maintained in the office.

4. That the annexures annexed to the Petition are correct and true copies of the respective originals.

5. That the Deponent has not filed any other Petition or Appeal before any other forum or court of law with respect to the subject matter of the dispute.

परिमल पीयूष/PARIMAL PIYUSH
अपर महाप्रबन्धक (वाणिज्यिक)
Addl. General Manager (Commercial)
एन टी पी सी लिमिटेड/NTPC LIMITED
EOC, A-8A, Sector-24, Noida-201301 (U.P.)

(Deponent)

Verification:

Verified at Noida on this ..... day of November 2024, that the contents of my above noted affidavit are true and correct to my knowledge and no part of it is false and nothing material has been concealed therefrom.

(Deponent)

NOTARY YOGENDRA SINGH AREA NOIDA G.B. NAGAR REGN. NO. 5977/08 OF INDIA

परिमल पीयूष/PARIMAL PIYUSH
अपर महाप्रबन्धक (वाणिज्यिक)
Addl. General Manager (Commercial)
एन टी पी सी लिमिटेड/NTPC LIMITED
EOC, A-8A, Sector-24, Noida-201301 (U.P.)

ATTESTED
YOGENDRA SINGH
NOTARY NOIDA
G B NAGAR (U.P.) INDIA

25 NOV 2024

Signature Not Verified
Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

TARIFF FILING FORMS (THERMAL)

FOR DETERMINATION OF TARIFF

FOR

Feroze Gandhi Unchahar Thermal Power Station, Stage-III

(From 01.04.2024 to 31.03.2029)

PART-I

APPENDIX-I

Checklist of Main Tariff Forms and other information for tariff filing for Thermal Stations

Form No.	Title of Tariff Filing Forms (Thermal)	Tick
FORM- 1	Summary of Tariff	✓
FORM -1 (I)	Statement showing claimed capital cost	✓
FORM -1 (II)	Statement showing Return on Equity	✓
FORM-2	Plant Characteristics	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM-3A**	Statement showing O&M Expenses	✓
FORM- 4	Details of Foreign loans	**NA**
FORM- 4A	Details of Foreign Equity	**NA**
FORM-5	Abstract of Admitted Capital Cost for the existing Projects	**NA**
FORM- 6	Financial Package upto COD	**NA**
FORM- 7	Details of Project Specific Loans	**NA**
FORM- 8	Details of Allocation of corporate loans to various projects	✓
FORM-9A	Summary of Statement of Additional Capitalisation claimed during the period	✓
FORM-9##	Statement of Additional Capitalisation after COD	✓
FORM- 10	Financing of Additional Capitalisation	✓
FORM- 11	Calculation of Depreciation on original project cost	✓
FORM- 12	Statement of Depreciation	✓
FORM- 12A**	Statement of Depreciation of Assets Added after 20 Years	✓
FORM- 13	Calculation of Weighted Average Rate of Interest on Actual Loans	✓
FORM- 14	Draw Down Schedule for Calculation of IDC & Financing Charges	**NA**
FORM- 15	Details of Fuel for Computation of Energy Charges	✓
FORM- 15A**	Details of Seconday Fuel for Computation of Energy Charges	✓
FORM- 15B**	Computation of Energy Charges	✓
FORM- 16	Details of Limestone for Computation of Energy Charge Rate	**NA**
FORM-17***	Details of Capital Spares	***
FORM- 18***	Non-Tariff Income	***
FORM-19***	Details of Water Charges	***
FORM-20***	Details of Statutory Charges	***
		PART-I

List of Supporting Forms / documents for tariff filing for Thermal Stations

Form No.	Title of Tariff Filing Forms (Thermal)	Tick
FORM-A	Abstract of Capital Cost Estimates	**NA**
FORM-B	Break-up of Capital Cost for Coal/Lignite based projects	**NA**
FORM-C	Break-up of Capital Cost for Gas/Liquid fuel based Projects	**NA**
FORM-D	Break-up of Construction/Supply/Service packages	**NA**
FORM-E	Details of variables , parameters , optional package etc. for New Project	**NA**
FORM-F	Details of cost over run	**NA**
FORM-G	Details of time over run	**NA**
FORM –H	Statement of Additional Capitalisation during end of the useful life	**NA**
FORM –I***	Details of Assets De-capitalised during the period	***
FORM –J***	Reconciliation of Capitalisation claimed vis-à-vis books of accounts	***
FORM –K***	Statement showing details of items/assets/works claimed under Exclusions	***
FORM-L	Statement of Capital cost	✓
FORM-M	Statement of Capital Woks in Progress	✓
FORM-N	Calculation of Interest on Normative Loan	✓
FORM-O	Calculation of Interest on Working Capital	✓
FORM-P	Incidental Expenditure up to SCOD and up to Actual COD	**NA**
FORM-Q	Expenditure under different packages up to SCOD and up to Actual COD	**NA**
FORM-R	Actual cash expenditure	**NA**
FORM-S	Statement of Liability flow	***
FORM-T	Summary of issues involved in the petition	✓

**** Additional Forms**
Provided yearwise for the period 2024-29
***** Shall be provided at the time of true up**

List of supporting documents for tariff filing for Thermal Stations		
S. No.	**Information / Document**	**Tick**
1	Certificate of incorporation, Certificate for Commencement of Business, Memorandum of Association, & Articles of Association (For New Station setup by a company making tariff application for the first time to CERC)	NA
2	A. Station wise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures on COD of the Station for the new station & for the relevant years.	***
	B. Station wise and Corporate audited Balance Sheet and Profit & Loss Accounts with all the Schedules & annexures for the existing station for relevant years.	
3	Copies of relevant loan Agreements	NA
4	Copies of the approval of Competent Authority for the Capital Cost and Financial package.	NA
5	Copies of the Equity participation agreements and necessary approval for the foreign equity.	NA
6	Copies of the BPSA/PPA with the beneficiaries, if any	NA
7	Detailed note giving reasons of cost and time over run, if applicable.	NA
	List of supporting documents to be submitted:	
	a. Detailed Project Report	
	b. CPM Analysis	
	c. PERT Chart and Bar Chart	
	d. Justification for cost and time Overrun	
8	Generating Company shall submit copy of Cost Audit Report along with cost accounting records, cost details, statements, schedules etc. for the Generating Unit wise /stage wise/Station wise/ and subsequently consolidated at Company level as submitted to the Govt. of India for first two years i.e. 2019-20 and 2020-21 at the time of mid-term true-up in 2021-22 and for balance period of tariff period 2019-24 at the time of final true-up in 2024-25. In case of initial tariff filing the latest available Cost Audit Report should be furnished.	***
9	Any other relevant information, (Please specify)	NA
10	Reconciliation with Balance sheet of any actual additional capitalization and amongst stages of a generating station	***
11	BBMB is maintaining the records as per the relevant applicable Acts. Formats specified herein may not be suitable to the available information with BBMB. BBMB may modify the formats suitably as per available information to them for submission of required information for tariff purpose.	NA

***** Shall be provided at the time of true up**

Summary of Tariff

PART-I
FORM- 1

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
Place (Region/District/State):	**Northern Region/ Raebareli/ Uttar Pradesh**

Amount in Rs. Lakhs

S. No.	Particulars	Unit	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8	9
1.1	Depreciation	Rs Lakh	2,049.40	2,058.24	2,066.58	2,270.75	2,626.31	2,840.36
1.2	Interest on Loan	Rs Lakh	5.91	-	-	-	7.04	7.04
1.3	Return on Equity	Rs Lakh	5,036.15	5,036.70	5,040.22	5,102.81	5,253.79	5,405.78
1.4	Interest on Working Capital	Rs Lakh	1,331.13	2,574.81	2,593.58	2,619.79	2,650.22	2,681.62
1.5	O&M Expenses	Rs Lakh	16,989.94	10,527.37	10,905.97	11,358.76	11,840.41	12,351.18
1.6	Special Allowance (If applicable)	Rs Lakh	0.00	-	-	-	-	-
	Total	Rs Lakh	**25,412.53**	**20,197.12**	**20,606.35**	**21,352.10**	**22,377.76**	**23,285.99**
2.1	Landed Fuel Cost of coal as per FSA approved by beneficiaries	Rs/Ton	4,605.86	4734.09				
	(%) of Fuel Quantity	(%)	82.18	88.58				
2.2	Landed Fuel Cost of Imported Coal as per FSA approved by beneficiaries	Rs/Ton	NA					
	(%) of Fuel Quantity	(%)	NA					
2.3	Landed Fuel Cost of coal other than FSA	Rs/Ton	NA					
	(%) of Fuel Quantity	(%)	NA					
2.4	Landed Fuel Cost Imported Coal other than FSA.	Rs/Ton	19,299.69	14282.98				
	(%) of Fuel Quantity	(%)	17.82	11.42				
2.5	Secondary fuel oil cost	Rs/Unit	0.05	0.04	0.04	0.04	0.04	0.04
	Energy Charge Rate ex-bus 2A, 2B, 2C, 2D	Rs/Unit	5.14	4.36	4.36	4.36	4.36	4.36

(Petitioner)

PART-I
FORM- 1(I)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Amount in Rs. Lakhs

Statement showing claimed capital cost – (A+B)

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	89,388.73	89,388.73	89,513.73	91,997.58	95,939.08
2	Add: Addition during the year	-	125.00	2,483.85	3,941.50	2,599.15
3	Less: De-capitalisation during the year	-	-	-	-	-
4	Less: Reversal during the year	-	-	-	-	-
5	Add: Discharges during the year	-	-	-	-	-
6	Closing Capital Cost	89,388.73	89,513.73	91,997.58	95,939.08	98,538.23
7	**Average Capital Cost**	**89,388.73**	**89,451.23**	**90,755.65**	**93,968.33**	**97,238.65**

Statement showing claimed capital cost eligible for RoE at normal rate (A)

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	89,388.73	89,388.73	89,513.73	90,205.73	91,005.73
2	Add: Addition during the year	-	125.00	692.00	800.00	440.00
3	Less: De-capitalisation during the year	-	-	-	-	-
4	Less: Reversal during the year	-	-	-	-	-
5	Add: Discharges during the year	-	-	-	-	-
6	Closing Capital Cost	89,388.73	89,513.73	90,205.73	91,005.73	91,445.73
7	**Average Capital Cost**	**89,388.73**	**89,451.23**	**89,859.73**	**90,605.73**	**91,225.73**

PART-I
FORM- 1(I)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Statement showing claimed capital cost eligible for RoE@SBI MCLR +350 bp

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	-	-	-	1,791.85	4,933.35
2	Add: Addition during the year	-	-	1,791.85	3,141.50	2,159.15
3	Less: De-capitalisation during the year	-	-	-	-	-
4	Less: Reversal during the year	-	-	-	-	-
5	Add: Discharges during the year	-	-	-	-	-
6	Closing Capital Cost	-	-	1,791.85	4,933.35	7,092.50
7	**Average Capital Cost**	**-**	**-**	**895.93**	**3,362.60**	**6,012.93**

(Petitioner)

Signature Not Verified
Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

Statement showing Return on Equity at Normal Rate

Part-I
Form-1(IIA)

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Amount in Rs. Lakhs

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	8
	Return on Equity eligible for RoE @ Normal Rate					
1	Gross Opening Equity (Normal)	26,816.62	26,816.62	26,854.12	27,061.72	27,301.72
2	Less: Adjustment in Opening Equity	-	-	-	-	-
3	Adjustment during the year	-				
4	Net Opening Equity (Normal)	26,816.62	26,816.62	26,854.12	27,061.72	27,301.72
5	Add: Increase in equity due to addition during the year	0.00	37.50	207.60	240.00	132.00
7	Less: Decrease due to De-capitalisation during the year	0.00	0.00	0.00	0.00	0.00
8	Less: Decrease due to reversal during the year	0.00	0.00	0.00	0.00	0.00
9	Add: Increase due to discharges during the year	0.00	0.00	0.00	0.00	0.00
10	Net closing Equity (Normal)	26,816.62	26,854.12	27,061.72	27,301.72	27,433.72
11	Average Equity (Normal)	26,816.62	26,835.37	26,957.92	27,181.72	27,367.72
	Rate of ROE (%)-Pre Tax	15.50%	15.50%	15.50%	15.50%	15.50%
12	Rate of ROE (%)-Post Tax	18.782%	18.782%	18.782%	18.782%	18.782%
13	**Total ROE**	**5,036.70**	**5,040.22**	**5,063.24**	**5,105.27**	**5,140.21**

(Petitioner)

Statement showing Return on Equity linked to SBI MCLR:

Part-I
Form-1(IIB)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Amount in Rs. Lakhs

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	8
Statement showing Return on Equity Eligible@SBI MCLR + 350 basis points						
1	Gross Opening Equity (Normal)	0.00	0.00	0.00	537.56	1480.01
2	Less: Adjustment in Opening Equity	0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year	0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)	0.00	0.00	0.00	537.56	1480.01
5	Add: Increase in equity due to addition during the year	0.00	0.00	537.56	942.45	647.75
7	Less: Decrease due to De-capitalisation during the year	0.00	0.00	0.00	0.00	0.00
8	Less: Decrease due to reversal during the year	0.00	0.00	0.00	0.00	0.00
9	Add: Increase due to discharges during the year	0.00	0.00	0.00	0.00	0.00
10	Net closing Equity (Normal)	0.00	0.00	537.56	1480.01	2127.75
11	Average Equity (Normal)	0.00	0.00	268.78	1008.78	1803.88
12	Rate of ROE (%)-Pre Tax	12.15%	12.15%	12.15%	12.15%	12.15%
12A	Rate of ROE (%)-Post Tax	14.72%	14.72%	14.72%	14.72%	14.72%
13	**Total ROE**	**0.00**	**0.00**	**39.57**	**148.52**	**265.57**

(Petitioner)

PART-I
FORM-2

Plant Characteristics

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station Stage-III**
Unit(s)/Block(s)/Parameters	**Unit-I**
Installed Capacity (MW)	210
Schedule COD as per Investment Approval	NA
Actual COD	01.01.2007
Pit Head or Non Pit Head or Integrated Mine	Non Pit Head
Name of the Boiler Manufacture	
Name of Turbine Generator Manufacture	
Main Steams Pressure at Turbine inlet (kg/Cm^2) abs	
Main Steam Temperature at Turbine inlet (^oC)	
Reheat Steam Pressure at Turbine inlet ($kg/Cm^{2)}$	
Reheat Steam Temperature at Turbine inlet (^oC)	
Main Steam flow at Turbine inlet under MCR condition (tons /hr)	
Main Steam flow at Turbine inlet under VWO condition (tons /hr)	
Unit Gross electrical output under MCR /Rated condition (MW)	
Unit Gross electrical output under VWO condition (MW)	
Guaranteed Design Gross Turbine Cycle Heat Rate (kCal/kWh)	
Conditions on which design turbine cycle heat rate guaranteed (kcal/kwhr)	
% MCR	N/A
% Makeup Water Consumption	
Design Capacity of Make up Water System(% of throttle steam flow)	
Design Capacity of Inlet Cooling System	
Design Cooling Water Temperature (^0C)	
Back Pressure(Average condenser pressure in mmHg(A))	
Steam flow at super heater outlet under BMCR condition (tons/hr)	
Steam Pressure at super heater outlet under BMCR condition) **(kg/Cm^2)**	
Steam Temperature at super heater outlet under BMCR condition (**^0C**)	
Steam Temperature at Reheater outlet at BMCR condition (^0C)	
Design / Guaranteed Boiler Efficiency (%)	
Design Fuel with and without Blending of domestic/imported coal	
(GCV) Domestic Design coal	
Blended Coal (Domestic Design 70%+ Imported 30%)	
Type of Cooling Tower	Induced draught type Cooling tower
Type of cooling system	Closed Cycle
Type of Boiler Feed Pump	MDBFP
Type of Boiler Firing (Wall Fired/Tangential Fired)	Tangential Fired
Fuel Details	
-Primary Fuel	Coal
-Secondary Fuel	LDO
-Alternate Fuels	-
Special Features/Site Specific Features	
Special Technological Features	
Environmental Regulation related features	1.ESP is provided 2.FGD under implementation 3. Combustion Modification implemented
Any other special features	

(PETITIONER)

Normative parameters considered for tariff computations							Part-I Form-3
Name of the Petitioner:	**NTPC Limited**						
Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**						
							(Year Ending March)
Particulars	**Unit**	**Existing 2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**	**3**	**4**	**5**		**6**	**8**
Base Rate of Return on Equity at normal rate	%	15.50%	15.50%	15.50%	15.50%	15.50%	15.50%
Rate of Return on Add - cap beyond the original scope of work including additional capitalization due to Change in Law, Force Majeure	%	10.61%	12.15%	12.15%	12.15%	12.15%	12.15%
Effective Tax Rate	%	17.47%	17.47%	17.47%	17.47%	17.47%	17.47%
Target Availability	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Peak Hours	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Off-Peak Hours	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
ß- Average Monthly Frequency Response Performance ##	0-1	To be provided at the time of truing up					
Auxiliary Energy Consumption	%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
Gross Station Heat Rate	kCal/kWh	2430.00	2415.00	2415.00	2415.00	2415.00	2415.00
Specific Fuel Oil Consumption	ml/kWh	0.50	0.50	0.50	0.50	0.50	0.50
Cost of Coal/Lignite for WC	in Days	50	50	50	50	50	50
Cost of Main Secondary Fuel Oil for WC	in Months	2	2	2	2	2	2
Fuel Cost for WC	in Months						
Liquid Fuel Stock for WC	in Months						
O&M Expenses	Rs lakh/MW	37.84	40.92	43.07	45.33	47.71	50.21
Maintenance Spares for WC	% of O&M	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
Receivables for WC	in Days	45.00	45.00	45.00	45.00	45.00	45.00
Storage capacity of Primary fuel*	MT	6.5 Lakh MT					
SBI 1 Year MCLR plus 350 basis point	%	12.00%	11.90%	11.90%	11.90%	11.90%	11.90%
Blending ratio of domestic coal	%	88.58					
Blending ratio of domestic imported coal	%	11.42					
Norms for consumption of reagent**	To Be Provided at the time of ODe of ECS						
Specific Limestone consumption for Wet Limestone FGD							
Specific Limestone consumption for Lime Spray Dryer or Semi-dry FGD							
Specific consumption of sodium bicarbonate							
Specific Limestone consumption for CFBC based generating station							
specific urea consumption of the SNCR							
Specific ammonia consumption of the SCR							
Transit and Handling Losses of coal or lignite, as applicable							

***Combined storage capacity of Unchahar Station**

##ß- Average Monthly Frequency Response Performance will be provided at the time of truing up

**FGD is yet to be Commissioned.

Petitioner

Part-I
FORM-3A
ADDITIONAL FORM

Calculation of O&M Expenses

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Amount in Rs. Lakhs

S.No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	8
1	**O&M expenses under Reg.35(1)**					
1a	Normative	8,593.20	9,044.70	9,519.30	10,019.10	10,544.10
2	**O&M expenses under Reg.35(6)**					
2a	Water Charges	67.47	67.47	67.47	67.47	67.47
2b	Security expenses	531.91	574.45	620.38	669.97	723.48
2c	Capital Spares*	To be provided at the time of Truing up				
3	O&M expenses-Ash Transportation	1334.79	1219.35	1151.61	1083.87	1016.13
	Total O&M Expenses	**10527.37**	**10905.97**	**11358.76**	**11840.41**	**12351.18**

* Shall be provided at the time of true-up.

Petitioner

PART-I
FORM- 9A
ADDITIONAL FORM

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station, Stage-III
COD	01-01-2007
For Financial Year	2024-29 (Summary)

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)					Justification	Admitted Cost by the Commission, if any
		2024-25	2025-26	2026-27	2027-28	2028-29		
1	2	3	4	5	6	7	8	9
A.	**Works eligble for RoE at Normal Rate**							
1	Upgradation of IGV & BP Actuators of Draft System	-	-	130.00	100.00	-	**Pl. refer Form-9 of respective FYs.**	
2	Upgradation of BHEL Safe flame Scanner-I&II with BN-10	-	-	137.00	100.00	-		
3	Upgradation of Schneider make PLC systems for Raw water P/H, Water treatment plant & CMB plant	-	45.00	45.00	-	-		
4	Upgradation of GE Fanuc make PLC System in Balance Of Plant Areas	-	80.00	200.00	300.00	100.00		
5	Main Turbine Controller Upgradation	-	-	60.00	100.00	100.00		
6	LPBP Controller Upgradation	-	-	60.00	100.00	100.00		
7	Upgradation of field instruments & oil supply units of HP Bypass system	-	-	60.00	100.00	140.00		
Total additional capitalization claimed with RoE at Normal Rate (A)		**-**	**125.00**	**692.00**	**800.00**	**440.00**		

PART-I
FORM- 9A
ADDITIONAL FORM

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2024-29 (Summary)**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)					Justification	Admitted Cost by the Commission, if any
		2024-25	2025-26	2026-27	2027-28	2028-29		
B.	**Works eligble for Return on Equity linked to SBI MCLR:**							
1	Dust Suppression System at Arkha Ash Dyke	-	-	151.50	140.00	-	**Pl. refer Form-9 of respective FYs.**	
2	Dust Suppression System at Umran Ash Dyke	-	-	-	151.50	140.00		
4	Foot Over Bridge over Rail Line at Wagon Tippler	-	-	795.50	200.00	-		
5	Locoshed for Bio Mass Handling	-	-	-	167.50	200.00		
6	Installation of VFDs for CEPs for Flexible Operation	-	-	500.00	1,250.00	250.00		
7	AVR upgradation	-	-	50.00	50.00	-		
8	Retrofitting of HT Switchgear	-	-	50.00	50.00	-		
9	Installation of Ash Brick making machine in Ash Brick Plant at NTPC Unchahar	-	-	190.35	810.00	903.15		
10	Replacement of NMEJ to MEJ in Boiler Duct	-	-	-	100.00	100.00		
11	Upgradation of HPCV servomotors	-	-	-	-	271.00		
12	Installation of CCTV cameras at Main Plant and offsite	-	-	54.50	75.00	-		
13	Facilitiy of Rail loading of Fly Ash	-	-	-	147.50	295.00		
Total additional capitalization claimed with RoE at Wtd. Average Rate of Interest (B)		**-**	**-**	**1,791.850**	**3,141.500**	**2,159.150**		
Total Add. Cap. Claimed (A+B)		**-**	**125.000**	**2,483.850**	**3,941.500**	**2,599.150**		

(Petitioner)

Signature Not Verified

Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station, Stage-III
COD	01-01-2007
For Financial Year	2024-25

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
A.	Works eligble for RoE at Normal Rate									
1	NA	-	-	-	-	-	-	NA	NA	NA
Sub Total-A		-	-	-	-	-	-			
B.	Works eligble for Return on Equity linked to SBI MCLR:									
1	NA	-		-		-		NA	NA	NA
Sub Total-B						-				
Total Add. Cap. Claimed (A+B)						-				

(Petitioner)

Signature Not Verified

Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2025-26**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
A.	**Works eligble for RoE at Normal Rate**									
1	Upgradation of Schneider make PLC systems for Raw water P/H, Water treatment plant & CMB plant	45.00		45.00		45.00		25 (2) (c) & 26 (1) (b)	The existing Schneider make PLC systems were installed for monitoring, control & operation of Raw water system, Water Treatment Plant & CMB plant at the instant station. These Schneider make PLC systems were based on Schneider make Modicon PLC Controller and Windowx-XP based operating Syatem HMI. They were in sevice since unit commissioning and completed more than 18 years of service. OEM M/s Schneider has declared them obsolete and discontinued there support. The obsolescnce letter fromOEM, M/s Schneider is attached as **Annexure-R/1.** Also for operating system, Windows XP for HMI, **t**here is no support available from M/s Microsoft due to declaration of obsolescence and End of Life (EOL) of Windows XP (EOL April 2014) (**Attached as Annexure-R/2 Colly.).** Due to this, it is very difficult to mainatain the control system healthy for ensuring safe and relaible operation of the above mentioned Plants at the instant station. Further, CEA issued CEA (Cyber Security in Power Sector) Guidelines, 2021 (**Attached as Annexure-R/3**) in compliance of Govt of India policy for cyber security under Indian Computer Emergency Response Team (CERT_In). These guidelines require mandatory Compliance by all Responsible Entities. The scope under "Control Systems for System Operation and Operation Management" inter alia covers " Power Plant Control Systems". The CEA Guidelines (2021) for Cyber Security in the Power Sector mandates (i) Phasing out legacy systems, (ii) Hardening existing systems with additional security controls in consultation with the OEM, and (iii) Maintaining system logs for a minimum of six months. Therefore, the upgradadtion of existing PLC systems for Raw water P/H, Water treatment plant & CMB plant at the instant station is required due to its obsolescence and in compliance of CEA (Cyber Security in Power Sector) Guidelines, 2021 for ensuring safe and reliable operation of the Station. In view of the above, it is humbly submitted that Hon'ble Commission may be pleased to allow the said work under Regulations 25 (2) (c) read with Regulation 26 (1) (b).	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2025-26**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
2	Upgradation of GE Fanuc make PLC System in Balance Of Plant Areas	80.00		80.00		80.00		25 (2) (c) & 26 (1) (b)	The existing GE Fanuc Make PLC system, having S 90-30 Control Module with Genius Bus Controller and Window-XP based OWS/EWS machines are installed at various location of the balance of plants areas such as CHP, AHP, DM Plant, CW Treatment Plant, FWPH, AC plant , and H2 Plant at instant station. These were in service since unit commissioning and completed more than 18 years of service. M/s GE Fanuc Systems Private Limited has been incorpoarted as M/s Emerson Automation Solutions Intelligent Platforms Pvt. Ltd on 15.04.2019. M/s Emerson has declared Genius Bus Controllers obsolete and no more support is available for this. The obsolescnce letter from OEM, M/s Emerson is attached as **Annexure-R/4**. Also, for operating system, Windows XP , M/s Microsoft has discontinued its support due to declaration of obsolescence and End of Life (EOL) of Windows XP (EOL April 2014) **(Attached as Annexure-R/2 Colly.)**. Due to this, it is very difficult to mainatain the control system healthy for ensuring safe and relaible operation of the above mentioned Plants at the instant station. Further, CEA issued CEA (Cyber Security in Power Sector) Guidelines, 2021 (Attached as Annexure-R/19) in compliance of Govt of India policy for cyber security under Indian Computer Emergency Response Team (CERT_In). These guidelines require mandatory Compliance by all Responsible Entities. The scope under "Control Systems for System Operation and Operation Management" inter alia covers " Power Plant Control Systems". Therefore, the upgradadtion of existing PLC systems for CHP, AHP, DM Plant, CW Treatment Plant, FWPH, AC plant , and H2 Plant at the instant station is required due to its obsolescence and in compliance of CEA (Cyber Security in Power Sector) Guidelines, 2021 for ensuring safe and reliable operation of the Station. In view of the above, it is humbly submitted that Hon'ble Commission may be pleased to allow the said work under Regulations 25 (2) (c) read with Regulation 26 (1) (b).	NA
Sub Total-A		**125.00**	**0.00**	**125.00**	**0.00**	**125.00**	**0.00**			
B.	**Works eligble for Return on Equity linked to SBI MCLR:**									
1	NA	-		-		-		NA	NA	NA
Sub Total-B		**-**		**-**		**-**				
Total Add. Cap.						**125.00**				

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station, Stage-III
COD	01-01-2007
For Financial Year	2026-27

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
A.	Works eligble for RoE at Normal Rate									
1	Upgradation of IGV & BP Actuators of Draft System	130.00		130.00		130.00		25 (2) (c)	The resolution/ precision in the existing actuator is +/- 2.5%, so fine control of PA header & furnace pressure control loop is difficult and sometimes these control loops get disturbed especially during frequent Ramp up & Ramp Down of unit load to meet the generation schedule provided from grid controller. Due to this fine operation of blade pitch & IGV actuator for controlling furnace draft inluding PA header pressure. The existing IGV & Blade pictc actuators for controlling the furnace draft and PA header pressure were installed at the time of commissioning of the Unit. They have become obsolete as OEM Auma has discontinued support for them. The list of actuators for whose M/s Auma has discontinued the support is attached as **Annexure-R/5.** The role of these actuaors are very critical for maintaining requisite air flow in proportionate with fuel input into the boiler for ensuring complete combustion and avoid any residual unburnt fuel inside furnace which may cause unsafe operation of boiler.In view of criticalllity of role of these actuators and the fact that OEM has disconitnued their support for them, they need to be upgraded to ensure efficient & reliable operation of the Plant. In view of the above, it is humbly submitted that Hon'ble Commission may be pleased to allow the said work under Regulations 25 (2) (c).	NA
2	Upgradation of BHEL Safe flame Scanner-I&II with BN-10	137.00		137.00		137.00		25 (2) (c)	At the instant station, BHEL make safe flame I & II are installed at different elevations of Boiler for measurement and detection of flame intensity and frequency of Flame Inside the Furnace. Flame scanners play a very critical role for safe operation of boiler by ensuring that requisite flame is available for burning the coal at different load and fuel conditions in other words if they detect that flame condition is not edequate inside the boiler they start immediate trip the boiler for the safety. The Electronic cards of Flame scanner panel at NTPC Unchahar are declared obsolete by BHEL. The intimation from M/s BHEL for obsilescence of existing flame scanners cards is attched as **Annexure-R/6.** Considering the importance of flame scanners for safe and reliable operation of the station, their upgradation is necessitated. In view of the above, it is humbly submitted that Hon'ble Commission may be pleased to allow the said work under Regulations 25 (2) (c).	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station, Stage-III
COD	01-01-2007
For Financial Year	2026-27

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
3	Upgradation of Schneider make PLC systems for Raw water P/H, Water treatment plant & CMB plant	45.00		45.00		45.00		25 (2) (c) & 26 (1) (b)	Deatailed justiifcation provided at Sl No-A1 of Form-9 25-26	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2026-27**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
4	Upgradation of GE Fanuc make PLC System in Balance Of Plant Areas	200.00		200.00		200.00		25 (2) (c) & 26 (1) (b)	Deatailed justiifcation provided at Sl No-A2 of Form-9 25-26	NA
5	Main Turbine Controller Upgradation	60.00		60.00		60.00		25 (2) (c) & 26 (1) (b)	The existing Turbine Controller were installed at the time of Unit comissioning by M/s BHEL. The EHC controller consists of electronic control panels and field elctrohaydaulic instruments which together work in tandem to achieve required turbine control and protection. Turbine control system requires to be more accurate, rugged and reliable to meet the requirement of regular load regulation as per geneartion schedule. M/s BHEL has withdrawn support for the existing Turbine and LPBP EHC controllers due to obsolescence. The intimation from M/s BHEL for obsolescence of existing EHC controllers is attched as **Annexure-R/7 Colly.** Further, the existing turbine control Operating work stations (OWS) are not consistent with latest cyber security suite as required by CEA (Cyber Security in Power Sector) Guidelines, 2021. As per CEA guideline Power Plant Control Systems must comply requirement of Indian Computer Emergency Response Team (CERT_In). Considering the obsolescence of existing EHC controllers, and in compliance of CEA (Cyber Security in Power Sector) Guidelines, 2021 their upgradation is necessitated to ensure safe, and reliable operation of the Station. In view of the above, it is humbly submitted that Hon'ble Commission may be pleased to allow the said work under Regulations 25 (2) (c).	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2026-27**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
6	LPBP Controller Upgradation	60.00		60.00		60.00		25 (2) (c) & 26 (1) (b)	LP-HP bypass operation is required for starting the turbine start up and below techinical minimum load conditions. The existing LP bypass controller were installed at the time of Unit comissioning by M/s BHEL. M/s BHEL has withdrawn support for the existing Turbine and LPBP EHC controllers due to obsolescence. The intimation from M/s BHEL for obsolescence of existing EHC controllers is attched as **Annexure-R/7 Colly**. Further, the existing LP bypass Operating Work Stations (OWS) are not consistent with latest cyber security suite as required by CEA (Cyber Security in Power Sector) Guidelines, 2021. As per CEA guideline Power Plant Control Systems must comply requirement of Indian Computer Emergency Response Team (CERT_In). Considering the obsolescence of existing LP Bypass EHC controllers, and in compliance of CEA (Cyber Security in Power Sector) Guidelines, 2021 their upgradation is necessitated to ensure safe, and reliable operation of the Station. In view of the above, it is humbly submitted that Hon'ble Commission may be pleased to allow the said work under Regulations 25 (2) (c).	NA
7	Upgradation of field instruments & oil supply units of HP Bypass system	60.00		60.00		60.00		25 (2) (c) & 26 (1) (b)	LP-HP bypass operation is required for starting the turbine start up and below techinical minimum load conditions. The existing HP bypass system was installed at the time of Unit comissioning by M/s BHEL. The HP bypass control inter alia consists of its control panel, field electronic instruments, high pressure Oil Supply Unit etc. M/s BHEL has withdrawn support for the existing HP bypass controllers due to obsolescence. The new HP bypass controllers are required to be consistent with CEA (Cyber Security in Power Sector) Guidelines, 2021. As per CEA guideline Power Plant Control Systems must comply requirement of Indian Computer Emergency Response Team (CERT_In). The Field instruments are required to be compatible with latest DCS which is installed complying the cyber security suite. Due to this upgardation of BP bypass sytem is necessitated. In view of the above, it is humbly submitted that Hon'ble Commission may be pleased to allow the said work under Regulations 25 (2) (c).	NA
Sub Total-A		**692.00**		**692.00**		**692.00**				

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2026-27**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
				-		-				
1	Dust Suppression System at Arkha Ash Dyke	151.50		151.50		151.50		26 (1) (b)	It is submitted that to as per conditions stipulated in the Consent to Operate (CTO) for the instant station(attached as **Annexure-R/8**) , strict adherence to the Ministry of Environment, Forest, and Climate Change (MoEFCC) guidelines is required. The MoEFCC guidelines for the disposal and utilization of fly ash for land reclamation, issued in March 2019 (attached as **Annexure-R/9 Colly**), mandate the installation of a dust suppression system in the ash dyke area. In light of these requirements, the projected expenditure for the instant station has become necessary. In view of the above, it is respectfully submitted that the Hon'ble Commission may allow the proposed expenditure under Section 26(1)(b)	NA
2	Foot Over Bridge over Rail Line at Wagon Tippler Facilities	795.50		795.50		795.50		26 (1) (d) & 26 (1) (i)	It is submitted that the recent operationalization of the wagon tipplers at this station has created an urgent need for the installation of a foot overbridge. The lack of safe and adequate access to the Wagon Tippler Control and MGR Control room during rake unloading poses significant safety concerns as well as operational difficulty to timely and safely unload the wagons. Currently, both the inhaul and outhaul level crossings are obstructed by wagons during rake unloading, disrupting the movement of personnel and machinery across the tracks. In light of the above, the proposed expenditure has become necessary to ensure the safe and efficient movement of personnel and machinery throughout the unloading process. The implementation of the foot overbridge will facilitate the rapid unloading of wagons and improve the overall management of the fuel unloading system, thereby enhancing operational efficiency. In view of this, it is respectfully submitted that the Hon'ble Commission may approve the proposed expenditure under Sections 26(1)(d) and 26(1)(i).	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2026-27**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
3	Installation of VFDs for CEPs for Flexible Operation	500.00		500.00		500.00		26 (1)(g) & 26 (1)(b) read with 19(3)(g)	The increased penetration of renewable energy (RE) has introduced significant fluctuations in the net electricity demand from conventional coal-based generating stations throughout the day. As RE integration grows, coal-based power plants must operate at variable loads to manage RE intermittency, which is essential for grid stability. However, due to the limited number of gas-based power stations and the fact that Indian coal-based plants were originally designed for base-load operations, operating at variable loads poses safety and efficiency challenges. It is submitted that , the Central Electricity Authority's (CEA) Flexible Operation of Coal-Based Thermal Power Generating Units Regulations, 2023 (attached as A**nnexure-R/10 Colly**) mandates that coal-based thermal power generating units must be capable of flexible operation. The regulations further stipulate that these units should be designed or retrofitted, if necessary, to meet the flexibility requirements. In view of this, this expenditure is proposed for the installation of Variable Frequency Drive (VFD) system for CEP to enable flexible and efficient operations even at lower loads. It is submitted that the importance of VFD systems in supporting low-load operation has been acknowledged by the CEA in its report, Flexibilization of Coal-Fired Power Plants, released in February 2023. Further, it is submitted that Hon'ble commission acknowledges the inclusion of capital expenditure for enabling flexible operation in capital cost as per provision of regulation 19(3)(g). In light of the above, it is respectfully requested that the Hon'ble Commission kindly approve the proposed capitalization under Regulation 26 (1)(g) & 26 (1)(b) read with 19(3)(g).	NA
4	U-5 AVR upgradation	50.00		50.00		50.00		25 (2) (c) & 26 (1) (b)	The existing Automatic Voltage Regulator (AVR) system was commissioned at the time of Unit commissioning. The upgradation of existing AVR is required as per CEA Technical Standards for Construction of Electrical Plants Lines Regulations 2022 to meet the requirements as mentioned therein so as to cater the the stringent requirement of grid operation at varying operating condition of excitation requirement, meeting power system stabilisation requirement and required volatge regulation and operational redundancy. Current AVR is not having sufficient requisite technical capabilities to meet the stringent requirement as per CEA technical specifications. Therefore system has become techinacally obsolete. Hon'ble Commission may be pleased to allow the said work under Regulations 26 (1) (b).	NA

Signature Not Verified

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2026-27**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
5	Retrofitting of HT Switchgear	50.00		50.00		50.00		26 (1) (b) & 26 (1) (d)	The existing HT switchgear is of conventional open door type. Operation HT switchgear with open door type are accident prone. Further as per CEA Technical Standards for Construction of Electrical Plants Lines Regulations 2022, the high tension (HT) switchgear (11/6.6/3.3 kV) shall be of draw out type, re-strike free. It further requires that the protective relays shall be of numerical type with self monitoring, diagnostic features and communication facility. Accordingly they need to be replaced with latest HT type switchgear as per CEA Regulation, 2022 to ensure safe and reliable operation. Hon'ble Commission may be pleased to allow the said work under Regulations 26 (1) (b).	NA
6	Ash Utilization Infrastructure (Rail Ash Loading system, Ash brick machines etc.)	190.35		190.35		190.35		26-1(b), 19(2)(i)	In accordance with the Ministry of Environment, Forest and Climate Change (MOEF&CC) notification dated 31st December 2021(**Attached as annexure-R11**), all coal or lignite-based thermal power plants are responsible for ensuring 100% utilization of the ash generated by them in an eco-friendly manner. To comply with this mandate, various expenditures are proposed to be incurred in the instant station during tariff period 2024-29. These include the development of a Rail Ash Loading System to enhance ash utilization through the ash loading silos and transportation via the rail network and installation ash brick machine to enhance ash utilisation.Further, it is submitted that Hon'ble commission acknowledges the inclusion of capital expenditure on account of ash disposal and utilization in capital cost as per provision of regulation 19(2)(i). In view of this, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) and 19(2)(i)of Tariff Regulations 2024.	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2026-27**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
7	Installation of CCTV cameras at Main Plant and offsite	54.50		54.50		54.50		26 (1) (d)	It is submitted that a safety advisory mandating comprehensive monitoring of overhauling work and immediate action to address pulverized fuel leakage was issued by the Central Electricity Authority (CEA) on May 23, 2022 (**attached as Annexure-R/12**).To comply with these directives, comprehensive plant process monitoring at various locations within the facility has become essential. Further it is submitted that given the extensive nature of overhauling work and unpredictable occurrence of potential leakages, maintaining thorough physical surveillance is not feasible. Therefore, centralized round-the-clock CCTV monitoring of overhauling activities and critical vulnerable areas within the main plant and the Coal Handling Plant (CHP) area is proposed for implementation. In light of this, the Hon'ble Commission is respectfully requested to allow this under Regulation 26(1)(b) and 26(1)(d) of the Tariff Regulations 2024.	NA
Sub Total-B		**1,791.85**	**-**	**1,791.85**	**-**	**1,791.85**				
Total Add. Cap. Claimed		**2,483.85**	**-**	**2,483.85**	**-**	**2,483.85**				

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station, Stage-III
COD	01-01-2007
For Financial Year	2027-28

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
A.	**Works eligble for RoE at Normal Rate**									
1	Upgradation of IGV & BP Actuators of Draft System	100		100.00		100.00		25 (2) (c)	Detailed Justification provided at Sl No-A1 of Form-9 26-27	NA
2	Upgradation of BHEL Safe flame Scanner-I&II with BN-10	100		100.00		100.00		25 (2) (c)	Detailed Justification provided at Sl No-A2 of Form-9 26-27	NA
3	Upgradation of GE Fanuc make PLC System in Balance Of Plant Areas	300		300.00		300.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A4 of Form-9 26-27	NA
4	Main Turbine Controller Upgradation	100		100.00		100.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A5 of Form-9 26-27	NA
5	LPBP Controller Upgradation	100		100.00		100.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A6 of Form-9 26-27	NA
6	Upgradation of field instruments & oil supply units of HP Bypass system	100		100.00		100.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A7 of Form-9 26-27	NA
Sub Total-A		**800.00**		**800.00**		**800.00**				
B.	**Works eligble for Return on Equity linked to SBI MCLR:**									
1	Dust Suppression System at Arkha Ash Dyke	140.00		140.00		140.00		26 (1) (b)	Detailed Justification provided at Sl No-B1 of Form-9 26-27	NA
2	Dust Suppression System at Umran Ash Dyke	151.50		151.50		151.50		26 (1) (b)	Detailed Justification provided at Sl No-B1 of Form-9 26-27	NA
3	Foot Over Bridge over Rail Line at Wagon Tippler Facilities	200.00		200.00		200.00		26 (1) (d) & 26 (1) (i)	Detailed Justification provided at Sl No-B2 of Form-9 26-27	NA
4	Locoshed for Bio Mass Handling	167.50		167.50		167.50		26(1)(b)	It is submitted that,, following the recent communication from the railway authorities(**attached as annexure-R13),** the construction of a loco shed has become essential. This communication stipulates that the timely release of empty rakes on specific lines is contingent upon the completion of the loco shed infrastructure. Furthermore, it is submitted that the instant station being a non-pithead station, depends on Indian Railways for coal supply. Therefore, the necessary expenditure to establish the required facilities is essential to ensure uninterrupted coal supply and avoid potential disruptions due to non-compliance with the railway authorities' directives. In view of the above, it is humbly submitted that the Hon'ble Commission may be pleased to approve the proposed expenditure under Section 26(1)(b).	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2027-28**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
5	Installation of VFDs for CEPs for Flexible Operation	1250.00		1,250.00		1,250.00		26 (1)(g) & 26 (1)(b) read with 19(3)(g)	Detailed Justification provided at Sl No-B3 of Form-9 26-27	NA
6	U-5 AVR upgradation	50.00		50.00		50.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-B4 of Form-9 26-27	NA
7	Retrofitting of HT Switchgear	50.00		50.00		50.00		26 (1) (b) & 26 (1) (d)	Detailed Justification provided at Sl No-B5 of Form-9 26-27	NA
8	Ash Utilization Infrastructure (Rail Ash Loading system, Ash brick machines etc.)	957.50		957.50		957.50		26-1(b), 19(2)(i)	Detailed Justification provided at Sl No-B6 of Form-9 26-27	NA
9	Replacement of NMEJ to MEJ in Boiler Duct	100.00		100.00		100.00		26 (1) (g) read with 19 (3) (g)	Due to frequent loading & unloading of the Unit to meet the generation schedule, frequent leakages happens from ducts. The Non Metallic expansion joints are specifically prone to leakages, which need to be repalced with Metallic type expansion joints to ensure safe, reliable and flexible operation of the Station under varying load operating conditions. This will improve reliability of the duct system and decrease the hot gases and air ingress. Further, it is submitted that Hon'ble commission acknowledges the inclusion of capital expenditure for enabling flexible operation in capital cost as per provision of regulation 19(3)(g). In view of the above, it is humbly submitted that the Hon'ble Commission may be pleased to approve the proposed expenditure under Section 26(1)(g).	NA
10	Installation of CCTV cameras at Main Plant and offsite	75.00		75.00		75.00		26 (1) (d)	Detailed Justification provided at Sl No-B7 of Form-9 26-27	NA
Sub Total-B		**3,141.50**		**3,141.50**		**3,141.50**				
Total Add. Cap. Claimed (A+B)		**3,941.50**		**3,941.50**		**3,941.50**				

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2028-29**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
A.	**Works eligble for RoE at Normal Rate**									
1	Upgradation of GE Fanuc make PLC System in Balance Of Plant Areas	100.00		100.00		100.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A4 of Form-9 26-27	NA
2	Main Turbine Controller Upgradation	100.00		100.00		100.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A5 of Form-9 26-27	NA
3	LPBP Controller Upgradation	100.00		100.00		100.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A6 of Form-9 26-27	NA
4	Upgradation of field instruments & oil supply units of HP Bypass system	140.00		140.00		140.00		25 (2) (c) & 26 (1) (b)	Detailed Justification provided at Sl No-A7 of Form-9 26-27	NA
Sub Total-A		**440.00**		**440.00**		**440.00**				
B.	**Works eligble for Return on Equity linked to SBI MCLR:**									
1	Dust Suppression System at Umran Ash Dyke	140.00		140.00		140.00		26 (1) (b)	Detailed Justification provided at Sl No-B1 of Form-9 26-27	NA
2	Locoshed for Bio Mass Handling	200.00		200.00		200.00		26 (1) (b)	Detailed Justification provided at Sl No-B4 of Form-9 27-28	NA
3	Installation of VFDs for CEPs for Flexible Operation	250.00		250.00		250.00		26 (1)(g) & 26 (1)(b) read with 19(3)(g)	Detailed Justification provided at Sl No-B3 of Form-9 26-27	NA
4	Ash Utilization Infrastructure (Rail Ash Loading system, Ash brick machines etc.)	1198.15		1,198.15		1,198.15		26-1(b), 19(2)(i)	Detailed Justification provided at Sl No-B6 of Form-9 26-27	NA

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2028-29**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Ind AS	Ind AS Adjustment	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
5	Replacement of NMEJ to MEJ in Boiler Duct	100.00		100.00		100.00		26 (1) (g) read with 19 (3) (g)	Detailed Justification provided at Sl No-B9 of Form-9 27-28	NA
6	Upgradation of HPCV servomotors	271.00		271.00		271.00		26 (1) (g) read with 19 (3) (g)	Central Electricity Authority (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023 mandates all thermal power plants to be capable of providing the flexible operation. It further mandates for minimum Ramp rates capabilities of coal based thermal power generating units for flexible operation which as per these regulations. The excerpts of CEA Regualtions, 2023 is attachged as **Annexure R/10 Colly**. Further, it is submitted that Hon'ble commission acknowledges the inclusion of capital expenditure for enabling flexible operation in capital cost as per provision of regulation 19(3)(g). To meet the requirement of flexible operation with required ramp rate, HP Turbine Cpntrol Valve (HPCV) needs to be capable of such modulation to meet the load changes. Due to rigorous modulation/fluctuations in valve opening, clearances of servomotor internals gets increased and thus life deterioration taking place. Existing servomtors are more than 18 years old and they were not meant for such rigorous modulations. To meet the requirement of flexible operation as per CEA Regulations, 2023 the servomotors need upgradation. In view of the above, it is humbly submitted that the Hon'ble Commission may be pleased to approve the proposed expenditure under Section 26(1)(g).	NA
Sub Total-B		**2,159.15**		**2,159.15**		**2,159.15**				
Total Add. Cap. Claimed (A+B)		**2,599.15**	**-**	**2,599.15**	**-**	**2,599.15**				

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

Financing of Additional Capitalisation

PART-I
FORM- 10

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
Date of COD	**01-01-2007**

Amount in Rs Lakh

Financial Year (Starting from COD)1	Actual					Admitted				
	2024-25	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1		3	4	5	6	7	8	9	10	11
Amount capitalised in Work/ Equipment										
Financing Details	**SHALL BE PROVIDED AT THE TIME OF TRUE-UP.**									
Loan-1										
Loan-2										
Loan-3 and so on										
Total Loan2										
Equity Internal Resources										
Others (Pl. specify)										
Total										

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

Statement of Depreciation

PART-I
FORM- 12

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5		6	8
1	Opening Capital Cost	89374.09	89388.73	89388.73	89513.73	91997.58	91997.58
2	Closing Capital Cost	89388.73	89388.73	89513.73	91997.58	91997.58	91997.58
3	Average Capital Cost	89381.41	89388.73	89451.23	90755.65	91997.58	91997.58
1a	Cost of IT Equipments & Software included in (1) above	368.17	368.17	368.17	368.17	368.17	368.17
2a	Cost of IT Equipments & Software included in (2) above	368.17	368.17	368.17	368.17	368.17	368.17
3a	Average Cost of IT Equipments & Software	368.17	368.17	368.17	368.17	368.17	368.17
4	Freehold land	0.00	0.00	0.00	0.00	0.00	0.00
5	Rate of depreciation	5.46%	5.46%	5.46%	5.46%	5.46%	5.46%
6	Depreciable value	80,443.27	80,486.67	80,542.92	81,716.90	82,834.64	82,834.64
7.	Balance useful life at the beginning of the period	8.75	7.75	6.75	5.75	4.75	3.75
8	Remaining depreciable value	17,895.45	15,951.37	13,949.38	13,056.79	11,903.78	9,397.72
9	Depreciation (for the period)	2,045.19	2,058.24	2,066.58	2,270.75	2,506.06	2,506.06
10	Depreciation (annualised)	**2,045.19**	**2,058.24**	**2,066.58**	**2,270.75**	**2,506.06**	**2,506.06**
11	Cumulative depreciation at the end of the period	64,593.01	66,593.54	68,660.12	70,930.86	73,436.92	75,942.98
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009	0.00	0.00	0.00	0.00	0.00	0.00
13	Add: Cumulative depreciation adjustment on account of liability Discharge	0.00	0.00	0.00	0.00	0.00	0.00
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	61.92	0.00	0.00	0.00	0.00	0.00
15	Net Cumulative depreciation at the end of the period after adjustments	64,535.30	66,593.54	68,660.12	70,930.86	73,436.92	75,942.98

Petitioner

Statement of Depreciation (For New Assets Added after 20 Years)

PART-I
FORM- 12

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5		6	8
1	Opening Capital Cost	0.00	0.00	0.00	0.00	0.00	3941.50
	Add Cap During the Year		0.00	0.00	0.00	3941.50	2599.15
2	Closing Capital Cost	0.00	0.00	0.00	0.00	3941.50	6540.65
3	Average Capital Cost	0.00	0.00	0.00	0.00	1970.75	5241.08
1a	Cost of IT Equipments & Software included in (1) above	-	-	-	-	-	-
2a	Cost of IT Equipments & Software included in (2) above	-	-	-	-	-	-
3a	Average Cost of IT Equipments & Software	-	-	-	-	-	-
4	Freehold land	0.00	0.00	0.00	0.00	0.00	0.00
5	Rate of depreciation	NA	NA	NA	NA	NA	NA
6	**Depreciable value**	**0.00**	**0.00**	**0.00**	**0.00**	**1,773.68**	**4,716.97**
7.	Balance useful life at the beginning of the period	8.75	7.75	6.75	5.75	4.75	3.75
7a	Effective Balance useful life for Add Cap>20 Years	8.75	7.75	6.75	5.75	14.75	13.75
8	Remaining depreciable value	-	-	-	-	1,773.68	4,596.72
9	Depreciation (for the period)	-	-	-	-	120.25	334.31
10	Depreciation (annualised)	**-**	**-**	**-**	**-**	**120.25**	**334.31**
11	Cumulative depreciation at the end of the period	-	-	-	-	120.25	454.56
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009	0.00	0.00	0.00	0.00	0.00	0.00
13	Add: Cumulative depreciation adjustment on account of liability Discharge	0.00	0.00	0.00	0.00	0.00	0.00
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	61.92	0.00	0.00	0.00	0.00	0.00
15	Net Cumulative depreciation at the end of the period after adjustments	-	-	-	-	120.25	454.56

Petitioner

						Form 13
Name of the Petitioner		**NTPC Limited**				
Name of the Generating Station		**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**				
						(INR in Lakhs)
S No	**Loan**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
1	**LIC III Tr I D1**					
	Net loan - Opening	450.00	350.00	250.00	150.00	50.00
	Addition during the year					
	Repayments of Loans during the year	100.00	100.00	100.00	100.00	50.00
	Net loan - Closing	350.00	250.00	150.00	50.00	-
	Average Net Loan	400.00	300.00	200.00	100.00	25.00
	Rate of Interest on Loan	6.5868%	6.5868%	6.5868%	6.5868%	6.5868%
	Interest on loan	26.35	19.76	13.17	6.59	1.65
2	**PFC V T 1 D 22**					
	Net loan - Opening	1,041.67	-	-	-	-
	Addition during the year					
	Repayments of Loans during the year	1,041.67		-	-	-
	Net loan - Closing	-	-	-	-	-
	Average Net Loan	520.83	-	-	-	-
	Rate of Interest on Loan	7.7600%				
	Interest on loan	40.42	-	-	-	-
3	**Bonds XXI**					
	Net loan - Opening	450.00	-	-	-	-
	Addition during the year					
	Repayments of Loans during the year	450.00	-	-	-	-
	Net loan - Closing	-	-	-	-	-
	Average Net Loan	225.00	-	-	-	-
	Rate of Interest on Loan	7.7425%				
	Interest on loan	17.42	-	-	-	-
4	**Bonds XXII Series**					
	Net loan - Opening	200.00	100.00	-	-	-
	Addition during the year					
	Repayments of Loans during the year	100.00	100.00	-	-	-
	Net loan - Closing	100.00	-	-	-	-
	Average Net Loan	150.00	50.00	-	-	-
	Rate of Interest on Loan	8.2071%	8.2071%			
	Interest on loan	12.31	4.10	-	-	-
5	**Bonds XXIII Series**					
	Net loan - Opening	40.00	20.00	-	-	-
	Addition during the year					
	Repayments of Loans during the year	20.00	20.00	-	-	-
	Net loan - Closing	20.00	-	-	-	-
	Average Net Loan	30.00	10.00	-	-	-
	Rate of Interest on Loan	8.4096%	8.4096%			
	Interest on loan	2.52	0.84	-	-	-
6	**Bonds XXVII Series**					
	Net loan - Opening	1,500.00	1,200.00	900.00	600.00	300.00
	Addition during the year					
	Repayments of Loans during the year	300.00	300.00	300.00	300.00	300.00
	Net loan - Closing	1,200.00	900.00	600.00	300.00	-
	Average Net Loan	1,350.00	1,050.00	750.00	450.00	150.00
	Rate of Interest on Loan	11.2800%	11.2800%	11.2800%	11.2800%	11.2800%
	Interest on loan	152.28	118.44	84.60	50.76	16.92
	Total Loans					
	Net loan - Opening	3,681.67	1,670.00	1,150.00	750.00	350.00
	Addition during the year	-	-	-	-	-
	Repayments of Loans during the year	2,011.67	520.00	400.00	400.00	350.00
	Net loan - Closing	1,670.00	1,150.00	750.00	350.00	-
	Average Net Loan	2,675.83	1,410.00	950.00	550.00	175.00
	Rate of Interest on Loan	9.39139%	10.15212%	10.29196%	10.42669%	10.60954%
	Interest on loan	251.30	143.14	97.77	57.35	18.57

Note:-

1) LIC III Rate of interest includes upfront fees of 0.0158% (i.e. 0.20%*1.103%/14years).

Petitioner

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Apr-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	1,89,033.46	1,00,359.93	
2	Value of Stock	(Rs.)	889669445	1,54,70,87,057.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,03,064.14	1,17,811.40	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-785.12		
5	Coal supplied by Coal Company (1+2)	(MT)	4,02,279.02	1,17,811.40	
6	Normative Transit & Handling Losses	(MT)	3,224.51	235.62	
7	Net coal / Lignite Supplied (3-4)	(MT)	3,99,054.51	1,17,575.78	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,27,37,47,315.00	1,73,34,68,274.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	
10	Unloading, Handling and Sampling Charges	(Rs.)	6,95,14,931.00	-	
11	Total amount Charged (6+7)	(Rs.)	1,34,32,62,246.00	1,73,34,68,274.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	56,63,45,964.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	56,63,45,964.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	1,90,96,08,210.00	1,73,34,68,274.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,759.97**	**15,052.87**	**-**
19	Blending Ratio	%	79.24%	20.76%	0.00%
20	Weighted average cost of coal	Rs./MT	**6896.78**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3800.00		
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3731.00		
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)		5023.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5030.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**3918.32**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3749.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3811.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5029.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5067.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**4050.77**		

Petitioner

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**May-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	2,26,540.96	1,67,784.70	
2	Value of Stock	(Rs.)	1078326951	2,52,56,39,399.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,87,502.12	50,732.00	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-1,106.77		
5	Coal supplied by Coal Company (1+2)	(MT)	4,86,395.35	50,732.00	
6	Normative Transit & Handling Losses	(MT)	3,900.02	101.46	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,82,495.33	50,630.54	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,58,71,40,693.00	72,00,82,415.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	
10	Unloading, Handling and Sampling Charges	(Rs.)	8,50,41,697.00	-	
11	Total amount Charged (6+7)	(Rs.)	1,67,21,82,390.00	72,00,82,415.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	68,37,65,551.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	68,37,65,551.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,35,59,47,941.00	72,00,82,415.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,843.59**	**14,860.34**	**-**
19	Blending Ratio	%	80.33%	19.67%	0.00%
20	Weighted average cost of coal	Rs./MT	**6813.63**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3749.00		0.00
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3811.00		0.00
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)		5029.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5067.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**4050.77**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3791.00		0.00
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3893.00		0.00
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5049.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5164.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**4099.82**		

Petitioner

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Jun-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	3,29,288.30	1,63,924.24	-
2	Value of Stock	(Rs.)	1594934694	2,43,59,67,735.00	-
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	3,92,569.53	-	-
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-209.00		
5	Coal supplied by Coal Company (1+2)	(MT)	3,92,360.53	-	-
6	Normative Transit & Handling Losses	(MT)	3,140.56	-	
7	Net coal / Lignite Supplied (3-4)	(MT)	3,89,219.97	-	-
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,42,45,51,998.00	-	-
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	-
10	Unloading, Handling and Sampling Charges	(Rs.)	8,76,75,423.00		
11	Total amount Charged (6+7)	(Rs.)	1,51,22,27,421.00	-	-
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	53,55,33,233.00	-	-
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	53,55,33,233.00	-	-
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,04,77,60,654.00	-	-
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**5,069.81**	**14,860.34**	**-**
19	Blending Ratio	%	79.51%	20.49%	0.00%
20	Weighted average cost of coal	Rs./MT	**7076.19**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3791.00		0.00
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3893.00		0.00
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)		5049.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5164.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**4099.82**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3680.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3823.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5076.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		0.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**4093.26**		

Petitioner

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Jul-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	3,04,557.27	95,796.24	
2	Value of Stock	(Rs.)	1544045327	1,42,35,63,378.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,11,326.03	39,119.60	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-189.00		
5	Coal supplied by Coal Company (1+2)	(MT)	4,11,137.03	39,119.60	
6	Normative Transit & Handling Losses	(MT)	3,290.61	78.24	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,07,846.42	39,041.36	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,49,18,44,402.00	66,55,40,412.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	11,70,44,730.00	-5,84,55,057.00	
10	Unloading, Handling and Sampling Charges	(Rs.)			
11	Total amount Charged (6+7)	(Rs.)	1,60,88,89,132.00	60,70,85,355.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	57,24,98,529.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	57,24,98,529.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,18,13,87,661.00	60,70,85,355.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**5,229.38**	**15,059.96**	**-**
19	Blending Ratio	%	80.06%	19.94%	0.00%
20	Weighted average cost of coal	Rs./MT	**7190.02**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3680.00		
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3823.00		
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)		5076.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		0.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**4093.26**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3840.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3831.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5076.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5417.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**4102.25**		

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					PART-I FORM- 15
Details of Source wise Fuel for Computation of Energy Charges					
Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Aug-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	2,65,458.69	64,128.60	
2	Value of Stock	(Rs.)	1388185509	96,57,74,092.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,36,181.33	78,216.80	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-132.00		
5	Coal supplied by Coal Company (1+2)	(MT)	4,36,049.33	78,216.80	
6	Normative Transit & Handling Losses	(MT)	3,489.45	156.43	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,32,559.88	78,060.37	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,44,48,01,629.00	1,14,74,74,085.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	
10	Unloading, Handling and Sampling Charges	(Rs.)	13,33,68,386.00	-	
11	Total amount Charged (6+7)	(Rs.)	1,57,81,70,016.00	1,14,74,74,085.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	63,81,95,470.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	63,81,95,470.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,21,63,65,486.00	1,14,74,74,085.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**5,163.98**	**14,862.25**	**-**
19	Blending Ratio	%	82.85%	17.15%	0.00%
20	Weighted average cost of coal	Rs./MT	**6827.62**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3840.00		
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3831.00		
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)		5076.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5417.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**4102.25**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3835.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3595.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5175.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		4920.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**3915.58**		

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Location: NTPC Limited

					PART-I FORM- 15
Details of Source wise Fuel for Computation of Energy Charges					
Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Sep-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	1,91,906.57	64,263.97	
2	Value of Stock	(Rs.)	991000773	95,51,07,268.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	3,35,545.48	50,268.00	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-1,607.60		
5	Coal supplied by Coal Company (1+2)	(MT)	3,33,937.88	50,268.00	
6	Normative Transit & Handling Losses	(MT)	2,684.36	100.54	
7	Net coal / Lignite Supplied (3-4)	(MT)	3,31,253.52	50,167.46	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,07,75,74,220.00	67,63,05,155.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-1,66,06,180.00	
10	Unloading, Handling and Sampling Charges	(Rs.)	9,62,83,788.00		
11	Total amount Charged (6+7)	(Rs.)	1,17,38,58,008.00	65,96,98,975.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	46,97,66,749.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	46,97,66,749.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	1,64,36,24,757.00	65,96,98,975.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**5,035.98**	**14,111.56**	**-**
19	Blending Ratio	%	84.36%	15.64%	0.00%
20	Weighted average cost of coal	Rs./MT	**6455.05**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3835.00		
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3595.00		
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)		5175.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		4920.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**3915.58**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3684.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3625.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5034.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5225.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**3876.30**		

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Reason: AGM (Commercial)
Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Oct-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	52,714.00	45,495.63	
2	Value of Stock	(Rs.)	265467059	64,20,14,427.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,34,626.39	26,371.00	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-3,808.97		
5	Coal supplied by Coal Company (1+2)	(MT)	4,30,817.42	26,371.00	
6	Normative Transit & Handling Losses	(MT)	3,477.01	52.74	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,27,340.41	26,318.26	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,27,71,80,090.00	35,44,29,407.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	
10	Unloading, Handling and Sampling Charges	(Rs.)	7,10,65,202.00	-	
11	Total amount Charged (6+7)	(Rs.)	1,34,82,45,293.00	35,44,29,407.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	54,98,83,574.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	54,98,83,574.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	1,89,81,28,867.00	35,44,29,407.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,506.98**	**13,875.36**	**-**
19	Blending Ratio	%	88.86%	11.14%	0.00%
20	Weighted average cost of coal	Rs./MT	**5550.35**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3684.00	0.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3625.00	0.00	
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	0.00	5034.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)	0.00	5225.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**3876.30**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3646.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3728.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5119.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5179.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**3877.63**		

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Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Nov-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	11,307.41	16,288.89	
2	Value of Stock	(Rs.)	50962102	22,60,14,248.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,74,848.93	52,743.40	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-6,526.90		
5	Coal supplied by Coal Company (1+2)	(MT)	4,68,322.03	52,743.40	
6	Normative Transit & Handling Losses	(MT)	3,798.79	105.49	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,64,523.24	52,637.91	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,46,47,54,177.00	69,50,67,018.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	
10	Unloading, Handling and Sampling Charges	(Rs.)	6,14,81,317.00		
11	Total amount Charged (6+7)	(Rs.)	1,52,62,35,494.00	69,50,67,018.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	65,86,22,213.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	65,86,22,213.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,18,48,57,706.00	69,50,67,018.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,698.77**	**13,363.18**	**-**
19	Blending Ratio	%	82.17%	17.83%	0.00%
20	Weighted average cost of coal	Rs./MT	**6243.97**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3646.00	0.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3728.00	0.00	
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	0.00	5119.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)	0.00	5179.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**3877.63**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3719.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3829.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5142.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5197.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**4067.82**		

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Reason: AGM (Commercial)
Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Dec-23**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	1,15,374.65	9,390.80	
2	Value of Stock	(Rs.)	542119249	12,54,90,981.00	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,70,415.57	46,287.60	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-3,977.41		
5	Coal supplied by Coal Company (1+2)	(MT)	4,66,438.16	46,287.60	
6	Normative Transit & Handling Losses	(MT)	3,763.33	92.58	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,62,674.84	46,195.03	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,30,81,78,836.00	63,31,33,878.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-70,65,042.00	
10	Unloading, Handling and Sampling Charges	(Rs.)	6,51,11,122.00		
11	Total amount Charged (6+7)	(Rs.)	1,37,32,89,959.00	62,60,68,836.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	63,63,01,217.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	63,63,01,217.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,00,95,91,175.00	62,60,68,836.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,414.35**	**13,520.71**	**-**
19	Blending Ratio	%	85.84%	14.16%	0.00%
20	Weighted average cost of coal	Rs./MT	**5704.12**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3719.00		
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3829.00		
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)		5142.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		0.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**4067.82**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3825.00		
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3472.00		
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		5184.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5140.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**3762.30**		

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Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Jan-24**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	1,99,700.49	9,059.83	
2	Value of Stock	(Rs.)	881547029	122495264	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,91,478.14	51,320.74	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-3,334.76		
5	Coal supplied by Coal Company (1+2)	(MT)	4,88,143.38	51,320.74	
6	Normative Transit & Handling Losses	(MT)	3,905.15	102.64	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,84,238.23	51,218.10	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,47,51,67,913.00	81,21,71,281.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-	
10	Unloading, Handling and Sampling Charges	(Rs.)	1,06,74,426.00		
11	Total amount Charged (6+7)	(Rs.)	1,48,58,42,339.00	81,21,71,281.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	57,55,58,340.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	57,55,58,340.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,06,14,00,679.00	81,21,71,281.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,302.94**	**15,505.95**	**-**
19	Blending Ratio	%	87.59%	12.41%	
20	Weighted average cost of coal	Rs./MT	**5693.52**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3825.00	0.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3472.00	0.00	
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	0.00	5184.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)	0.00	0.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**3762.30**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3534.00	0.00	
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3743.00	0.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)	0.00	5147.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)	0.00	5031.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**3852.30**		

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Reason: AGM (Commercial)
Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Feb-24**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	2,58,326.72	14,914.93	
2	Value of Stock	(Rs.)	1111564382	231270090	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	5,01,358.03	39,908.20	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-4,027.17		
5	Coal supplied by Coal Company (1+2)	(MT)	4,97,330.86	39,908.20	
6	Normative Transit & Handling Losses	(MT)	3,978.65	79.82	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,93,352.21	39,828.38	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,45,29,98,746.00	46,66,24,005.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-1,31,98,696.00	
10	Unloading, Handling and Sampling Charges	(Rs.)	3,48,63,076.00		
11	Total amount Charged (6+7)	(Rs.)	1,48,78,61,822.00	45,34,25,309.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	67,14,55,311.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	67,14,55,311.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,15,93,17,133.00	45,34,25,309.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,351.43**	**12,507.38**	**-**
19	Blending Ratio	%	86.42%	13.58%	
20	Weighted average cost of coal	Rs./MT	**5459.23**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3534.00	0.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3743.00	0.00	
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	0.00	5147.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)	0.00	5031.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**3852.30**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3683.00	0.00	
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3661.00	0.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)	0.00	5048.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)	0.00	5149.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**3866.00**		

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Location: NTPC Limited

PART-I

FORM- 15

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company			**NTPC Limited**		
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**		
S. No.	**Month**	**Unit**	**Mar-24**		
			Domestic (Rail)	**Imported**	**Bio Mass**
A)	**OPENING QUANTITY**				
1	Opening Quantity of Coal/ Lignite	(MT)	4,46,667.93	18,691.31	
2	Value of Stock	(Rs.)	1943646278	233779335	
B)	**QUANTITY**				
3	Quantity of Coal supplied by Coal Company	(MT)	4,59,623.23	46,534.00	
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-3,619.15		
5	Coal supplied by Coal Company (1+2)	(MT)	4,56,004.08	46,534.00	
6	Normative Transit & Handling Losses	(MT)	3,648.03	93.07	
7	Net coal / Lignite Supplied (3-4)	(MT)	4,52,356.05	46,440.93	
C)	**PRICE**				
8	Amount charged by the Coal Company*	(Rs.)	1,42,72,78,706.00	65,61,88,965.00	
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-3,59,59,270.00	
10	Unloading, Handling and Sampling Charges	(Rs.)	6,23,65,247.00		
11	Total amount Charged (6+7)	(Rs.)	1,48,96,43,952.00	62,02,29,695.00	
D)	**TRANSPORTATION**				
12	Transportation charges by rail ship, road transport	(Rs.)	59,23,08,769.00	-	
13	Adjustment (+/-) in amount charged made by Railways/ Transport Company	(Rs.)			
14	Demurrage Charges, if any	(Rs.)			
15	Cost of fuel in transporting coal through MGR system, if applicable	(Rs.)			
16	Total Transportation Charges (9+10+11+12)	(Rs.)	59,23,08,769.00	-	
17	Total amount Charged for coal supplied including Transportation (8+13+13A)	(Rs.)	2,08,19,52,721.00	62,02,29,695.00	
E)	**TOTAL COST**				
18	**Landed cost of coal (14)/(5)**	**Rs./MT**	**4,477.74**	**13,111.92**	**-**
19	Blending Ratio	%	85.64%	14.36%	
20	Weighted average cost of coal	Rs./MT	**5717.48**		
F)	**QUALITY**				
21	GCV of Domestic Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	3683.00	0.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3661.00	0.00	
23	GCV of Imported Coal of the opening stock as per bill of Coal Company	(kCal/Kg)	0.00	5048.00	
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)	0.00	5149.00	
25	Weighted average GCV of coal/ Lignite as Billed	(kCal/Kg)	**3883.00**		
26	GCV of Domestic Coal of opening stock as received at Station	(kCal/Kg)	3669.00	0.00	
27	GCV of Domestic Coal supplied as received at Station	(kCal/Kg)	3682.00	0.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)	0.00	5122.00	
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)	0.00	5118.00	
30	**Weighted average GCV of coal/ Lignite as Received**	**(kCal/Kg)**	**3883.00**		

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PART-I
FORM- 15A

Details of Secondary Fuel for Computation of Energy Charges	
Name of the Company	**NTPC Limited**
Name of the Power Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Sl.No.	Month	Unit	Apr-23	
			HFO	LDO
1	Opening Quantity of Oil	KL	652.52	952.59
2	Value of Opening	(Rs)	3,16,06,811.00	8,09,44,692.83
3	Quantity of Oil supplied by Oil Company	KL	-	
4	Adjustment (+/-) in quantity supplied made by Oil Company	KL		
5	Oil supplied by oil company (3+4)	KL	-	
6	Normative Transit & Handling Losses	KL	-	-
7	Net Oil Supplied (5-6)	KL	-	
8	Amount charged by the Oil Company	(Rs)	-	
9	Adjustment(+/-) in amount charged made by Oil Company	(Rs)		
10	Handling, Sampling and such other Similar Charges	(Rs)		
11	**Total amount charged (8+9+10)**	(Rs)	**-**	
12	Transportation charges by rail / ship / road transport			
	By Rail	(Rs)		
	By Road	(Rs)		
	By Ship	(Rs)		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs)		
14	Demurrage Charges, if any	(Rs)		
15	Cost of diesel in transporting Oil through MGR system, if applicable	(Rs)		
16	**Total Transportation Charges (12+/-13-14+15)**	(Rs)	**-**	
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	(Rs)	**-**	
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	(Rs)	48,438.22	84,973.22
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		84973.22	
21	GCV of Oil of the Opening stock as per bill of Oil company	(kCal/Ltr)		
22	GCV of oil supplied as per bill of oil company	(kCal/Ltr)		
23	GCV if Imported coal of the opening stock as per bill of Oil company	(kCal/Ltr)		
24	GCV of Imported Oil supplied as per bill of coal company	(kCal/Ltr)		
25	Weighted average GCV if Oil as billed	(kCal/Ltr)		
26	GCV of Oil of the Opening stock as received at station	(kCal/Ltr)		
27	GCV of Oil supplied	(kCal/Ltr)		9,198.00
28	GCV of Imported coal of the Opening stock as received at station	(kCal/Ltr)		
29	GCV of Imported coal supplied as received at station	(kCal/Ltr)		
30	Weighted average GCV of Oil	(kCal/Ltr)	9239.00	

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Location: NTPC Limited

			PART-I FORM- 15A	
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**May-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	612.79
2	Value of Opening	**(Rs)**	3,16,06,811.00	5,20,70,955.55
3	Quantity of Oil supplied by Oil Company	**KL**	-	
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	
6	Normative Transit & Handling Losses	**KL**		
7	Net Oil Supplied (5-6)	**KL**	-	
8	Amount charged by the Oil Company	**(Rs)**	-	
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**		
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	84,973.47
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		84973.47	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,198.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9239.00	

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Location: NTPC Limited

				PART-I FORM- 15A
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Jun-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	234.37
2	Value of Opening	**(Rs)**	3,16,06,811.00	1,99,15,570.67
3	Quantity of Oil supplied by Oil Company	**KL**	-	400.000
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	400.00
6	Normative Transit & Handling Losses	**KL**	-	
7	Net Oil Supplied (5-6)	**KL**	-	400.00
8	Amount charged by the Oil Company	**(Rs)**	-	2,86,01,180
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	**2,86,01,180.00**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	**2,86,01,180.00**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	76,480.14
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		76480.14	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,239.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9240.00	

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Location: NTPC Limited

			PART-I FORM- 15A	
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Jul-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	450.80
2	Value of Opening	**(Rs)**	3,16,06,811.00	3,44,77,411.60
3	Quantity of Oil supplied by Oil Company	**KL**	-	1,000.000
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	1,000.00
6	Normative Transit & Handling Losses	**KL**	-	
7	Net Oil Supplied (5-6)	**KL**	-	1,000.00
8	Amount charged by the Oil Company	**(Rs)**	-	7,55,07,386
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	**7,55,07,386.00**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	**7,55,07,386.00**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	75,809.73
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		75809.73	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,240.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9238.00	

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Reason: AGM (Commercial)
Location: NTPC Limited

			PART-I FORM- 15A	
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Aug-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	1,120.44
2	Value of Opening	**(Rs)**	3,16,06,811.00	8,49,40,236.69
3	Quantity of Oil supplied by Oil Company	**KL**	-	
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	-
6	Normative Transit & Handling Losses	**KL**	-	-
7	Net Oil Supplied (5-6)	**KL**	-	-
8	Amount charged by the Oil Company	**(Rs)**	-	
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	**-**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	**-**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	75,809.67
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		75809.67	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,238.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9238.00	

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Location: NTPC Limited

			PART-I FORM- 15A	
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Sep-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	673.65
2	Value of Opening	**(Rs)**	3,16,06,811.00	5,10,69,335.20
3	Quantity of Oil supplied by Oil Company	**KL**	-	
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	-
6	Normative Transit & Handling Losses	**KL**	-	-
7	Net Oil Supplied (5-6)	**KL**	-	-
8	Amount charged by the Oil Company	**(Rs)**	-	
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	**-**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	**-**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	75,809.85
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		75809.85	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,238.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9238.00	

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Location: NTPC Limited

			PART-I FORM- 15A	
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Oct-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	84.35
2	Value of Opening	**(Rs)**	3,16,06,811.00	63,94,829.84
3	Quantity of Oil supplied by Oil Company	**KL**	3,163.69	2,000.00
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	3,163.69	2,000.00
6	Normative Transit & Handling Losses	**KL**	-	-
7	Net Oil Supplied (5-6)	**KL**	3,163.69	2,000.00
8	Amount charged by the Oil Company	**(Rs)**	29,37,35,028.00	18,83,68,851.00
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**29,37,35,028.00**	**18,83,68,851.00**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	-	-
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**29,37,35,028.00**	**18,83,68,851.00**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	85,252.65	93,440.94
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		93440.94	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,238.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9187.00	

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Reason: AGM (Commercial)
Location: NTPC Limited

				PART-I **FORM- 15A**
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Nov-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	32.10
2	Value of Opening	**(Rs)**	3,16,06,811.00	29,99,823.06
3	Quantity of Oil supplied by Oil Company	**KL**	-	1,000.00
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	1,000.00
6	Normative Transit & Handling Losses	**KL**	-	-
7	Net Oil Supplied (5-6)	**KL**	-	1,000.00
8	Amount charged by the Oil Company	**(Rs)**	-	8,86,62,946.00
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	**8,86,62,946.00**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	**8,86,62,946.00**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	88,811.86
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		88811.86	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,187.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9739.00	

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Reason: AGM (Commercial)
Location: NTPC Limited

			PART-I FORM- 15A	
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Dec-23**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	308.21
2	Value of Opening	**(Rs)**	3,16,06,811.00	2,73,72,966.97
3	Quantity of Oil supplied by Oil Company	**KL**	-	1,000.00
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	1,000.00
6	Normative Transit & Handling Losses	**KL**	-	-
7	Net Oil Supplied (5-6)	**KL**	-	1,000.00
8	Amount charged by the Oil Company	**(Rs)**	-	7,90,93,146.00
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	**7,90,93,146.00**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	**7,90,93,146.00**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	81,383.01
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		81383.01	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,739.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9511.00	

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 15A

Details of Secondary Fuel for Computation of Energy Charges	
Name of the Company	**NTPC Limited**
Name of the Power Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Sl.No.	Month	Unit	Jan-24	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	308.21
2	Value of Opening	**(Rs)**	3,16,06,811.00	2,73,72,966.97
3	Quantity of Oil supplied by Oil Company	**KL**	-	1,000.00
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	-	1,000.00
6	Normative Transit & Handling Losses	**KL**	-	-
7	Net Oil Supplied (5-6)	**KL**	-	1,000.00
8	Amount charged by the Oil Company	**(Rs)**	-	7,90,93,146.00
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**-**	**7,90,93,146.00**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-**	**7,90,93,146.00**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22	81,383.01
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		81383.01	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,739.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9511.00	

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

				PART-I **FORM- 15A**
Details of Secondary Fuel for Computation of Energy Charges				
Name of the Company			**NTPC Limited**	
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**	
Sl.No.	**Month**	**Unit**	**Feb-24**	
			HFO	**LDO**
1	Opening Quantity of Oil	**KL**	652.52	467.25
2	Value of Opening	**(Rs)**	3,16,06,811.00	3,80,26,518.29
3	Quantity of Oil supplied by Oil Company	**KL**	3,158.470	1,000.000
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**		
5	Oil supplied by oil company (3+4)	**KL**	3,158.47	1,000.00
6	Normative Transit & Handling Losses	**KL**		
7	Net Oil Supplied (5-6)	**KL**	3,158.47	1,000.00
8	Amount charged by the Oil Company	**(Rs)**	24,50,23,090.00	7,95,65,146
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**		
10	Handling, Sampling and such other Similar Charges	**(Rs)**		
11	**Total amount charged (8+9+10)**	**(Rs)**	**24,50,23,090.00**	**7,95,65,146.00**
12	Transportation charges by rail / ship / road transport			
	By Rail	**(Rs)**		
	By Road	**(Rs)**		
	By Ship	**(Rs)**		
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**		
14	Demurrage Charges, if any	**(Rs)**		
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**		
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-**	**-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**24,50,23,090.00**	**7,95,65,146.00**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	72,587.45	80,144.01
19	Blending Ratio		0%	100.00%
20	Weighted average cost of Oil		80144.01	
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**		
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**		
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**		
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**		
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**		
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**		
27	GCV of Oil supplied	**(kCal/Ltr)**		9,511.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**		
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**		
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9384.00	

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Reason: AGM (Commercial)
Location: NTPC Limited

			PART-I FORM- 15A
Details of Secondary Fuel for Computation of Energy Charges			
Name of the Company			**NTPC Limited**
Name of the Power Station			**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
Sl.No.	**Month**	**Unit**	**Mar-24**
			HFO / **LDO**
1	Opening Quantity of Oil	**KL**	652.52 / 743.90
2	Value of Opening	**(Rs)**	3,16,06,811.00 / 5,96,19,511.95
3	Quantity of Oil supplied by Oil Company	**KL**	-
4	Adjustment (+/-) in quantity supplied made by Oil Company	**KL**	
5	Oil supplied by oil company (3+4)	**KL**	- / -
6	Normative Transit & Handling Losses	**KL**	- / -
7	Net Oil Supplied (5-6)	**KL**	- / -
8	Amount charged by the Oil Company	**(Rs)**	-
9	Adjustment(+/-) in amount charged made by Oil Company	**(Rs)**	
10	Handling, Sampling and such other Similar Charges	**(Rs)**	
11	**Total amount charged (8+9+10)**	**(Rs)**	**-** / **-**
12	Transportation charges by rail / ship / road transport		
	By Rail	**(Rs)**	
	By Road	**(Rs)**	
	By Ship	**(Rs)**	
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	**(Rs)**	
14	Demurrage Charges, if any	**(Rs)**	
15	Cost of diesel in transporting Oil through MGR system, if applicable	**(Rs)**	
16	**Total Transportation Charges (12+/-13-14+15)**	**(Rs)**	**-** / **-**
17	**Total amount Charged for fuel supplied including Transportation (11+16)**	**(Rs)**	**-** / **-**
18	Landed Cost of Oil (LDO/HFO) (2+17)/(1+7)	**(Rs)**	48,438.22 / 80,144.53
19	Blending Ratio		0% / 100.00%
20	Weighted average cost of Oil		80144.53
21	GCV of Oil of the Opening stock as per bill of Oil company	**(kCal/Ltr)**	
22	GCV of oil supplied as per bill of oil company	**(kCal/Ltr)**	
23	GCV if Imported coal of the opening stock as per bill of Oil company	**(kCal/Ltr)**	
24	GCV of Imported Oil supplied as per bill of coal company	**(kCal/Ltr)**	
25	Weighted average GCV if Oil as billed	**(kCal/Ltr)**	
26	GCV of Oil of the Opening stock as received at station	**(kCal/Ltr)**	
27	GCV of Oil supplied	**(kCal/Ltr)**	9,511.00
28	GCV of Imported coal of the Opening stock as received at station	**(kCal/Ltr)**	
29	GCV of Imported coal supplied as received at station	**(kCal/Ltr)**	
30	Weighted average GCV of Oil	**(kCal/Ltr)**	9384.00

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Reason: AGM (Commercial)
Location: NTPC Limited

Computation of Energy Charges

Name of the Company	**NTPC Limited**
Name of the Power Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

Computation of Energy Charges

				2024-25	2025-26	2026-27	2027-28	2028-29
1	Rate of Energy Charge from Sec. Fuel Oil/ Alternate Fuel (p/kwh)	$(REC)_s$	$= (Q_s)_n \times P_s$	4.080	4.080	4.080	4.080	4.080
2	Heat Contribution from SFO / Alternate Fuel	(H_s)	$= (Qs)_n \times (GCV)_s$	4.673	4.673	4.673	4.673	4.673
3	Heat Contribution from coal	$(H_p)_s$	$= GHR - H_s$	2410.33	2410.33	2410.33	2410.33	2410.33
4	Specific Primary Fuel Consumption	$(Qp)_n$	$= H_p / (GCV)_p$	0.623	0.623	0.623	0.623	0.623
5	Rate of Energy charge from Primary Fuel (p/kwh)	$(REC)_p$		392.631	392.631	392.631	392.631	392.631
6	Rate of Energy charge ex-bus (p/kWh)	(REC)	$= ((REC)_s + (REC)_p / (1-(AUX))$	397.069	397.069	397.069	397.069	397.069

Part-I
Form-15B
ADDITIONAL FORM

Computation of Energy Charges

Name of the Company		**NTPC Limited**				
Name of the Power Station		**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**				
		2024-25	**2025-26**	**2026-27**	**2027-28**	**2028-29**
No of Days in the period	Days	365	365	365	366	365
No of Days in the year	Days	365	365	365	366	365
Sp. Oil consumption	ml/kwh	0.5	0.5	0.5	0.5	0.5
Auxiliary consumption	%	9.00%	9.00%	9.00%	9.00%	9.00%
Heat Rate	Kcal/Kwh	2,415.00	2,415.00	2,415.00	2,415.00	2,415.00
Computation of Variable Charges						
Variable Charge (Coal)	p/kwh	431.463	431.463	431.463	431.463	431.463
Variable Charge (Oil)	p/kwh	4.483	4.483	4.483	4.483	4.483
Total	p/kwh	435.946	435.946	435.946	435.946	435.946
Price of fuel from Form-15/15A						
Coal Cost	(Rs./MT)	6302.29	6302.29	6302.29	6302.29	6302.29
Oil Cost	(Rs./KL)	81596.95	81596.95	81596.95	81596.95	81596.95
Computation of Fuel Expenses for Calculation of IWC:						
ESO in a year	(MUs)	1422.93	1422.93	1422.93	1426.83	1422.93
ESO for 50 days	(MUs)	194.922	194.922	194.922	194.922	194.922
Cost of coal for 50 Days	**(Rs. Lakh)**	**8410.16**	**8410.16**	**8410.16**	**8410.16**	**8410.16**
Cost of oil for 2 months	**(Rs. Lakh)**	**106.32**	**106.32**	**106.32**	**106.62**	**106.32**
Energy Expenses for 45 days	**(Rs. Lakh)**	**7647.80**	**7647.80**	**7647.80**	**7647.80**	**7647.80**
Coal		**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Wtd. Avg. Price of Coal	Rs./MT	6302.29	6302.29	6302.29	6302.29	6302.29
Wtd. Avg. GCV of Coal as received	kCal/Kg	3953.92	3953.92	3953.92	3953.92	3953.92
Wtd. Avg.	kCal/Kg	**3868.92**	**3868.92**	**3868.92**	**3868.92**	**3868.92**
Sec. Oil						
Wtd. Avg. Price of Secondary Fuel	Rs/KL	81596.95	81596.95	81596.95	81596.95	81596.95
Wtd. Avg. GCV of Secondary Fuel	kCal/L	9345.67	9345.67	9345.67	9345.67	9345.67

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Reason: AGM (Commercial)
Location: NTPC Limited

Petitioner

PART-I
FORM- L

Statement of Capital cost

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station, Stage-III
COD	01-01-2007
For Financial Year	2024-29

(Rs Lakh)

Sl. No.	Particulars	2024-25			2025-26			2026-27			2027-28			2028-29		
		Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening Gross Block Amount as per books	1,04,963.06	1,132.36		SHALL BE PROVIDED AT THE TIME OF TRUE-UP.											
	b) Amount of IDC in A(a) above	14.12														
	c) Amount of FC in A(a) above	0.00														
	d) Amount of FERV in A(a) above	2,648.88														
	e) Amount of Hedging Cost in A(a) above	0.00														
	f) Amount of IEDC in A(a) above	0.00														
B	a) Addition in Gross Block Amount during the period (Direct purchases)	SHALL BE PROVIDED AT THE TIME OF TRUE-UP														
	b) Amount of IDC in B(a) above															
	c) Amount of FC in B(a) above															
	d) Amount of FERV in B(a) above															
	e) Amount of Hedging Cost in B(a) above															
	f) Amount of IEDC in B(a) above															
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)															
	b) Amount of IDC in C(a) above															
	c) Amount of FC in C(a) above															
	d) Amount of FERV in C(a) above															
	e) Amount of Hedging Cost in C(a) above															
	f) Amount of IEDC in C(a) above															
D	a) Deletion in Gross Block Amount during the period															
	b) Amount of IDC in D(a) above															
	c) Amount of FC in D(a) above															
	d) Amount of FERV in D(a) above															
	e) Amount of Hedging Cost in D(a) above															
	f) Amount of IEDC in D(a) above															
E	a) Closing Gross Block Amount as per books															
	b) Amount of IDC in E(a) above															
	c) Amount of FC in E(a) above															
	d) Amount of FERV in E(a) above															
	e) Amount of Hedging Cost in E(a) above															
	f) Amount of IEDC in E(a) above															

Petitioner

PART-I
FORM- M

Statement of Capital Works in Progress

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**
COD	**01-01-2007**
For Financial Year	**2024-29**

(Rs Lakh)

Sl. No.	Particulars	2024-25			2025-26			2026-27			2027-28			2028-29		
		Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening CWIP as per books	2.07	0.00	2.07	SHALL BE PROVIDED AT THE TIME OF TRUE-UP.											
	b) Amount of IDC in A(a) above	-	-	-												
	c) Amount of FC in A(a) above	-	-	-												
	d) Amount of FERV in A(a) above	-	-	-												
	e) Amount of Hedging Cost in A(a) above	-	-	-												
	f) Amount of IEDC in A(a) above	-	-	-												
B	a) Addition in CWIP during the period	SHALL BE PROVIDED AT THE TIME OF TRUE-UP.														
	b) Amount of IDC in B(a) above															
	c) Amount of FC in B(a) above															
	d) Amount of FERV in B(a) above															
	e) Amount of Hedging Cost in B(a) above															
	f) Amount of IEDC in B(a) above															
C	a) Transferred to Gross Block Amount during the period															
	b) Amount of IDC in C(a) above															
	c) Amount of FC in C(a) above															
	d) Amount of FERV in C(a) above															
	e) Amount of Hedging Cost in C(a) above															
	f) Amount of IEDC in C(a) above															
D	a) Deletion in CWIP during the period															
	b) Amount of IDC in D(a) above															
	c) Amount of FC in D(a) above															
	d) Amount of FERV in D(a) above															
	e) Amount of Hedging Cost in D(a) above															
	f) Amount of IEDC in D(a) above															
E	a) Closing CWIP as per books															
	b) Amount of IDC in E(a) above															
	c) Amount of FC in E(a) above															
	d) Amount of FERV in E(a) above															
	e) Amount of Hedging Cost in E(a) above															
	f) Amount of IEDC in E(a) above															

Petitioner

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- N

Calculation of Interest on Normative Loan

Name of the Company :		**NTPC Limited**
Name of the Power Station :		**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

(Amount in Rs Lakh)

S. No.	Particulars		Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	**2**		**3**	**4**	**5**		**6**	**8**
1	Gross Normative loan – Opening	A	62,561.86	62,572.11	62,572.11	62,659.61	64,398.30	67,157.35
2	Cumulative repayment of Normative loan up to previous year	B	62,450.44	62,572.11	62,572.11	62,659.61	64,398.30	67,024.61
3	**Net Normative loan – Opening**	**C=A-B**	111.41	-	-	-	-	132.74
4	Add: Increase due to addition during the year / period	D	57.68	-	87.50	1,738.70	2,759.05	1,819.41
5	Less: Decrease due to de-capitalisation during the year / period	E	49.81	-	-	-	-	-
6	Less: Decrease due to reversal during the year / period	F		-	-	-	-	-
7	Add: Increase due to discharges during the year / period	G	2.38	-	-	-	-	-
8	Normative Loan Closing	H=C+D-E-F+G	121.66	0.00	87.50	1738.70	2759.05	1952.15
9	Repayment of Loan during the year	I	121.66	0.00	87.50	1738.70	2626.31	1952.15
10	Repayment adjustment on account of decapitalization	J	0.00	0.00	0.00	0.00	0.00	0.00
11	Net Repayment of loan during the year	K=I-J	121.66	-	87.50	1,738.70	2,626.31	1,952.15
12	**Net Normative loan - Closing**	**L=H-K**	-	-	-	-	132.74	-
13	**Average Normative loan**	**M=Average(C,L)**	55.71	-	-	-	66.37	66.37
14	Weighted average rate of interest	N	10.610%	10.610%	10.610%	10.610%	10.610%	10.610%
15	**Interest on Loan**	**O=MxN**	**5.91**	**0.00**	**0.00**	**0.00**	**7.04**	**7.04**
15	Cumulative repayment of Normative loan at the end of the period	P=B+K	62,572.11	62,572.11	62,659.61	64,398.30	67,024.61	68,976.76

(Petitioner)

PART 1
FORM- O

Calculation of Interest on Working Capital

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	**2**	**3**	**4**	**5**		**6**	**8**
1	Cost of Coal/Lignite	3,103.03	8410.16	8410.16	8410.16	8410.16	8410.16
2	Cost of Main Secondary Fuel Oil	107.40	106.32	106.32	106.32	106.62	106.32
3	Fuel Cost						
4	Liquid Fuel Stock						
5	O & M Expenses	815.27	877.28	908.83	946.56	986.70	1029.27
6	Maintenance Spares	1,956.66	2105.47	2181.19	2271.75	2368.08	2470.24
7	Receivables	5,110.38	10137.85	10188.31	10280.25	10399.16	10518.67
8	Total Working Capital	11092.74	21637.10	21794.82	22015.05	22270.73	22534.66
9	Rate of Interest	12.00%	11.90%	11.90%	11.90%	11.90%	11.90%
10	**Interest on Working Capital**	**1331.13**	**2574.81**	**2593.58**	**2619.79**	**2650.22**	**2681.62**

Petitioner

Summary of issue involved in the petition						PART 1 FORM-T
Name of the Company :		**NTPC Limited**				
Name of the Power Station :		**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**				
1	**Petitioner:**	**NTPC Limited**				
2	**Subject**	**Determination of Tariff for 2024-29 period**				
3	**Prayer:** i)Approve tariff of Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW) for the tariff period 01.04.2024 to 31.03.2029. ii)Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries. iii)Approve supplementary tariff for Feroze Gandhi Unchahar Thermal Power Station Stage-III (210 MW) on installation of Emission Control System for controlling Nox emissions. iv)Allow reimbursement of Ash Transportation Charges directly from the beneficiaries on monthly basis, subject to true up. v)Grant liberty to approach the Hon'ble Commission to allow for the recovery of pay/wage revision due in 2024-29 period as additional O&M over and above the normative O&M. vi)Pass any other order as it may deem fit in the circumstances mentioned above.					
4	**Respondents**					
	Name of Respondents					
	1. Uttar Pradesh Power Corp. Ltd. (UPPCL)					
	2. Rajasthan Urja Vikas Nigam Limited (RUVNL)					
	3. Tata Power Delhi Distribution Limited					
	4. BSES Rajdhani Power Limited.					
	5. BSES Yamuna Power Limited,					
	6. Haryana Power Purchase Centre					
	7. Punjab State Power Corporation Limited,					
	8. Himachal Pradesh State Electricity Board Limited,					
	9. Power Development Department (J&K)					
	10. Electricity Department, Union Territory of Chandigarh					
	11. Uttarakhand Power Corporation Limited.					
5	**Project Scope**					
	Capital Cost as on 01.04.2024 (Rs. Lakh)	**98538.23**				
	Date of Station COD	**01-01-2007**				
	Claim (Rs Lakh)	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
	AFC	**20197.12**	**20606.35**	**21352.10**	**22377.76**	**23285.99**
	Capital Cost	**89388.73**	**89513.73**	**91997.58**	**95939.08**	**98538.23**
	Initial spare	**N/A**				
	NAPAF (Gen)	**85%**				
	Any Specific					

Petitioner

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

APPENDIX-IA

SUPPLEMENTARY TARIFF FILING FORMS (THERMAL)

FOR APPROVAL OF SUPPLEMENTARY TARIFF OF

Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)

(From 01.04.2024 to 31.03.2029)

Checklist of Main Tariff Forms and other information for supplementary tariff filing for Thermal Stations		
Form No.	**Title of Tariff Filing Forms (Thermal)**	**Tick**
FORM- 1	Summary of Supplementary Tariff	✓
FORM -1 (I)	Statement showing claimed capital cost	✓
FORM -1 (II)	Statement showing Return on Equity	✓
FORM-2	Plant Characteristics	✓
FORM-3	Normative parameters considered for tariff computations	✓
FORM-3A	Statement showing O&M Expenses	✓
FORM- 4	Details of Foreign loans	**NA**
FORM- 4A	Details of Foreign Equity	**NA**
FORM-5	Abstract of Admitted Capital Cost for the existing Projects	**NA**
FORM- 6	Financial Package upto COD	**NA**
FORM- 7	Details of Project Specific Loans	**NA**
FORM- 8	Details of Allocation of corporate loans to various projects	**NA**
FORM-9A	Summary of Statement of Additional Capitalisation claimed during the period	✓
FORM-9	Statement of Additional Capitalisation after COD	✓
FORM- 10	Financing of Additional Capitalisation	**NA**
FORM- 11	Calculation of Depreciation on original project cost	✓
FORM- 12	Statement of Depreciation	✓
FORM- 13	Calculation of Weighted Average Rate of Interest on Actual Loans	***
FORM- 14	Draw Down Schedule for Calculation of IDC & Financing Charges	***
FORM- 15	Details of Fuel for Computation of Energy Charges	**NA**
FORM- 16	Details of Reagent for Computation of Energy Charge Rate	**NA**
FORM-17	Details of Capital Spares	***
FORM- 18	Non-Tariff Income	**NA**
FORM-19	Details of Water Charges	**NA**
FORM-20	Details of Statutory Charges	**NA**
		PART-I

List of Supporting Forms / documents for supplementary tariff filing for Thermal Stations		
Form No.	**Title of Tariff Filing Forms (Thermal)**	**Tick**
FORM-A	Abstract of Capital Cost Estimates	**NA**
FORM-B	Break-up of Capital Cost for Coal/Lignite based projects	**NA**
FORM-C	Break-up of Capital Cost for Gas/Liquid fuel based Projects	**NA**
FORM-D	Break-up of Construction/Supply/Service packages	**NA**
FORM-E	Details of variables , parameters , optional package etc. for New Project	**NA**
FORM-F	Details of cost over run	**NA**
FORM-G	Details of time over run	**NA**
FORM –H	Statement of Additional Capitalisation during end of the useful life	**NA**
FORM –I	Details of Assets De-capitalised during the period	***
FORM –J	Reconciliation of Capitalisation claimed vis-à-vis books of accounts	***
FORM –K	Statement showing details of items/assets/works claimed under Exclusions	***
FORM-L	Statement of Capital cost	✓
FORM-M	Statement of Capital Woks in Progress	✓
FORM-N	Calculation of Interest on Normative Loan	✓
FORM-O	Calculation of Interest on Working Capital	✓
FORM-Oi	Additional Form	✓
FORM-P	Incidental Expenditure up to SCOD and up to Actual COD	**NA**
FORM-Q	Expenditure under different packages up to SCOD and up to Actual COD	**NA**
FORM-R	Actual cash expenditure	**NA**
FORM-S	Statement of Liability flow	***
FORM-T	Summary of issues involved in the petition	✓
***	Shall be provided at the time of truing up	

PART-I

FORM- 1

Summary of Supplementary Tariff (DeNOx System)

Name of the Petitioner:	**NTPC Ltd.**
Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**

Amount in Rs. Lakhs

S. No.	Particulars	Unit	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	5	5	5	6
1.1	Depreciation	Rs Lakh	21.80	22.17	22.17	22.17	22.17	22.17
1.2	Interest on Loan	Rs Lakh	26.69	24.87	22.52	20.17	17.81	15.46
1.3	Return on Equity	Rs Lakh	15.76	16.02	16.02	16.02	16.02	16.02
1.4	Interest on Working Capital	Rs Lakh	1.22	1.39	1.38	1.37	1.36	1.36
1.5	O&M Expenses	Rs Lakh	8.82	9.28	9.77	10.28	10.82	11.39
	Total	Rs Lakh	**74.29**	**73.73**	**71.86**	**70.01**	**68.18**	**66.40**

(Petitioner)

							PART-I
							FORM- 1(I)
Name of the Petitioner:		**NTPC Ltd.**					
Name of the Generating Station:		**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**					
							Amount in Rs. Lakhs
Statement showing claimed capital cost							
S. No.	**Particulars**	**Existing 2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**	**3**	**3**	**4**	**5**	**5**	**5**
1	Opening Capital Cost	406.07	419.79	419.79	419.79	419.79	419.79
2	Add: Addition during the year/period	13.72	-	-	-	-	-
3	Less: De-capitalisation during the year/period	-	-	-	-	-	-
4	Less: Reversal during the year / period	-	-	-	-	-	-
5	Add: Discharges during the year/ period	-	-	-	-	-	-
6	Closing Capital Cost	419.79	419.79	419.79	419.79	419.79	419.79
7	**Average Capital Cost**	**412.93**	**419.79**	**419.79**	**419.79**	**419.79**	**419.79**
Statement showing claimed capital cost eligible for RoE at normal rate (A)							
S. No.	**Particulars**	**Existing 2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**	**3**	**3**	**4**	**5**	**5**	**5**
1	Opening Capital Cost	-	-	-	-	-	-
2	Add: Addition during the year / period	-	-	-	-	-	-
3	Less: De-capitalisation during the year / period	-	-				
4	Less: Reversal during the year / period	-	-				
5	Add: Discharges during the year / period	-	-	-	-	-	-
6	Closing Capital Cost	0.00	0.00	0.00	0.00	0.00	0.00
7	**Average Capital Cost**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

PART-I

FORM- 1(I)

Name of the Petitioner:	**NTPC Ltd.**
Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**

Statement showing claimed capital cost eligible for RoE at rate linked to SBI MCLR (B)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	3	4	5	5	5
1	Opening Capital Cost	406.07	419.79	419.79	419.79	419.79	419.79
2	Add: Addition during the year / period	13.72	-	-	-	-	-
3	Less: De-capitalisation during the year / period						
4	Less: Reversal during the year / period						
5	Add: Discharges during the year / period	-	-	-	-	-	-
6	Closing Capital Cost	419.79	419.79	419.79	419.79	419.79	419.79
7	**Average Capital Cost**	**412.93**	**419.79**	**419.79**	**419.79**	**419.79**	**419.79**

(Petitioner)

PART-I
FORM- 1(IIA)

Statement showing Return on Equity at Normal Rate

	Name of the Petitioner:	**NTPC Ltd.**					
	Name of the Generating Station:	**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**					
							Amount in Rs. Lakhs
S. No.	**Particulars**	**Existing 2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**	**3**	**3**			**4**	**5**
	Return on Equity						
1	Gross Opening Equity (Normal)	121.82	125.94	125.94	125.94	125.94	125.94
2	Less: Adjustment in Opening Equity						
3	Adjustment during the year						
4	Net Opening Equity (Normal)	**121.82**	**125.94**	**125.94**	**125.94**	**125.94**	**125.94**
5	Add: Increase in equity due to addition during the year / period	4.12	-	-	-	-	-
7	Less: Decrease due to De-capitalisation during the year / period	-	-	-	-	-	-
8	Less: Decrease due to reversal during the year / period	-	-	-	-	-	-
9	Add: Increase due to discharges during the year / period	-	-	-	-	-	-
10	Net closing Equity (Normal)	**125.94**	**125.94**	**125.94**	**125.94**	**125.94**	**125.94**
11	Average Equity (Normal)	123.88	125.94	125.94	125.94	125.94	125.94
12	Rate of ROE (%)	12.723%	12.723%	12.723%	12.723%	12.723%	12.723%
13	Total ROE	**15.76**	**16.02**	**16.02**	**16.02**	**16.02**	**16.02**

(Petitioner)

	PART-I
	FORM-2
Plant Characteristics	
Name of the Petitioner	**NTPC Ltd.**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**
Unit(s)/Block(s)/Parameters	**Unit-I**
Installed Capacity (MW)	210
Environmental Regulation related features	Combustion Modification Package for controlling NOx emissions
Reagent	NA
Date of Operation for Tariff (ODe)	31-12-2021
Auxiliary Energy Consumption for emission control system (Design) (kW)	NA
(PETITIONER)	

Part-I
Form-3

Normative parameters considered for supplementary tariff computations

Name of the Petitioner:	NTPC Ltd.						
Name of the Generating Station:	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)						
(Year Ending March)							
Particulars	**Unit**	**Existing 2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**	**6**	**6**	**6**	**6**	**6**	**6**
Base Rate of Return on Equity	%	10.50%	10.50%	10.50%	10.50%	10.50%	10.50%
Effective Tax Rate	%	17.472%	17.472%	17.472%	17.472%	17.472%	17.472%
Target Availability							
Peak Hours		85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Off-Peak Hours		85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Auxiliary Energy Consumption	%	9.00	9.00	9.00	9.00	9.00	9.00
Auxiliary Energy Consumption for emission control system (Design)	%	Nil	Nil	Nil	Nil	Nil	Nil
Rate of Interest on Working Capital	%	12.00%	11.90%	11.90%	11.90%	11.90%	11.90%
O&M Expenses	% of Cap Cost	2	2	2	2	2	2
Maintenance Spares for WC	% of O&M	20.00%	20.00%	20.00%	20.00%	20.00%	20.00%
Receivables for WC	in Days	45	45	45	45	45	45

Units	**Date from which tariff is claimed**
Unit-I	31-12-2021

Petitioner

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

Part-I
FORM-3A
ADDITIONAL FORM

Calculation of O&M Expenses

Name of the Company :	**NTPC Ltd.**
Name of the Power Station :	**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**

Amount in Rs. Lakhs

S.No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	**O&M expenses under Reg.35(1)(7)**						
1a	Normative O&M expenses- ECS	8.82	9.28	9.77	10.28	10.82	11.39
	Total O&M Expenses	**8.82**	**9.28**	**9.77**	**10.28**	**10.82**	**11.39**

(Petitioner)

PART-I

FORM- 9A

Additional Form

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Ltd.
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III
For Financial Year	2024-29 Summary

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)				
		2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Combustion Modification System Unit 1	-	-	-	-	-
Total Add Cap		**-**	**-**	**-**	**-**	**-**
2	Discharge of Liabilities	-	-	-	-	-
Total Add. Cap. Claimed including discharge of liabilities		**-**	**-**	**-**	**-**	**-**

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Ltd.
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)
For Financial Year	2024-25

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Note-2 of BS	IND AS Adj	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
1	NA	-	-	-	-	-	-	NA	NA	Nil
	Total			-	-	-	-			

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Ltd.
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)
For Financial Year	2025-26

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Note-2 of BS	IND AS Adj	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
1	NA	-	-	-	-	-	-	NA	NA	Nil
	Total			-	-	-	-			

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Ltd.
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)
For Financial Year	2026-27

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Note-2 of BS	IND AS Adj	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
1	NA	-	-	-	-	-	-	NA	NA	Nil
	Total			-	-	-	-			

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Ltd.
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)
For Financial Year	2027-28

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Note-2 of BS	IND AS Adj	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
1	NA	-	-	-	-	-	-	NA	NA	Nil
	Total			-	-	-	-			

(Petitioner)

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Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Ltd.
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)
For Financial Year	2028-29

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Note-2 of BS	IND AS Adj	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3A	3B	3	4	5= (3-4)	6	7	8	9
1	NA	-	-	-	-	-	-	NA	NA	Nil
	Total			-	-	-	-			

(Petitioner)

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Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- 11

Calculation of Depreciation

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Feroze Gandhi Unchahar Thermal Power Station Sta**

Amount in Rs Lakh

Sl.No.	Name of the Assets1	Depreciation Rates as per CERC's Depreciation Rate Schedule	Gross Block as on 01.04.2024	Depreciation
1	Land-Free Hold	0.00%		0.00
2	Plant & Machinary	5.28%	482.96	25.50
3	Cooling Towers & CW System.	5.28%		0.00
4	Air conditioning	5.28%		0.00
5	Chimney	5.28%		0.00
6	Main Plant Building	3.34%		0.00
7	Ash Dyke/Disposal Area	5.28%		0.00
8	S-Yard	5.28%		0.00
9	Raw Water Reservoir	5.28%		0.00
10	MGR & Wagons	5.28%		0.00
11	Locomotive	9.50%		0.00
12	Residential Building	3.34%		0.00
13	WaterTreatment Plant	5.28%		0.00
14	Spares	5.28%		0.00
15	Furniture & Fixtures,OFFICE EQUIPMENT	6.33%		0.00
16	Other MBOAs / T&Ps.	6.33%		0.00
17	EDP,WP & SATCOM.	15.00%		0.00
18	Construction equipment	5.28%		0.00
19	Temp.Constructions	100.00%		0.00
20	Central Repair/Workshop	5.28%		0.00
21	Road/Bridge	3.34%		0.00
22	Software	15.00%		0.00
23	Water Supply drainage	5.28%		0.00
24	5 Km Scheme	5.28%		0.00
25	Hospital Equipment	5.28%		0.00
26	Vehicle	9.50%		0.00
	Total		482.96	25.50
	Weighted Average Rate of Depreciation (%)			5.28%

Petitioner

PART-I
FORM- 12

Statement of Depreciation

Name of the Company :	**NTPC Ltd.**
Name of the Power Station :	**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	6	6	6	6	6	6
	No of Days in the period	366	366	366	366	366	366
	No of Days in the year	366	366	366	366	366	366
1	Opening Capital Cost	406.07	419.79	419.79	419.79	419.79	419.79
2	Closing Capital Cost	419.79	419.79	419.79	419.79	419.79	419.79
3	Average Capital Cost	412.93	419.79	419.79	419.79	419.79	419.79
1a	Cost of IT Equipments & Software included in (1) above*	-	-	-	-	-	-
2a	Cost of IT Equipments & Software included in (2) above*	-	-	-	-	-	-
3a	Average Cost of IT Equipments & Software*	-	-	-	-	-	-
4	Freehold land	-	-	-	-	-	-
5	Rate of depreciation (%)	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%
6	Depreciable value	**371.64**	**377.81**	**377.81**	**377.81**	**377.81**	**377.81**
7.	Balance useful life for depreciation calculation						
8	Remaining depreciable value	345.08	329.45	307.29	285.12	307.29	285.12
9	Depreciation (for the period)	21.80	22.17	22.17	22.17	22.17	22.17
10	Depreciation (annualised)	**21.80**	**22.17**	**22.17**	**22.17**	**22.17**	**22.17**
11	Cumulative depreciation at the end of the period	48.36	70.53	92.69	114.86	92.69	114.86
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009	-	-	-	-	-	-
13	Add: Cumulative depreciation adjustment on account of liability Discharge	-	-	-	-	-	-
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	-	-	-	-	-	-
12	Net Cumulative depreciation at the end of the period after adjustments	48.36	70.53	92.69	114.86	92.69	114.86

(Petitioner)

						Form 13
Name of the Petitioner		**NTPC Limited**				
Name of the Generating Station		**Feroze Gandhi Unchahar Thermal Power Station, Stage-III**				
						(INR in Lakhs)
S No	**Loan**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
1	**LIC III Tr I D1**					
	Net loan - Opening	450.00	350.00	250.00	150.00	50.00
	Addition during the year					
	Repayments of Loans during the year	100.00	100.00	100.00	100.00	50.00
	Net loan - Closing	350.00	250.00	150.00	50.00	-
	Average Net Loan	400.00	300.00	200.00	100.00	25.00
	Rate of Interest on Loan	6.5868%	6.5868%	6.5868%	6.5868%	6.5868%
	Interest on loan	26.35	19.76	13.17	6.59	1.65
2	**PFC V T 1 D 22**					
	Net loan - Opening	1,041.67	-	-	-	-
	Addition during the year					
	Repayments of Loans during the year	1,041.67		-	-	-
	Net loan - Closing	-	-	-	-	-
	Average Net Loan	520.83	-	-	-	-
	Rate of Interest on Loan	7.7600%				
	Interest on loan	40.42	-	-	-	-
3	**Bonds XXI**					
	Net loan - Opening	450.00	-	-	-	-
	Addition during the year					
	Repayments of Loans during the year	450.00	-	-	-	-
	Net loan - Closing	-	-	-	-	-
	Average Net Loan	225.00	-	-	-	-
	Rate of Interest on Loan	7.7425%				
	Interest on loan	17.42	-	-	-	-
4	**Bonds XXII Series**					
	Net loan - Opening	200.00	100.00	-	-	-
	Addition during the year					
	Repayments of Loans during the year	100.00	100.00	-	-	-
	Net loan - Closing	100.00	-	-	-	-
	Average Net Loan	150.00	50.00	-	-	-
	Rate of Interest on Loan	8.2071%	8.2071%			
	Interest on loan	12.31	4.10	-	-	-
5	**Bonds XXIII Series**					
	Net loan - Opening	40.00	20.00	-	-	-
	Addition during the year					
	Repayments of Loans during the year	20.00	20.00	-	-	-
	Net loan - Closing	20.00	-	-	-	-
	Average Net Loan	30.00	10.00	-	-	-
	Rate of Interest on Loan	8.4096%	8.4096%			
	Interest on loan	2.52	0.84	-	-	-
6	**Bonds XXVII Series**					
	Net loan - Opening	1,500.00	1,200.00	900.00	600.00	300.00
	Addition during the year					
	Repayments of Loans during the year	300.00	300.00	300.00	300.00	300.00
	Net loan - Closing	1,200.00	900.00	600.00	300.00	-
	Average Net Loan	1,350.00	1,050.00	750.00	450.00	150.00
	Rate of Interest on Loan	11.2800%	11.2800%	11.2800%	11.2800%	11.2800%
	Interest on loan	152.28	118.44	84.60	50.76	16.92
	Total Loans					
	Net loan - Opening	3,681.67	1,670.00	1,150.00	750.00	350.00
	Addition during the year	-	-	-	-	-
	Repayments of Loans during the year	2,011.67	520.00	400.00	400.00	350.00
	Net loan - Closing	1,670.00	1,150.00	750.00	350.00	-
	Average Net Loan	2,675.83	1,410.00	950.00	550.00	175.00
	Rate of Interest on Loan	9.39139%	10.15212%	10.29196%	10.42669%	10.60954%
	Interest on loan	251.30	143.14	97.77	57.35	18.57

Note:-

1) LIC III Rate of interest includes upfront fees of 0.0158% (i.e. 0.20%*1.103%/14years).

PART-I
FORM- L

Statement of Capital cost

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)
ODe	31-12-2021
For Financial Year	2024-29

(Rs Lakh)

Sl. No.	Particulars	2024-25			2025-26			2026-27			2027-28			2028-29		
		Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening Gross Block Amount as per books	482.96	67.32	415.64	SHALL BE PROVIDED AT TRUE-UP											
	b) Amount of IDC in A(a) above	-	-	-												
	c) Amount of FC in A(a) above	-	-	-												
	d) Amount of FERV in A(a) above	-	-	-												
	e) Amount of Hedging Cost in A(a) above	-	-	-												
	f) Amount of IEDC in A(a) above	-	-	-												
B	a) Addition in Gross Block Amount during the period (Direct purchases)	SHALL BE PROVIDED AT TRUE-UP														
	b) Amount of IDC in B(a) above															
	c) Amount of FC in B(a) above															
	d) Amount of FERV in B(a) above															
	e) Amount of Hedging Cost in B(a) above															
	f) Amount of IEDC in B(a) above															
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)															
	b) Amount of IDC in C(a) above															
	c) Amount of FC in C(a) above															
	d) Amount of FERV in C(a) above															
	e) Amount of Hedging Cost in C(a) above															
	f) Amount of IEDC in C(a) above															
D	a) Deletion in Gross Block Amount during the period															
	b) Amount of IDC in D(a) above															
	c) Amount of FC in D(a) above															
	d) Amount of FERV in D(a) above															
	e) Amount of Hedging Cost in D(a) above															
	f) Amount of IEDC in D(a) above															
E	a) Closing Gross Block Amount as per books															
	b) Amount of IDC in E(a) above															
	c) Amount of FC in E(a) above															
	d) Amount of FERV in E(a) above															
	e) Amount of Hedging Cost in E(a) above															
	f) Amount of IEDC in E(a) above															

(Petitioner)

Signature Not Verified

Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I
FORM- M

Statement of Capital Works in Progress

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)
COD	31-12-2021
For Financial Year	2024-29

(Rs Lakh)

Sl. No.	Particulars	2024-25			2025-26			2026-27			2027-28			2028-29		
		Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis	Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening CWIP as per books	-	-	-	SHALL BE PROVIDED AT TRUE-UP											
	b) Amount of IDC in A(a) above	-	-	-												
	c) Amount of FC in A(a) above	-	-	-												
	d) Amount of FERV in A(a) above	-	-	-												
	e) Amount of Hedging Cost in A(a) above	-	-	-												
	f) Amount of IEDC in A(a) above	-	-													
B	a) Addition in CWIP during the period	SHALL BE PROVIDED AT TRUE-UP														
	b) Amount of IDC in B(a) above															
	c) Amount of FC in B(a) above															
	d) Amount of FERV in B(a) above															
	e) Amount of Hedging Cost in B(a) above															
	f) Amount of IEDC in B(a) above															
C	a) Transferred to Gross Block Amount during the period															
	b) Amount of IDC in C(a) above															
	c) Amount of FC in C(a) above															
	d) Amount of FERV in C(a) above															
	e) Amount of Hedging Cost in C(a) above															
	f) Amount of IEDC in C(a) above															
D	a) Deletion in CWIP during the period															
	b) Amount of IDC in D(a) above															
	c) Amount of FC in D(a) above															
	d) Amount of FERV in D(a) above															
	e) Amount of Hedging Cost in D(a) above															
	f) Amount of IEDC in D(a) above															
	Discharge of Liability															
E	a) Closing CWIP as per books															
	b) Amount of IDC in E(a) above															
	c) Amount of FC in E(a) above															
	d) Amount of FERV in E(a) above															
	e) Amount of Hedging Cost in E(a) above															
	f) Amount of IEDC in E(a) above															

(Petitioner)

Signature Not Verified
Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

PART-I

FORM-N

Calculation of Interest on Normative Loan

Name of the Company : NTPC Ltd.

Name of the Power Station : Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3		6	6	5	6
1	Gross Normative loan – Opening	284.25	293.86	293.86	293.86	293.86	293.86
2	Cumulative repayment of Normative loan up to previous year	26.56	48.36	70.53	92.69	114.86	137.02
3	**Net Normative loan – Opening**	**257.69**	**245.49**	**223.33**	**201.16**	**179.00**	**156.83**
4	Add: Increase due to addition during the year / period	9.61	-	-	-	-	-
5	Less: Decrease due to de-capitalisation during the year / period	-	-	-	-	-	-
6	Less: Decrease due to reversal during the year / period	-	-	-	-	-	-
7	Add: Increase due to discharges during the year / period	-	-	-	-	-	-
8	Less: Repayment of Loan	21.80	22.17	22.17	22.17	22.17	22.17
9	**Net Normative loan - Closing**	**245.49**	**223.33**	**201.16**	**179.00**	**156.83**	**134.67**
10	**Average Normative loan**	251.59	234.41	212.24	190.08	167.91	145.75
11	Weighted average rate of interest	10.6095%	10.6095%	10.6095%	10.6095%	10.6095%	10.6095%
12	**Interest on Loan**	**26.69**	**24.87**	**22.52**	**20.17**	**17.81**	**15.46**

(Petitioner)

PART 1
FORM- O

Calculation of Interest on Working Capital

Name of the Company :	**NTPC Ltd.**
Name of the Power Station :	**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**

(Amount in Rs Lakh)

S. No.	Particulars		Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2		4	4	5	6	6	6
	No of days		366	365	365	365	366	365
1	Cost of Limestone/Reagent toward stock	**20 days**	-	-	-	-	-	-
2	Cost of Limestone/Reagent toward generation	**30 days**	-	-	-	-	-	-
3	Receivables	**45 days**	9.13	9.09	8.86	8.63	8.38	8.19
4	O & M Expenses	**1 month**	0.73	0.77	0.81	0.86	0.90	0.95
5	Maintenance Spares	**@20%**	1.76	1.86	1.95	2.06	2.16	2.28
6	Total Working Capital	**Rs. Lakh**	11.63	11.72	11.63	11.54	11.45	11.41
7	Rate of Interest	**%**	12.00%	11.90%	11.90%	11.90%	11.90%	11.90%
8	**Interest on Working Capital**	**Rs. Lakh**	**1.40**	**1.39**	**1.38**	**1.37**	**1.36**	**1.36**

Petitioner

Form-O(i)

ADDITIONAL FORM

Name of the Company	**NTPC Ltd.**
Name of the Power Station	**ɔze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (**

(Amount in Rs Lakh)

SN	Particulars	Unit	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	Auxiliary consumption	%	9.00	9.00	9.00	9.00	9.00	9.00
2	Additional Auxiliary Power Consumption (ECS)	%	0.00	0.00	0.00	0.00	0.00	0.00
3	Specific Reagent Consumption (kg/kwh)	kg/kwh						
4	Landed Cost of Reagent (Rs/MT)	Rs/MT	-	-	-	-	-	-
5	Supplementary Energy Charge (Rs/kwh)	Rs/kwh	-	-	-	-	-	-
6	Installed Capacity	MW	210	210	210	210	210	210
7	No of Days in the year	Days	365	365	365	365	365	366
8	ESO in 1 Day	MU	3.90	3.90	3.90	3.90	3.90	3.90
9	Cost of Reagent consumed in a day	Rs Lakh	-	-	-	-	-	-

PETITIONER

PART 1
FORM-T

Summary of issue involved in the petition

Name of the Company :		**NTPC Ltd.**
Name of the Power Station :		**Feroze Gandhi Unchahar Thermal Power Station Stage-III ECS-De NOX (CM)**
1	**Petitioner:**	**NTPC Ltd.**
2	**Subject**	**Determination of Supplementary Tariff (for DeNOx System) for 2024-29 period**
3	**Prayer:** i)Approve Supplementary Tariff of Unchahar Stage-III ECS De-Nox (CM) for the tariff period from 01.04.2024 to 31.03.2029. iii) Pass any other order as it may deem fit in the circumstances mentioned above.	
4	**Respondents**	
	Name of Respondents	
	1. Uttar Pradesh Power Corp. Ltd. (UPPCL)	
	2. Rajasthan Urja Vikas Nigam Limited (RUVNL)	
	3. Tata Power Delhi Distribution Limited	
	4. BSES Rajdhani Power Limited.	
	5. BSES Yamuna Power Limited,	
	6. Haryana Power Purchase Centre	
	7. Haryana Power Purchase Centre	
	8. Himachal Pradesh State Electricity Board Limited,	
	9. Power Development Department	
	10. Electricity Department of Chandigarh	
	11. Uttarakhand Power Corporation Limited,	
5	**Project Scope**	
	Cost	**419.79**
	Commissioning	
	Claim	**419.79**
	AFC (2023-24)	**66.40**
	Capital cost	**419.79**
	Initial spare	**-**
	NAPAF (Gen)	**85%**
	Any Specific	**-**

Signature Not Verified

Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

(Petitioner)

Attachment 4:-Obsolesence certificate

Life Is On | Schneider Electric

ANNEXURE-R1

To

Dear Valued Customer,

Subject: **Evolution of M580 and End of Commercialization of Quantum & Premium from 2019.**

Over the past 20 years, technological advancements in industrial automation offer high performance processors with more memory, better performance, and enhanced capabilities. In plant environments those capabilities lead to increased productivity, efficiency, security and sustainability. Schneider Electric has taken full advantage of these technological advancements providing you with a PLC which addresses your needs now and into the future.

This letter serves as evolution (End of commercialization) of Modicon controller Quantum & Premium (Launched in 1996) to latest state of art M580 control system (Launched in 2014) world first ePAC and end of commercialization of Quantum & Premium controllers from the year 2019, from 2019 Quantum & Premium will move to service mode not available as off the shelf product.

Important information about the future of our Modicon range of processors

We have a great opportunity to take advantage of these new technologies, which is why we have developed the Modicon M580 ePAC. Introduced early 2013, this latest generation of Programmable Automation Controller has been designed to replace the Quantum range in the coming years.

The new product evolution is based on M580 and is awarded "Engineers Choice award" by Control Engineering for two years (2015, 2016).

Schneider Electric is committed to providing the highest quality products and on time service to our customer. We understand that technology evolution allows our customers to establish and maintain competitive advantages, achieve operational efficiencies. We view product end of commercialization as part of life cycle that drives new technology and product innovation. End of commercialization for Quantum & Premium CPU was Main reasons for making Modicon Quantum & Premium Obsolete:

- Modicon Quantum & Premium offer does not meet anymore latest automation trends, such as cybersecurity, connectivity, and agility.
- Solution competitiveness compared to our competitors in terms of processing power, memory, and decentralized architectures.
- Technology obsolescence is also one driver to stop the commercialization: we are facing more and more component obsolescence on the entire range, that is forcing us to redesign many electronically boards with latest technologies, keeping our R&D busy on that obsolete range.
- Rationalize our portfolio to offer a simpler catalog to our customers, with only one controller family Mx80 range.

For all above reasons, we have launched in 2014 the new M580 ePAC controller, for higher performance and sustainability, designed to best fit latest trends.

Modicon M580 addresses your needs now and into the future
We have a great opportunity to take advantage of the newest technologies, which is why we have developed the Modicon M580 ePAC. Introduced early 2013, this latest generation of Programmable Automation Controller has been

designed to replace the Quantum and Premium ranges in the coming years. We strongly recommend you take this opportunity to consider M580 for any on-going or future projects as well as our services offers to ease the transition. Awarded the 2015 Engineers' Choice by Control Engineering, the Modicon M580 is one of the highest performance processors in the industry with increased power and greater connectivity. We understand the importance of having an open yet secure processor.

Major benefits of the M580 are

- Speed 5X compared to the Quantum & Premium.
- Cyber Secured system as per IEC62443 standard.
- 8 X programming Memory.
- High level of transparency without loading the controller.
- High Speed HSBY link – 1 GBPS with selectable media fiber optic/SFTP,
- In rack wifi and RSTP switch
- Time stamping of 10ms available by default at the I/O level
- High level I/O module diagnostics
- Supports FDT/DTM technology
- Form factor is less than 2/3rd of Quantum & Premium lesser space needed for same I/O.
- Change of configuration without stopping the process (More agile). Customer can add racks or modules
- without stopping the process.
- Single range I/O for M580 and M340 reducing the inventory cost of the customer. X80 I/O are used in both local as well remote/distributed architecture. X80 I/O are of same range (BM*****) as M580.
- The Modicon M580 has cyber security built into its core and third-party security certifications giving you peace of mind that your processors have been extensively tested against malware. The increased capabilities of the Modicon M580 help you improve operational efficiency and maintenance for the life of your control systems.

Your transition is easy

We have developed a range of tools and technologies to make it easy for customers to upgrade from our legacy CPUs to our newest technologies. With more than 20 years of experience, we provide you with an easy, step by step upgrade path to our latest platforms. We have worked hard to make sure the M580 will make the most of your existing assets. It minimizes the time and cost it takes to upgrade due to its compatibility with existing Quantum and Premium I/O and there are software utilities to import your existing application programs into Unity Pro. The M580 platform is designed to continue leveraging the ranges benefits to aid in your future upgrade plans.

For more understanding and implementation, we are attaching the documents about migration guidelines for Quantum, Premium platform to M580 platform and its benefits along with this letter.

M580 is our latest flagship Controllers to meet today's versatile automation control needs. This range represents Schneider electric – Modicon's controls today and tomorrow. We will have more and more investment on this platform with M580 Safety SIL3 controllers, etc.

Schneider Electric India Pvt Ltd

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DLF Cyber City Phase II Schneider Electric
Gurugram- 122002 India

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D +91 124 39404000

Customer Care 1800 [illegible] 1/1800 [illegible] 94272

ANNEXURE-R2

Windows XP

Windows XP follows the Fixed Lifecycle Policy.

This applies to the following editions: Home, Professional, Professional for Embedded Systems, Professional x64, Starter

> **Important**
>
> Support for this product has ended. See migration guidance below.

Support dates are shown in the Pacific Time Zone (PT) - Redmond, WA, USA.

Support Dates

Listing	Start Date	Mainstream End Date	Extended End Date
Windows XP	Dec 31, 2001	Apr 14, 2009	Apr 8, 2014

Releases

Version	Start Date	End Date
Service Pack 3	Apr 21, 2008	Apr 8, 2014
Service Pack 2	Sep 17, 2004	Jul 13, 2010
Service Pack 1a	Feb 3, 2003	Oct 10, 2006
Service Pack 1	Aug 30, 2002	Oct 10, 2006
Original Release	Dec 31, 2001	Aug 30, 2005

Links

- Migration guidance
- Service pack policy

> **Note**
>
> The start date for Microsoft Windows XP Professional x64 Edition was April 24, 2005.

Editions

- Home
- Professional
- Professional for Embedded Systems
- Professional x64
- Starter

ANNEXURE-R3

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
सूचना प्रौद्योगिकी एवं साइबर सुरक्षा प्रभाग
Information Technology & Cyber Security Division
****

विषय : CEA (Cyber Security in Power Sector) Guidelines, 2021.

CEA is mandated to prepare 'Guidelines on Cyber Security' in Power Sector under the provision of regulation (10) of the Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019. Guidelines on Cyber Security in Power Sector incorporating the cardinal principles has been prepared by CEA. In compliance to the provision of the above regulation, **CEA (Cyber Security in Power Sector) Guidelines, 2021** are issued for compliance by all entities listed in the clause 2.3 (Applicability of the Guidelines) of the guidelines.

Encl: Guidelines on Cyber Security

07/10/21
(V.K Mishra)
Secretary CEA

CEA (Cyber Security in Power Sector) Guidelines, 2021

1.0 Background

1.1 Cyber intrusion attempts and Cyber-attacks in any critical sector are carried out with a malicious intent. In Power Sector it's either to compromise the Power Supply System or to render the grid operation in-secure. Any such compromise, may result in mal-operations of equipments, equipment damages or even in a cascading grid brownout/blackout. The much hyped air gap myth between IT and OT Systems now stands shattered. The artificial air gap created by deploying firewalls between any IT and OT System can be jumped by any insider or an outsider through social engineering. Cyber-attacks are staged through tactics & techniques of Initial Access, Execution, Persistence, Privilege Escalation, Defence Evasion, Command and Control, Exfiltration. After gaining the entry inside the system through privilege escalation, the control of IT network and operations of OT systems can be taken over even remotely by any cyber adversary. The gain of sensitive operational data through such intrusions may help the Nation/State sponsored or non-sponsored adversaries and cyber attackers to design more sinister and advanced cyber-attacks.

1.2 Government of India has set up the Indian Computer Emergency Response Team (CERT-In) for Early Warning and Response to cyber security incidents and to have collaboration at National and International level for information sharing on mitigation of cyber threats. CERT-In regularly issues advisories on safeguarding computer systems and publishes Security Guidelines which are widely circulated for compliances. All Central Government Ministries/ Departments and State/Union Territory Governments have been advised to conduct cyber security audit of their entire Cyber Infrastructure including websites at regular interval through CERT-In empanelled Auditors so as to identify gaps and appropriate corrective actions to be taken in cyber security practices. CERT-In extends supports to enable Responsible Entity in conducting cyber security mock drills and in assessment of their preparation to withstand cyber-attacks. The Responsible Entity must submit Reports of Cyber Audit of cyber security controls, architecture, vulnerability management, network security and periodic cyber security drills to sectoral CERT as well as CERT-In. Team of experts shall review these reports and shortcomings if any in the compliances shall be flagged by them. CERT-In on regular basis also conducts workshops and training programs to enhance Cyber awareness of all Stakeholders.

1.3 Ministry of Power has created 6(six) sectoral CERTs namely Thermal, Hydro, Transmission, Grid Operation, RE and Distribution for ensuring cyber security in Indian Power Sector. Each Sectoral CERT has prepared their sub-sector specific model Cyber Crisis Management Plan(C-CMP) for countering cyber-attacks and cyber terrorism. Each Sectoral CERT has circulated their model C-CMPs for preparation and implementation of organization specific C-CMP by each of their Constituent Utility.

1.4 All Responsible Entities, Service Providers, Equipment Suppliers/Vendors and Consultants engaged in Power Sector are equally responsible for ensuring cyber security of the Indian Power Supply System. They are to act timely upon each threat intelligence,

advisories and other inputs received from authenticated sources, for continuous improvement in their cyber security posture.

1.5 In the current Indian scenario though many cyber security directives and guidelines exists, but none of them are power sector specific. Ministry of Power has directed CEA to prepare Regulation on Cyber Security in Power Sector. And as an interim measures CEA has been directed to issue Guideline on Cyber Security in Power Sector, under the provision of Regulation 10 on Cyber Security in the "Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019".

1.6 The Guidelines on Cyber Security, in the form of Articles written below, requires mandatory Compliance by all Responsible Entities. The Guidelines shall come into effect from the date of issue by Central Electricity Authority, New Delhi.

2.0 Hereby the Guidelines on Cyber Security are drawn in the form of Articles for compliance by the Requester as well as User under the following provision of Regulation 10 on Cyber Security, in the "Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019".

"The requester and the user shall comply with cyber security guidelines issued by the Central Government, from time to time, and the technical standards for communication system in Power Sector laid down by the Authority."

2.1 **Objective of issuing Guideline**:

a) Creating cyber security awareness
b) Creating a secure cyber ecosystem,
c) Creating a cyber-assurance framework,
d) Strengthening the regulatory framework,
e) Creating mechanisms for security threat early warning, vulnerability management and response to security threats,
f) Securing remote operations and services,
g) Protection and resilience of critical information infrastructure,
h) Reducing cyber supply chain risks,
i) Encouraging use of open standards,
j) Promotion of research and development in cyber security,
k) Human resource development in the domain of Cyber Security,
l) Developing effective public private partnerships,
m) Information sharing and cooperation
n) Operationalization of the National Cyber Security Policy

2.2 Within the text of these Articles, '**Responsible Entity'** shall mean all:

a) Transmission Utilities as well as Transmission Licensees,
b) Load despatch centres (State, Regional and National),
c) Generation utilities (Hydro, Thermal, Nuclear, RE),
d) Distribution Utilities
e) Generation Aggregators,
f) Trading Exchanges,
g) Regional Power Committees, and
h) Regulatory Commissions.

2.3 **Applicability:**

All Responsible Entities as well as System Integrators, Equipment Manufacturers, Suppliers/Vendors, Service Providers, IT Hardware and Software OEMs engaged in the Indian Power Supply System.

2.4 **Scope:**

2.4.1 **Control Systems for System Operation and Operation Management.**

a) Grid Control and Management Systems,
b) Power Plant Control Systems,
c) Central Systems used to monitor and control of distributed generation and loads e.g. virtual power plants, storage management, central control rooms for hydroelectric plants, photovoltaic/wind power installations,
d) Systems for fault management and work force management,
e) Metering and measurement management systems,
f) Data archiving systems,
g) Parameterisation, configuration and programming systems,
h) Supporting systems required for operation of the above mentioned systems,

2.4.2 **Communication System.**

a) Routers switches and firewalls,
b) Communication technology-related network components,
c) Wireless digital systems.
d) Control Centre to Control Centre Communications for data exchange on ICCP. **(IEC 61850/60850-5/TASE.2/)**

2.4.3 **Secondary, Automation and Tele control technologies**

a) Control and Automation components,
b) Control and field devices,
c) Tele control devices,
d) Programmable logic controllers / Remote Terminal Units, including digital sensor and actuators elements,
e) Protection devices,
f) Safety components,
g) Digital measurement and metering installations,
h) Synchronisation devices,
i) Excitation Systems,

3.0 Definition of Terms:

1. **Access Management**: shall mean set of policies and procedures of the Responsible Entity for allowing Personnel, devices and IoT to securely perform a broad range of operational, maintenance, and asset management tasks either on site or remotely as laid down in Clause 5.2.5 of IS 16335.
2. **Accreditation:** shall mean the process of verifying that an organisation is capable of conducting the tests and assessments against a product/process that are required to be certified.

3. **Accreditation Body:** shall mean an organisation that has been accredited to verify the credentials and capabilities of the organisations that wish to become a certification body.
4. **Act:** shall mean the Information Technology Act, 2000 (21 of 2000)
5. **Asset**: shall mean anything that has value to the organization.
6. **Certification:** shall mean the process of verifying that a product has been manufactured in conformance with a set of predefined standards and/or regulations by an organisation, that is accredited to conduct the certification process
7. **Certification Body:** shall mean an organisation that has been accredited by an accreditation body to certify products / process against a certification scheme.
8. **Certification Scheme:** shall mean the processes, paperwork, tools, and documentation that define how a product or manufacturer is certified
9. **Chief Information Security Officer:** shall means the designated employee of Senior management level directly reporting to Managing Director/Chief Executive Officer/Secretary of the Responsible Entity, having knowledge of Information Security and related issues, responsible for cyber security efforts and initiatives including planning, developing, maintaining, reviewing and implementation of Information Security Policies
10. **Critical Assets:** shall mean the facilities, systems and equipment which, if destroyed, degraded or otherwise declared unavailable, would affect the reliability or operability of the Power Supply System.
11. **Critical System:** shall mean cyber assets essential to the reliable operation of critical asset. Critical System consists of those cyber assets that have at least one of the following characteristics:
    a) The cyber asset uses a routable protocol to communicate outside the electronic security perimeter.
    b) The cyber asset uses a routable protocol within a control centre.
    c) The cyber asset is dial-up accessible.
12. **Critical Information Infrastructure*:*** shall mean Critical Information Infrastructure as defined in explanation of sub-section (1) of Section 70 of the Act.
13. **Cyber Assets**: shall mean the programmable electronic devices, including the hardware, software and data in those devices that are connected over a network, such as LAN, WAN and HAN.
14. **Cyber Crisis Management Plan:** shall mean a framework for dealing with cyber related incidents for a coordinated, multi-disciplinary and broad-based approach for rapid identification, information exchange, swift response and remedial actions to mitigate and recover from malicious cyber related incidents impacting critical processes.
15. **Cyber Security Breach**: shall mean any cyber incident or cyber security violation that results in unauthorized or illegitimate access or use by a person as well as an entity, of data, applications, services, networks and/or devices through bypass of the underlying cyber security protocols, policies and mechanisms resulting in the compromise of the confidentiality, integrity or availability of data/information maintained in a computer resource or cyber asset.
16. **Cyber Security Incident:** shall mean any real or suspected adverse cyber security event that violates, explicitly or implicitly, cyber security policy of Responsible Entity resulting in unauthorized access, denial of service or disruption, unauthorized use of computer resource for processing or storage of information or changes to data or information

without authorization, leading to harm to the power grid or its critical sub-sectoral elements Generation, Transmission and Distribution.

17. **Cyber Security Policy:** shall mean documented set of business rules and processes for protecting information, computer resources, networks, devices, Industrial Control Systems and other OT resources.
18. **Electronic Security Perimeter:** shall mean the logical border surrounding a network to which the Cyber Systems of Power Supply System are connected using a routable protocol.
19. **Information Security Division:** shall mean a division accountable for cyber security and protection of the Critical System of the Responsible Entity.
20. **Protected System:** shall mean any computer, computer system or computer network of the Responsible Entity notified under section 70 of the Act, in the official gazette by appropriate Government.
21. **Security Architecture:** shall mean a framework and guidance to implement and operate a system using the appropriate security controls with the goal to maintain the system's quality attributes like confidentiality, integrity, availability, accountability and assurance.
22. **Vulnerability:** shall mean intrinsic properties of something resulting in susceptibility to a risk source that can lead to an event with a consequence
23. **Vulnerability Assessment:** shall mean a process of identifying and quantifying vulnerabilities

4.0 Standards

Reference	Description
ISO/IEC 15408	Common Criteria Certification Standard
ISO/IEC 17011	General requirements for accreditation bodies accrediting conformity assessment bodies
ISO/IEC 17025	General requirements for the competence of testing and calibration laboratories
ISO/IEC 21827	Systems Security Engineering - Capability Maturity Model (SSE-CMM)
ISO/IEC 24748-1	Systems and software engineering — Life cycle management — Part 1: Guidelines for life cycle management.
ISO 27001/2	Information Security Management
ISO/ IEC 27019	Information technology — Security techniques — Information Security controls for the energy utility industry
ISO/IEC 61508	Functional Safety of Electrical / Electronic / Programmable Electronic Safety-related Systems
IEC 61850	Communication networks and systems for power utility automation
IEC 62351	Standards for Securing Power System Communications
IEC 62443	Cyber Security for Industrial Control Systems
IS 16335	Power Control Systems – Security Requirements.

5.0 Abbreviations

Abbreviations		Description
a)	BES	Bulk Electric System

b)	CDAC	Centre for Development of Advanced Computing
c)	CEA	Central Electricity Authority
d)	CERC	Central Electricity Regulatory Commission
e)	CERT	Computer Emergency Response Team
f)	CERT-In	Indian Computer Emergency Response Team
g)	CII	Critical Information Infrastructure
h)	CISO	Chief Information Security Officer
i)	CSK	Cyber Swachhta Kendra
j)	COTS	Commercial off-the Shelf
k)	ESP	Electronic Security perimeter
l)	ICS	Industrial Control Systems
m)	ICT	Information and Communications Technology
n)	IEC	International Electro Technical Commission
o)	ISAC	Information Sharing and Analysis Centre
p)	ISD	Information Security Division
q)	ISO	International Organization for Standardization
r)	ISMS	Information Security Management System
s)	IT	Information Technology
t)	FAT	Factory Acceptance Test
u)	NABL	National Accreditation Board for Testing and Calibration Laboratories
v)	NCIIPC	National Critical Information Infrastructure Protection Centre
w)	NLDC	National Load Dispatch Centre
x)	NPTI	National Power Training Institute
y)	NSCS	National Security Council Secretariat
z)	OEM	Original Equipment Manufacturer
aa)	OT	Operational Technology
bb)	RLDC	Regional Load Dispatch Centres
cc)	SAT	Site Acceptance Test
dd)	SERC	State Electricity Regulatory Commission
ee)	SCADA	Supervisory Control and Data Acquisition Systems
ff)	SIEM	Security Information and Event Management
gg)	SLA	Service Level Agreement
hh)	SLDC	State Load Dispatch Centre
ii)	QCI	Quality Council of India

CEA (Cyber Security in Power Sector) Guidelines, 2021

Article 1. Cyber Security Policy.

a. Cardinal Principles: The Responsible entity will strictly adhere to following cardinal principles while framing cyber security policy:

i. There is hard isolation of their OT Systems from any internet facing IT system.
ii. May keep only one of their IT systems with internet facing at any of their site/location if required which is isolated from all OT zones and kept in a separate room under the security and control of CISO.
iii. Downloading/Uploading of any data/information from their internet facing IT system is done only through an identifiable whitelisted device followed by scanning of both for any vulnerability/malware as per the SOP laid down and for all such activities digital logs are maintained and retained under the custody of CISO for at least 6 months. The log shall be readily to carry out the forensic analysis if asked by investigation agency.
iv. List of whitelisted IP addresses for each firewall is maintained by CISO and each firewall is configured for allowing communication with the whitelisted IP addresses only.
v. Communication between OT equipment/systems is done through the secure channel preferably of POWERTEL through the fibre optic cable. Security configuration of the communication channel is also to be ensured.
vi. All ICT based equipment/system deployed in infrastructure/system mandatorily CII are sourced from the list of the "Trusted Sources" as and when drawn by MoP/CEA.

b. The Responsible Entity shall be ISO/IEC 27001 certified (including sector specific controls as per ISO/IEC 27019).
c. The Responsible Entity shall have a Cyber Security Policy drawn upon the guidelines issued by NCIIPC.
d. The Responsible Entity shall ensure annual review of their Cyber Security Policy by subject matter expert and changes shall be made therein only after obtaining the due approval from Board of Directors.
e. The process of Access Management for all Cyber Assets owned or under control of the Responsible Entity shall be detailed in the Cyber Security Policy.
f. The Cyber Security Policy shall leverage state-of-art cyber security technologies and relevant processes at multiple layers to mitigate the cyber security risks.
g. The Responsible Entity shall be solely responsible to get Cyber Security Policy implemented through its Information Security Division (ISD).
h. The CISO shall record the reason(s) for exemption required, if any, in case, unable to comply with any of the provision(s) of the Cyber Security Policy. Any exception shall be allowed only after an approval of provisions of compensatory control(s) to mitigate residual cyber security risks.

i. The CISO shall record the exemptions sought in statement of applicability controls, while getting the ISO 27001 certified. All exemptions and its justification need to be in conformance with Cyber Security Policy of the Responsible Entity.
j. The Responsible Entity shall allocate sufficient Annual budget for enhancing cyber security posture, enhanced year over year.
k. The Responsible Entity shall work in collaboration with other Industry Stakeholders as well as Academia to promote R&D activity in the domain of cyber security.
l. The Responsible Entity shall ensure that cyber security issues are taken up as agenda items in their Board meetings once in every three months.

Article 2 Appointment of CISO.

a) The Responsible Entity shall mandatorily appoint a CISO and shall confirm to qualification, if any, **laid** by Quality Council of India (QCI). In absence, the work of CISO shall be looked upon by Alternate CISO. In case qualification for appointment of Alternate CISO has been relaxed for reasons recorded thereof, Alternate CISO has to mandatorily acquire the minimum required cyber security skill sets within six months from the date of his appointment.
b) The Responsible Entity shall regularly update details of CISO and Alternate CISO, with the Sectoral CERT, as well as on ISAC-Power Portal.
c) Roles and Responsibility of CISOs shall be as laid by CERT-In and ring-fenced to ensure cyber security of the Cyber Assets of the Responsible Entity.

Article 3: Identification of Critical Information Infrastructure (CII).

a) The Responsible Entity shall submit to NCIIPC through Sectoral CERT, details of Cyber Assets which uses a routable protocol to communicate outside the Electronic Security Perimeter drawn by the Responsible Entity or a routable protocol within a control centre and dial-up accessible Cyber Assets, within 30 days from the date of their commissioning in the System.
b) The Responsible Entity shall submit details of Critical Business Processes and underlying information infrastructure along with mapped impact and Risk Profile to NCIIPC and shall get their CIIs identified in consultation with NCIIPC. The process of the notification/declaration by Appropriate Government shall follow thereafter.
c) The Responsible Entity shall review their declared/notified CIIs at least once a year to examine changes if any in the functional dependencies, protocols and technologies or upon any change in security architecture. The Responsible Entity shall review their declared/notified CIIs once in every 6 months, in case if NCIIPC has directed them to constitute an Information Security Steering Committee.
d) The Responsible Entity shall ensure that all cyber assets of their identified/notified CIIs are recorded in the asset register and considered for risk assessment as well as for finalization of controls in statement of applicability.

Article 4. Electronic Security Perimeter

a) The Responsible Entity shall identify and document the Electronic Security Perimeter(s) and all Access Points to the perimeter(s).

b) The Responsible Entity shall follow procedure of identifying "Electronic Security Perimeter" in case of distributed and/or hybrid information infrastructure, as per IEC 62443 / IS16335 (as amended from time to time).
c) The Responsible Entity shall ensure that every Critical System resides within an Electronic Security Perimeter.
d) The Responsible Entity shall perform a cyber-Vulnerability Assessment of each electronic Access Points to the Electronic Security Perimeter(s) at least once in every 6 (six) months and/or after any change in Security Architecture.
e) The Responsible Entity shall ensure that all critical, high and medium vulnerabilities identified as a result of cyber Vulnerability Assessment shall be closed and verified for the effective closure.

Article 5. Cyber Security Requirements

a) The Responsible Entity shall have an Information Security Division (ISD), headed by CISO.
b) The Responsible Entity shall ensure that the ISD must be functional on 24x7x365 basis and is manned by sufficient numbers of Engineers having valid certificate of successful completion of course on cyber security of Power Sector from the Training Institutes designated by CEA.
c) The Responsible Entity shall ensure that ISD
   1) has on-boarded Cyber Swachhta Kendra(CSK) of CERT-In, if they have public IPs.
   2) has timely acted upon the advisories, guidelines and directive of NCIIPC, CSK, CERT-In and Sectoral CERTs,
   3) has deployed an Intrusion Detection System and Intrusion Prevention System capable of identifying behavioural anomaly in both IT as well as OT Systems.
   4) shares reports on incident response and targeted malware samples with CERT-In,
   5) updates the firmware/software with the digitally signed OEM validated patches only.
   6) enables only those ports and services that are required for normal operations. In case of any emergency the procedure as laid in Access management be followed.
   7) maintains firewall logs for the last 6 months duration. Firewall logs shall be analysed and all critical and high severity comments shall be addressed for effective closure.
   8) retains document of FAT, SAT test results and report/ certificate of cyber tests carried out for compliance of Government Orders and Cyber Security Audit.*
   9) maintains all cyber logs and cyber forensic records of any incident for at least** 90 days.

      * FAT, SAT must include comprehensive cyber security tests of the component/equipment/system to be delivered/delivered at site.
      ** 90 days from date of the commissioning of the system/recovery from any incident, whichever is later.

d) The Responsible Entity shall routinely audit and test security properties of the Critical System and must act upon, in case if any new vulnerabilities is identified through testing or by the equipment manufacturer.

e) The Responsible Entity shall design a secure architecture for control system appropriate for their process control environment*.
f) All State Load Dispatch Centres(SLDCs) shall comply with the directions issued by the National Load Dispatch Centre(NLDC) as well as Regional Load Dispatch Centres(RLDCs) U/s 29 (1) of the Electricity Act, 2003 to ensure stability and cyber security of grid operation and achieve efficiency in the grid operation. In case of any non-compliance, the Head of SLDC shall be responsible and shall be liable for Penalty as per the provision of CERC/SERC.

*There are so many different types of systems in existence and so many possible solutions, it is important that the selection process ensures that the level of protection is commensurate with the business risk and the Responsible Entity shall not rely on one single security measure for its defence. *(Reference IEC/TR62351-10* Edition1.0 2012-10 *Power systems management and associated information exchange –Data and communications security – Part 10: Security architecture guidelines).*

Article 6 Cyber Risk Assessment and Mitigation Plan

a) The Responsible Entity shall document in their Cyber Security Policy a Cyber Risk Assessment and Mitigation Plans drawn upon the best practises being followed in the Power Sector, and the same shall be approved by Board of Directors.
b) The Cyber Risk Assessment and Mitigation Plans shall clearly define the matrix for assessing the cyber risk of both IT and OT environment and risk acceptance criteria.
c) The Cyber Risk Assessment Plan shall be capable to demonstrate that repeated cyber security risk assessment delivers consistent, valid and comparable results.
d) The review of cyber risk assessment shall be carried out at least once in a Quarter. The actionable of risk treatment and mitigation shall be tracked in this review for their effectiveness.
e) The CISO shall be responsible for implementation and regular review, on the basis of internal and external feedbacks, of the Cyber Risk Assessment and Mitigation Plans.

Article 7 Phasing out of Legacy System

a) As the life cycle of the Power System Equipment/System is longer than that of IT Systems deployed therein, the Responsible Entity shall ensure that all IT technologies in the Power System Equipment/System should have the ability to be upgraded.
b) The Responsible Entity shall ensure that the Information Security Division shall draw the list of all communicable equipments/systems nearing end life or are left without support from OEM. Thereafter CISO shall identify equipment/systems to be phased out from the list drawn, firm up their replacement plan and put up the replacement plan for approval before the Board of Directors.
c) The CISO shall ensure that till equipments/systems nearing end life or left without support from OEM are not replaced, their cyber security is hardened and ensured through additional controls provisioned in consultation with the OEM or alternate Supplier(s)*.
*e.g. Use of CDAC developed AppSamvid and whitelisting of applications installed may be explored across all legacy systems.
d) The Responsible Entity shall document in their Cyber Security Policy a Standard Operating Procedure for safe and secure disposal of outlived or legacy systems.

Article 8. Cyber Security Training.

a) The Responsible Entity shall establish, document, implement, and maintain an annual cyber security training program for personnel having authorized cyber or authorized physical access (unescorted or escorted) to their Critical Systems.
b) The Responsible Entity shall review annually their cyber security training program and shall update it whenever necessary. Annual Review shall record evaluation of the effectiveness of the trainings held.
c) The Responsible Entity shall ensure that Cyber Security training program designed for their IT as well as OT O&M Personnel must include following topics and as per their functional requirements and security concerns additional topics shall be added:
    1) User authentication and authorization.
    2) Cyber Security and Protection mechanisms of IT/OT/ICS Systems.
    3) Introduction to various standards i.e. ISO/IEC:15408, ISO/IEC:24748-1, ISO: 27001, ISO: 27002, ISO 27019, IS 16335, IEC/ISO:62443.
    4) Training on implementation of ISO/IEC 27001 and awareness on IEC 62443.
    5) Vulnerability Assessment in the Critical System.
    6) Monitoring and preserving of electronic logs of access of Critical Assets.
    7) Detecting cyber-attacks on SCADA and ICS systems
    8) The handling of Critical System during cyber crisis.
    9) Action plans and procedures to recover or re-establish normal functioning of Critical Assets and access thereto following a Cyber Security Incident.
    10) Hands on SCADA operation at any of the Regional Load Dispatch Centre.
    11) Handling of risks involved in the procurement of COTS Products.

d) All Personnel engaged in O&M of IT & OT Systems shall mandatorily undergo courses on cyber security of Power Sector from any of the training institute designated by CEA, immediately within 90 days from the notification of CEA Guidelines on Cyber Security in Power Sector.
e) The Responsible Entity shall ensure that none of their newly hired or the current Personnel have access to the Critical System, prior to the satisfactory completion of cyber security training programme from the Training Institutes designated in India, except in specified circumstances such as cyber crisis or an emergency.
f) NPTI in consultation with CEA shall identify and design domain specific courses on Cyber Security for different target groups. The "Governing Board for PSO Training and Certification" shall approve the content, duration etc of these courses and shall review it Annually. NPTI shall conduct these courses at all of their branches on regular basis and shall maintain the list of the Participants successfully completing the course.

Article 9 Cyber Supply Chain Risk Management

a) The Responsible Entity shall ensure that, as and when Ministry of Power, Government of India notifies the Model Contractual Clauses on cyber security, these clauses are included in their every Bid invited for procurement of any ICT based components/equipments/System to be used for Power System.
b) The Responsible Entity shall ensure that all the Communicable Intelligent Equipments and the Service Level Agreements (SLAs) for their Critical Systems shall be sourced from the list of the "Trusted Sources" as and when drawn by MoP/CEA.

c) The Responsible Entity shall ensure that, in case, for the any Communicable Intelligent Devices, if no Trusted Source has been identified, then the successful bidder in compliance with the provisions made in MoP order dated 2.7.2020 and any other relevant MoP order has got the product cyber tested for any kind of embedded malware/Trojan/cyber threat and for adherence to Indian Standards at the designated lab.

d) The Responsible Entity shall ensure that the essential cyber security tests are carried out successfully during FAT, SAT as detailed in **Annexure A.** The equipment/System besides for functionality shall also be tested in the factory for vulnerabilities, design flaws, parts being counterfeit or tainted, so as to minimize problems during on-site-testing and installation. Cyber Security Conformance Testing are to be carried out in the designated Lab as listed in **Annexure-I of MoP Order No. 12/13/2020-T&R dt. 8th June, 2021(Order at Annexure-B).**

e) The Responsible Entity shall ensure that the Equipment/System supplied by the successful bidder shall accompany with a certificate[$, #] obtained by OEM from a certification body accredited to assess devices and process for conformances to IEC 62443-4 standards during design and manufacture. The Responsible Entity shall accept the certificate submitted along with the supplied Equipment/System only if it's in line with the Testing Protocol as notified by Ministry of Power, Government of India, from time to time.

f) The Responsible Entity in compliance to the requirement of Article 9(e) shall also accept, till the setting up of an adequate certification facility in the India, a digitally signed self-declaration of conformance to the IEC 62443-4 standards during design and manufacture of the equipment/system, if submitted by the OEM.

g) The Responsible Entity shall dispose all unserviceable or obsolete Communicable Intelligent Devices as per the procedure laid in their Cyber Risk Assessment and Mitigation Plans which shall be in line with the prevailing best practices.

$ The National & International certification may be specified in the tender for critical systems/sub-systems being procured by the Responsible Entity.

Certification Schemes:
Embedded Device Security Assurance Certification is for an individual product,
System Security Assurance Certification is for a set of products in a system (possibly from different vendors)
Security Development Lifecycle Assurance Certification is for the development processes that a manufacturer uses for developing products.

Article 10 Cyber Security Incident Report and Response Plan

a) The CISO of the Responsible Entity shall report in the formats prescribed by CERT-In, all Cyber Security Incidents, classified as reportable events.

b) Root cause analysis for all reportable events shall be carried out and corrective action taken, so as to ensure that any re-occurrence of such event can be managed with ease.

c) The Responsible Entity shall mandatorily define in their Cyber Security Policy, criteria(s) identified on the basis of impact analysis, for declaring the occurrence of

Cyber Security Incident(s) as a Cyber Crisis in the System owned or controlled by them.

d) The Responsible Entity shall mandatorily designate an Officer along with his/her standby by name and designation and empower them to declare an occurrence of the incident(s) as "Cyber Crisis". The contact details of these Officers shall be updated in the C-CMP within 15 days of changes if any due to transfer or superannuation etc.
e) The CISO shall ensure that during any Cyber Security Incident, ISD monitors and minutely records every details of cyber security events and incidents in both IT as well as the OT System owned or controlled by the Responsible Entity.
f) The CISO shall ensure that each cyber incident is handled strictly as per Cyber Security Incident Response Plan detailed in the latest C-CMP approved by the Board of Directors.
g) The Responsible Entity shall ensure that the efficacy of the Cyber Security Incident Response Plan is tested annually through mock drill(s) carried out, if feasible, as simulation exercise(s) or as table top exercise(s) with wider participation of their employees, in consultation with CERT-In and sectoral CERT. In case if any shortcoming is observed in the Cyber Security Incident Response Plan suitable changes shall be made in it.
h) The Responsible Entity shall ensure that the CISO compiles details of incident detection, incident handling, learnings from each incident and damage claims made if any and shall report to CERT-In as well as upload information on ISAC-Power Portal.

Article 11 Cyber Crisis Management Plan(C-CMP)

a) The Responsible Entity shall prepare a Cyber Crisis Management Plan and submit to their sectoral-CERT for review with intimation to Ministry of Power/CISO-MoP. Responsible Entity shall update their C-CMP on the basis of comments made by sectoral-CERT and then submit for vetting to CERT-In. The C-CMP shall be updated once again to include the observations made by CERT-In before seeking approval of Board of Directors for implementation of C-CMP.
b) The Responsible Entity shall ensure that the C-CMP is reviewed at least annually. The CISO shall ensure that all changes are made in C-CMP only with the due approval of Board of Directors and the changes made in C-CMP have been communicated through a verifiable means to all the concerned Personnel of the Responsible Entity.
c) The CISOs shall be the custodian of all the cyber security related documents including Cyber Crisis Management Plan, Risk Treatment Plan, Statement of Applicability of controls, and compliance to regulator's requirement.
d) The CISO shall be accountable for ensuring enforcement of C-CMP by Information Security Division of the Responsible Entity, during a cyber-crisis, as and when declared by the designated Officer. (refer Article 10(d))

Article 12: Sabotage Reporting%

a) The Responsible Entity shall incorporate procedure for identifying and reporting of sabotage in their Cyber Security Policy within 30 days from issue of the Guidelines, or grant of licence under the appropriate legal provisions to the Responsible Entity.
b) The CISO shall be held liable for non-reporting of identified sabotage(s) as per procedure laid for identifying and reporting of sabotage in the Cyber Security Policy of the Responsible Entity.

c) The CISO shall prepare a detailed report on disturbances or unusual occurrences, identified, suspected or determined to be caused by sabotage in the Critical System of the Responsible Entity, and shall submit the report to the Sectoral CERT as well as to CERT-In within 24 hours of its occurrence.
d) The CISO shall submit to NCIIPC within 24 hours of occurrence the report on every sabotage classified as cyber incidents(s) on "Protected System".
e) The CISO upon occurrence on every sabotage shall take custody of all log records as well as digital forensic records of affected Cyber Assets, Intrusion Detection System, Intrusion Protection System, SIEM and shall preserve them for at least 90 days and shall make them available as and when called upon for investigation by the concerned Agencies.

%Disturbances or unusual occurrences, suspected or determined to be caused by sabotage.
Sabotage e.g. can be a forced intrusion in un-manned/manned facility and taking control of operation of Critical System through a communicating device.

Article 13 Security and Testing of Cyber Assets

a) The Responsible Entity shall ensure security of all in-service phase as well as standby Cyber Assets through regular firmware/Software updates and patching, Vulnerability management, Penetration testing (of combined installations), securing configuration, supplementing security controls. CISO shall maintain details of update version of each firmware and software and their certification if received from OEMs.
b) The Responsible Entity shall carry out regularly Vulnerability Assessment of all Cyber Assets owned or under their control. If a Cyber Asset is found vulnerable to any exploits or upon any patch updates or major configuration changes, then further Penetration Testing may be carried out offline or in a suitably configured laboratory test-bed to determine other vulnerabilities that may have not been identified so far.
c) The Responsible Entity shall specify security requirement and evaluation criteria during each phase of their procurement Process.
d) The Responsible Entity shall ensure that all Cyber Assets being procured shall conform to the type tests as mentioned in the specification for type testing listed in the bid document. Type test reports of tests conducted in NABL accredited Labs or internationally accredited labs (with in last 5 years from the date of bid opening) shall be mandated to be submitted along with bid. In case, the submitted Type Test reports are not as per specification, the re-tests shall be conducted without any cost implication to the Responsible Entity.
e) The Responsible Entity shall ensure that all Communicable devices are tested for communication protocol as per the ISO/IEC/IS standards listed in **MoP Order No. 12/13/2020-T&R dated 8th June, 2021(Annexure-B).**
f) The Responsible Entity shall ensure that all Critical Systems designed with Open Source Software are adequately cyber secured.
g) The Responsible Entity as a best practise upon any incidence of Cyber Security Breach shall carry out cyber security tests at any lab designated for cyber testing by Ministry of Power. These tests shall be similar to Pre Commissioning Security Test and those essential for carrying out Post Incident Forensics Analysis.

Article 14 Cyber Security Audit

a) The Responsible Entity shall implement Information Security Management System (ISMS) covering all its Critical Systems.
b) The Responsible Entity shall through a CERT-In Empanelled Cyber Security OT Auditor shall get their IT as well as OT System audited at least once in every 6 (six) months and shall close all critical and high vulnerabilities within a period of one month and medium as well as low non-conformity before the next audit. Effective closure of all non-conformities shall be verified during the next audit.
c) The Cyber Security Audit shall be as per ISO/IEC 27001 along with sector specific standard ISO/IEC 27019, IS 16335 and other guidelines issued by appropriate Authority if any. These mentioned standards shall be current with all amendments if any and in case if any standard is superseded, the new standard shall be applicable. CISO shall ensure immediate closure of non-conformance, based on the criticality and by means all non-conformances are to be closed before the next audit.
d) The Responsible Entity shall ensure that CISO has all the required systems and documents in place, as mandated by NSCS for base line cyber security audit.

Attachment 2:- Life Cycle Status and Obsolescence Risk with Seres 90-30 Control Module

ANNEXURE-R4

Emerson Automation Solutions Intelligent Platforms Pvt. Ltd.,
(Formerly known as GE Intelligent Platforms Pvt. Ltd.,)
CIN: U72200KA1997PTC022158
Building No.8, Ground Floor
Velankani Tech Park, No.43
Electronic City Phase I,
Hosur Road, Bangalore-560100
Karnataka, India
www.emersonprocess.co.in
T +91 80 42515300-04
F +91 80 42515305-06

S9030/Product Status

Dated -1- Aug-2022

Dear Valued Customer

Subject: Obsolescence Risk with existing 90-30 Controller Hardware, S9030 life cycle status and Way forward

At the outset, we thank you for continued patronage for last so many years. We understand that your esteemed organization has been using GE IP's automation technologies and solutions for various critical processes/applications.

The Series 90-30 has been one of the pioneers in control systems with great power. Its reliability has been second to none. But older systems do not have the advantages you need today for greater performance through high-speed processing with secure visibility for real-time insight.

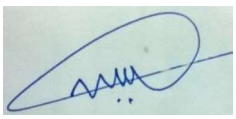
Due to technological advances and obsolescence of various components, we declared S9030 PLC product family as mature on 1st October 2015. S9030 parts are not available for sale anymore as this product has been moved to discontinued stage on 1st October 2017.

Our goal in evolving our technology is protect your investment – whether it is existing wiring, your application logic, your cabinets etc. The RX3i makes it easy to move forward by taking the programming and data connections right into the new CPU to execute. The RX3i also preserves the I/O implementation to the mounting holes to preserve the existing cabinets. Once the system is upgraded, it gains wide new capability, and its reliability clock is reset. It's the fastest, easiest upgrade in the marketplace. A system can be updated in just a few hours, and high availability systems often can change over without stopping.

We strongly recommend you upgrade S9030 PLC system to PAC RX3i. We shall retain existing IOs, Field Wiring, Panels, system backup during upgrade.

Thanking you and assuring you of our best services at all times

Yours Faithfully,
For **Emerson Automation Solutions Intelligent Platforms Pvt. Ltd.**



Neelesh Dabadghao
Associate Director – Sales

Attachment 3:- Genius Bus discontinuance notice and path forward

Emerson Automation Solutions
Intelligent Platforms Pvt. Ltd.,
(Formerly known as GE Intelligent Platforms Pvt. Ltd.,)
CIN: U72200KA1997PTC022158
Building No.8, Ground Floor
Velankani Tech Park, No.43
Electronic City Phase I,
Hosur Road, Bangalore-560100
Karnataka, India
www.emersonprocess.co.in
T +91 80 42515300-04
F +91 80 42515305-06

Genius LAN/Product Status/2022 Date: 1st August 2022

Dear Valued Customer

Subject: Discontinuance notice for Genius Bus Controller and Path forward

At the outset, we thank you for continued patronage for last so many years. We understand that your esteemed organization has been using Emerson's (Formerly GE IP) automation technologies and solutions for various critical processes/applications.

GENIUS was the first intelligent, rugged, distributed I/O system for PLC systems. It was introduced in 1985 and was the first with extensive diagnostics and easy setup over a proprietary network. It quickly gained global acceptance in applications such as Oil & Gas, Metal, Power, Mining, Water, etc. Over the years we evolved our I/O offering bringing forward many of the GENIUS capabilities and marrying it with the latest technology and providing advanced functionality in more cost-efficient form factors. Controlling the I/O, the GENIUS Bus Controllers became the standard

Due to technological advances and obsolescence of various components, we declared Genius Bus Controller product family as mature on 1st January 2014. Genius Bus Controller parts are not available for sale anymore as this product has been moved to discontinued stage on 1st October 2017.

Our goal in evolving our technology is protect your investment – whether it is existing wiring, your application logic, etc. Emerson's Intelligent Platforms provides excellent upgrade path for your application to modern technology. We can convert your control, GENIUS LAN, and Genius I/O to multicore high-performance platform with an open protocol Profinet over high speed ethernet communication. All local and remote genius LAN can be migrated to open protocol Profinet. We can convert applications ranging from the simple to the highly complex. Minimum downtime, minimum effort, minimum cost – we provide the easiest upgrade path available!

Key Benefits of Migration to Profinet :

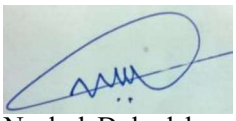
1. Proven, tested control with advanced security built-in
2. Open standard I/O connectivity with PROFINET over high-speed Ethernet
3. High performance and flexible high availability
4. Programming and data connections are easily transferred into new system
5. Advanced functionality through use of Proficy Machine Edition programming and configuration tools
6. System can be updated in just a few hours and in steps, minimizing downtime
7. High availability systems often can change over without stopping

We strongly recommend you upgrade Genius LAN to open protocol Profinet over high speed ethernet communication.

Thanking you and always assuring you of our best services.

Yours Faithfully,

For Emerson Automation Solutions Intelligent Platforms Pvt. Ltd.



Neelesh Dabadghao Associate
Director – Sales

Attachment 4:- Certificate of Incorporation after change of name (2)

GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS

Office of the Registrar of Companies

E' Wing, 2nd Floor Kendriya Sadana, Bangalore, Karnataka, India, 560034

Certificate of Incorporation pursuant to change of name

[Pursuant to rule 29 of the Companies (Incorporation) Rules, 2014]

Corporate Identification Number (CIN): U72200KA1997PTC022158

I hereby certify that the name of the company has been changed from GE INTELLIGENT PLATFORMS PRIVATE LIMITED to EMERSON AUTOMATION SOLUTIONS INTELLIGENT PLATFORMS PRIVATE LIMITED with effect from the date of this certificate and that the company is limited by shares.

Company was originally incorporated with the name GE Fanuc Systems Private Limited.

Given under my hand at Bangalore this Fifteenth day of April two thousand nineteen.

C V SAJEEVAN

Registrar of Companies

RoC - Bangalore

Mailing Address as per record available in Registrar of Companies office:

EMERSON AUTOMATION SOLUTIONS INTELLIGENT PLATFORMS PRIVATE LIMITED

BUILDING NO.8, GROUND FLOOR, VELANKANI TECH PARK, NO.43, ELECTRONIC CITY, PHASE-1, HOSUR ROAD, BANGALORE, Bangalore, Karnataka, India, 560100

Signature Not Verified

Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

Attachment 4:-AUMA - Product Discontinuations

Product Discontinuations

ANNEXURE-R5

Product	Date	Successor products
ED, EQ	31.12.2023	PROFOX
LMS .1	02.09.2019	-
SA, SQ, AM, AC for applications in zone 22 (II3 D Ex)	24.06.2019	SAEx, SQEx, AMExC, ACExC
GHT 360.1, GHT 360.2	03.06.2018	GHT . 3, GK 40.2, GST 40.1
SFC (AM/AMExC, AC/ACExC)	13.07.2018	AC/ACExC .2-SIL
SG .3	30.06.2018	EQ, SGC
WSH .1	01.03.2018	WSH .2
WGD 90.1	01.02.2018	-
SA 07.1 – SA 16.1	31.12.2015	SA 07.2 - SA 16.2
SAR 07.1 – SAR 16.1	31.12.2015	SAR 07.2 - SAR 16.2
SAExC 07.1 – SAExC 16.1	31.12.2015	SAEx 07.2 - SAEx 16.2
SARExC 07.1 – SARExC 16.1	31.12.2015	SAREx 07.2 - SAREx 16.2
SG 05.1 – SG 12.1	31.12.2015	SQ 05.2 - SQ 14.2
SGR 05.1 – SGR 12.1	31.12.2015	SQR 05.2 - SQR 14.2
SGExC 05.1 – SGExC 12.1	31.12.2015	SQEx 05.2 - SQEx 14.2 SQREx 05.2 - SQREx 14.2
AC 01.1	31.12.2015	AC 01.2
ACExC 01.1	31.12.2015	ACExC 01.2
SAI 6 - SAI 100	31.12.2015	SAI 07.2 - SAI 16.2
SARI 6 - SARI 100	31.12.2015	SARI 07.2 - SARI 16.2
AS, ASR 6 - AS, ASR 50	30.06.2012	SGC 04.1 - SGC 12.1
MEC 02.1	30.06.2012	MEC 03.1

VISHAL WANKHEDE

From: RAJNIKANT SINGH <rajnikants@bhel.in>
Sent: Monday, September 28, 2020 10:36 AM
To: 'Vishal Wankhede'
Cc: 'Deepak Kumar Sanwal दीपक कुमार सानवाल'; 'anilkumarsingh'; 'ssbgwrj'; 'M K Thanuja - HPBP(TRICHY)'
Subject: RE: Reminder3: Budgetary offer Required for spares of Flame scanners, Hyderastep and ERV
Attachments: BHELSCAN Catalogue.pdf

****Security Advisory: This Email has been sent by a Non-NTPC mail ID from Internet. The Actual sender determined by Security Gateway is [rajnikants@bhel.in]. Please do not click links contained in this mail or open attachments unless you recognise the source of this email and know the content is safe. **** Dear Sir,

With reference to your trailing mail, we would like to inform you that the electronic cards pertaining to "SAFE FLAME II" are obsolete. So we cannot offered same spares.

Kindly confirm whether we can offer for BHEL SCAN to replace the existing SAFE FLAME II. Please find the attached catalogue of latest BHELSCAN Flame Scanner system for your reference.

However the budgetary offer for Hydra step and ERV spares will be submitted shortly.

With Regards,

Rajnikant Singh , Dy. Engineer , BHEL, SSBG-Jabalpur
Ph: 0761-4018046 | MoNo- 9893396895 |

-----Original Message-----
From: Vishal Wankhede [mailto:vishalwankhede@ntpc.co.in]
Sent: 26 September 2020 19:04
To: rajnikants; ssbgwrj
Cc: Deepak Kumar Sanwal दीपक कुमार सानवाल; anilkumarsingh
Subject: Re: Reminder3: Budgetary offer Required for spares of Flame scanners, Hyderastep and ERV

Sir,

We are yet to receive budgetary offer as per trialing mail and BHEL Enquiry reference no. SB20J0311.

Kindly send the budgetary offer for following spares of "SAFE FLAME II" flame scanner system at Sipat stage-2, 2 x 500MW
1) Intensity & Fault Detection Card
2) Frequency Detection Card
3) Lamp & Meter Card
4) Lamp Card
5) 2/4 Flame Indication Card
6) Power Supply Card
7) 35 Pin Extender
8) FLAME SCANNER ELECTRONIC HOUSING CARD

ANNEXURE-R7

From: jaykumar [mailto:jay.kumar@bhel.in]
Sent: 28 May 2020 07:51
To: avinashanand@bhel.co.in
Cc: suresh.chandra@bhel.in; 'Shubham Mittal' <shubham.mittal@bhel.in>; 'rajendra kumar' <rajendra.kumar@bhel.in>; vgarg@bhel.in
Subject: Electro Hydraulic Converter (EHC) of LPBP system

Dear Sir,

This has reference of your discussion with Sh. Suresh Chandra, SDGM, BHEL, Haridwar regarding EHC (Electro Hydraulic Converter) of LPBP system.

It may please be noted that item "Electro-hydraulic Converter of LPBP system" has become obsolete and no longer available.

New design of this LPBP-EHC has been developed by us which we are offering in place of old EHC.

Best Regards,

Jay Kumar,
Dy. Manager/Spares and R&M,
BHEL, HEEP, Ranipur, Haridwar,
Tel. No.: +91 1334 28 4053
Email id: jay.kumar@bhel.in
Web: www.bhel.com

आज़ादी का अमृत महोत्सव

Follow us on :

Signature Not Verified
Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited

है, विकृत हो सकती है, खो सकती है, नष्ट हो सकती है, देर से या अपूर्ण रूप में पहुंच सकती है, या वायरस से ग्रस्त हो सकती है। इसलिए, ई-मेल और इसकी विषय-वस्तु (निर्दिष्ट त्रुटियों के साथ या उनके बगैर) की जिम्मेवारी ई-मेल तैयार करने वाले / प्रेषक या बीएचईएल या उसके सहयोगियों की नहीं होगी। इस ई-मेल में उल्लिखित विचार या राय, यदि कोई हो, प्रेषक के ही हैं। यह आवश्यक नहीं है कि ये बीएचईएल या इसकी सहयोगी कंपनियों के विचार या राय के साथ मेल खाएं। लक्षित प्राप्तकर्ता ई-मेल या इसकी विषय-वस्तु पर कार्रवाई करने से पहले वैकल्पिक संचार तंत्र के माध्यम से जानकारी या निहितार्थ को सत्यापित करवा सकते हैं।

चेतावनी: यद्यपि कंपनी ने यह सुनिश्चित करने के लिए कि इस ई-मेल में कोई वायरस मौजूद नहीं हो, काफी सावधानी बरती है, फिर भी प्राप्तकर्ता यह जाँच कर लें कि इस ई-मेल और इसके अटैचमेंट्स में वायरस न हों। इस ई-मेल द्वारा संक्रामित किसी वायरस के कारण होने वाली किसी क्षति के लिए ई-मेल का प्रेषक या बीएचईएल जिम्मेदार नहीं हैं।

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Uttar Pradesh Pollution Control Board
Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010
Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.in, Website: www.uppcb.com

169928/UPPCB/Raebareli(UPPCBRO)/CTO/both/RAEBARELI/2022 **Date: 28/12/2022**

To,

M/s

NTPC LIMITED Unchahar Stage IV

Feroz Gandhi Unchahar Thermal Power Project, NTPC Ltd, Stage-4 Unchahar, Distt. Raebareli, U.P.-229406,RAEBARELI,229406

Application Id-18623398

Consolidated Consent to Operate and Authorisation hereinafter referred to as the CCA (Consolidated Consent & authorization) (Fresh) under Section-25 of the Water (Prevention & Control of Pollution) Act, 1974 and under Section-21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule-6(2) of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 notified under Environment (Protection) Act, 1986 as applicable (to be referred hereinafter as Water Act, Air Act and HW Rules respectively).

CCA is hereby granted to **NTPC LIMITED Unchahar Stage IV** located at **Feroz Gandhi Unchahar Thermal Power Project, NTPC Ltd, Stage-4 Unchahar, Distt. Raebareli, U.P.-229406,RAEBARELI,229406**. subject to the provisions of **the Water Act, Air Act and Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016** and the orders that may be made further and subject to following terms and conditions :-

1. This CCA NTPC LIMITED Unchahar Stage IV **granted for the period from 01/01/2023 to 31/12/2024** and valid for manufacturing of following products.

S No	Product	Quantity	Unit
1	Coal based Thermal Power Station	500	Megawatt

2. Conditions under Water(Prevention and Control of Pollution) Act -1974 as amended :-

(i) The daily quantity of effluent discharge (KLD) :-

Kind of Effluent	Quantity(KLD)	Treatment facility	Discharge point
Industrial	**2340 KLD**	**ETP**	

(ii) Trade Effluent Treatment and Disposal :-The applicant shall operate Effluent Treatment Plant consisting of primary/secondary and tertiary treatment as is required with reference to influent quantity and quality.

In case of stoppage of functioning of ETP, production has to be stopped immediately and this Board has to be intimated by fax/phone/email with a report in this regard to be dispatched immediately.

(iii) The treated effluent shall be recycled to the maximum extent and should be reused within the premises for gardening etc. Quality of the treated effluent shall meet to the following general and specific standards as prescribed under Environment (Protection) Rules, 1986 and applicable to the unit from time-to-time :-

Industrial Effluent Quality Standard

S.No.	Parameter	Standard
1	pH	5.5-9.0
2	TSS	100 mg/l
3	BOD	30 mg/l
4	COD	250 mg/l
5	Oil and grease	10 mg/l

(iv) Sewage Treatment and Disposal :- The applicant shall provide comprehensive STP as is required with reference to influent quantity and quality.In case of stoppage of functioning of STP, production has to be stopped immediately and this Board has to be intimated by fax/phone/email with a report in this regard to be dispatched immediately.

(v) The treated sewage shall be reused in gardening as far as possible. The STP shall be maintained continuously so as to achieve the quality of the treated sewage to the following standards.

S No.	Parameters	Standards

3. Conditions under Air (Prevention and Control of Pollution) Act -1981 as amended :-

i) The applicant shall use following fuel and install a comprehensive control system consisting of control equipment as required with reference to generation of emissions and operate and maintain the same continuously so as to achieve the level of pollutants to the following standards.

Air Pollution Source Details

S No.	Air Pollution Source	Type of fuel	Stack no	Control Device	Height of Stack

Emmission Quality Standards

S No.	Stack no	Parameters	Standards

In case of stoppage of functioning of air pollution control equipment, production has to be stopped immediately and this Board has to be intimated by fax/phone/email with a report in this regard to be dispatched immediately

(ii) The unit will not use any type of restricted fuel.

iii) Noise from the D.G. Set and other source(s) should be controlled by providing an acoustic enclosure as is required for meeting the ambient noise standards for night and day time as prescribed for respective areas/zones (Industrial, Commercial, Residential, Silence) which are as follows :-

Day time : from 6.00 a.m. to 10.00 p.m., Night time: from 10.00 p.m. to 6.00 a.m.

Standards for Noise level in db(A) Leq	Industrial Area		Commercial Area		Residential Area		Silence Zone	
	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
	75	70	65	55	55	45	50	40

4. Conditions under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 :-

The Factory Manager of M/s NTPC LIMITED Unchahar Stage IV. is hereby granted an authorization to operate a facility for collection and storage of Hazardous wastes. The authorization is granted to operate a facility for generation, collection and storage of hazardous wastes within factory premises for following

category of wastes:-

S.No.	Category of Hazardous Waste as per the Schedules I, II and III of these rules	Authorised mode of disposal or recycling or utilisation or co-processing, etc.	Quantity(ton/annum)
1	Sch.-1, Cat.-5.1 (Used or spent oil)	TSDF	73.0 Ton/annum
2	Sch.-1, Cat.-33.1 (Empty barrels)	TSDF	1.095 Ton/annum
3	Sch.-1, Cat.-35.2 (Resin)	TSDF	5.0 Ton/annum
4	Sch.-1, Cat.-5.1 (Mineral/Glass wool Insulation)	TSDF	200 Ton/annum
5	Sch.-1, Cat.-5.1 (Oil/Grease soaked cotton)	TSDF	3.0 Ton/annum
6	Sch.-1, Cat.-5.1 (Asbestos Packing)	TSDF	0.5 Ton/annum

The authorization shall be in force and shall be valid upto 31/12/2024. The authorization is subject to the conditions stated below and such conditions as may be specified in the rules for the time being in force under Environment (Protection) Act, 1986.

Terms and conditions of Hazardous Waste authorization :-

(i) The authorization shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.

(ii) The authorization and its renewal shall be produced for inspection at the request of an officer authorized by the SPCB.

(iii) The person authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous wastes without obtaining prior permission of the SPCB.

(iv) Any unauthorized changes in personnel, equipment as working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.

(v) It is the duty of the authorized person to take prior permission of the SPCB to close down the facility.

(vi) An application for the renewal of an authorization shall be made as laid down under these rules.

(vii) The unit shall comply with any other conditions specified in the guidelines issued by the MoEF or CPCB/SPCB from time to time.

(viii) The authorization is valid for temporary storage of Hazardous Waste within premises only.

(ix) The authorized agency shall ensure that on-line data with regard to quantity and nature of hazardous chemicals being used in the plant as well as air emission and waste generated within premises is displayed on Display Board of size 6x4 feet outside the main factory gate within premises

(x) It is duty of the authorized person to take prior permission of this Board to close and cleanup the facility for treatment, storage and disposal of hazardous waste.

(xi) The applicant shall maintain record of hazardous waste in Form-3 and shall submit annual return in Form-4 on or before the 30th day of June following to the financial year to which that return relates.

(xii) In no case any hazardous waste shall be disposed off on land, in any drain, or into any water stream. All spillage must also be safely collected and stored.

(xiii) Before the hazardous waste is stored or dumped in the facility, applicant must conduct a detailed physical and chemical analysis of hazardous waste sample and report to the Board.

(xiv) Dried hazardous sludge from the process in the plant shall be stored in double layer HDPE constructed with R.C.C. or such material which does not react with the waste containing

(xv) The storage area should be fenced properly and Sign/Notice Board indicating 'Danger' and 'Hazardous' shall be displayed at appropriate position both in Hindi and English.
(xvi) The industry shall store non-ferrous metal waste, used oil/spent oil waste in sealed drums placed on impervious floor under covered shed. Hazardous waste if required shall be sold only to Registered Recyclers/Re-processors.
(xvii) In case of any transportation of hazardous waste, the details in Form-10 of the Hazardous and Other Wastes Rules, 2016 shall be submitted to the Board.

5. Essential documents to be submitted by the Industry/Unit as Applicable:-

(i) Annual return in Form-4 and Waste Disposal Manifest in Form-10 under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and Third Party Audit Report.
(ii) Environment Statement in Form-V of Environment (Protection) Rules, 1986.
(iii) Quarterly compliance report of the CCA, photograph of ETP/APCs/Waste Storage Area.
6. Competent Authority reserves the right to change/modify/add any time any condition of this CCA.
7. Unit has to comply with the following specific & general conditions. Non compliance of any provision of this CCA and provisions of the Water Act, Air Act and Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 will results in legal action under the aforesaid Acts and Rules.
8. In compliance to the G.O 1011/81-7-2021-09 (Writ)/2016 dated.13.10.2021 issued by Department of Environment, Forest and Climate Change, Uttar Pradesh. You are directed to develop Miyawaki Forest as per the SOP available at URL:-http://www.upecp.in/TrainingSession.aspx for ensuring timely compliance of this direction, you are hereby directed to submit a bank guarantee with minimum validity of one year of the amount equivalent to the sum of initial consent fees (Air and Water) or Rs. 50,000/- (Rs. Fifty Thousand Only) whichever is more, within 30 days from the date of issuance of this certificate. In case of non-compliance of this direction, your consent will be revoked by the Board.
9. If the unit uses the ground water and requires the permission from SGWA/CGWA for water abstraction then the industry will have to obtain No objection certificate for abstraction of ground water. It will be the responsibility of the industry to comply with the various conditions of the NOC obtained from the competent authority and submit to the Board, within 3 months time failing which CTO will be revoked.

General Conditions:-

1. The applicant shall get analysed the samples of effluent/emission/hazardous wastes at least once in a three month from the laboratory recognized by the MoEF and shall report to the UPPCB.
2. The applicant shall however, not without the prior consent of the Board bring into use any new or altered outlet for the discharge of effluent or gases emission or sewage waste from the unit.
3. Treated Industial waste water and domestic waste water shall be disposed jointly at one disposal point. The applicant shall provide discharge measurement equipment at final disposal point.
4. The applicant shall strictly comply with conditions of this CCA and submit compliance report of stipulated conditions within 30 days of receipt of this CCA. If at any point of time, it is found that the industry is not complying with stipulated conditions or any further direction/instruction issued by the Board, legal action shall be initiated against the applicant.
5. The applicant shall maintain good house keeping. All valves/pipes/sewer/drains etc. must be leak-proof
6. The industry shall provide uninterrupted entry to the STP/ETP inlet and outlet points, Air Pollution Control equipment and stack for smooth sampling/monitoring of efficiency of pollution control systems.
7. The industry shall provide Inspection Book at the time of inspection to the Board's officials.
8. Whenever due to any accident or other unforeseen act or event, such emission occurs or is apprehended to occur in excess of standards laid down, such information shall be reported to the Board's offices and all other concerned offices. In case of failure of pollution control equipment, the production process connected to it shall be stopped with immediate effect.

9. The industry shall operate in a manner so that all emissions be emitted through designated chimney/stack only.
10. In case of any damage to the agriculture productivity, human habitation etc. by the operation of industry, it shall be imperative to stop production in the industry with immediate effect and such information shall be reported to Board's offices. The industry shall be liable to pay compensation also in such cases as decided by the Competent Authority.
11. The applicant shall apply before the 60 days of expiry of CCA or any change in production types/ production capacity/manufacturing process/capacity enhancement etc. or any change in effluent discharge point or emission point
12. The Board reserves the right to revoke/add/modify any stipulated condition issued along with CCA, as may be necessary.

Specific Conditions:-
1. This consent is valid for Coal based Thermal Power Station: 500 MW for the production of Electricity.

2. This consent is valid for the current products and capacity. In Case of any change in process, capacity enhancement, etc., the No Objection Certificate shall be obtained from the Board.

3. Generated hazardous waste shall be stored temporarily in the factory premises and disposed off through authorized TSDF after obtaining the authorization from the Board.

4. Industry shall submit the latest copy of Audited Balance Sheet/C.A. Certificate (Fixed Assets+ Current Assets - Current Liabilities) so the Consent fee payable by the industry may be verified.

5. The Order issued by Hon'ble Courts/Hon'ble NGT, MOEF, Central Pollution Control Board, U.P. Pollution Control Board, shall be complied with.

6. The industry shall ensure to recycle, to the maximum, the treated effluent after treatment in Oxidation Pond.

7. The industry shall ensure to submit the latest analysis report of treated effluent sample analyzed by any NABL recognized laboratory within 15 days in the Board issuance of this certificate.

8. The industry shall ensure to obtain permission from U.P. State Ground Water Department for withdrawal of ground water within 03 months and submit it to the Board.

9. The industry shall ensure to maintain and operate the APCS (i.e. ESP) effectively attached with the boiler.

10. The Chimney should not be less than 275 meters above ground level.

11. The unit shall ensure that the ambient air quality remains as per the standards prescribed by CPCB.

12. The industry shall ensure to comply with the specified standards as given in the MoEF & CC Notification dated 07.12.2015.

13. The unit shall ensure to submit stack monitoring report to the Board on quarterly basis, [illegible]ed by a NABL recognized laboratory.

14. The industry shall ensure to establish Miyawaki forest, as per the GO no. 1011/81-7-2021-09(rit)/2016 dated 13.10.2021 of Deptt. of Environment, forest and Climate Change.

15. The industry shall comply with the provisions of, Environment (Protection) Act 1986, Water (Prevention and Control of Pollution) Act, 1974 as amended, Air (Prevention and Control of Pollution) Act, 1981 as amended, Plastic Waste Management Rules 2016, E- Waste (Management) Rules 2016, Solid Waste Management Rules 2016 & Hazardous and other Waste (Management and Transboundary Movement) Rules 2016 (Whichever is applicable).

16. If closure order is issued by CPCB or UPPCB against the unit, then CTO issued earlier will remain suspended during the closure period and after ensuring the compliance and after revocation of closure order, the CTO will automatically be effective from the date of issuance of closure order revocation, with additional conditions mentioned in the closure revocation order.

Chief Environmental Officer,
Circle-5, UPPCB.

Copy to:

Regional Officer, UPPCB, Raebareli.

Chief Environmental Officer,
Circle-5, UPPCB.

Guidelines for disposal/utilisation of Fly Ash for reclamation of Low Lying Areas and in stowing of Abandoned mines/Quarries

Central Pollution Control Board
March, 2019

I N D E X

Sr No.	Chapter
1.0	Introduction
2.0	Status of flyash utilisation
3.0	Need of guidelines
4.0	Loading/unloading and transportation of flyash
4.1	Current Practice for Handling & Disposal of Flyash & Bottom ash (within the power plant)
4.2	Guidelines for loading, unloading, storage, transportation of flyash
4.2.1	Maximise dry collection of fly ash and bottom ash
4.2.1	Loading, unloading and storage
4.2.3	Transportation
4.2.4	Code of Practices for general maintenance of roads, vehicles and conditioning of flyash
5.0	Reclamation of Low Lying area using Ash
6.0	Disposal of flyash in voids of abandoned mines
6.1	Study requirements
6.2	Mode of ash transportation to mine void area
6.3	Monitoring
6.4	Reclamation of land post-filling
7.0	Precaution
8.0	Regulatory Procedure for Processing the Application
Appendix	Guidelines for disposal of flyash in open cast mines along with Over Burden (OB)
References	1.Guidelines for Reclamation of Low Lying Areas and Abandoned Quarries with Ash , August 2017, Odisha Pollution control board

2. Guidelines for Low Lying area development using Ash, ash Policy 2015, NTPC Ltd.

3. Permission of DGMS to M/s JSPL & JPL for disposing ash in coal mines

Guidelines for disposal/utilisation of flyash for reclamation of Low Lying Areas and in stowing of Abandoned mines/Quarries

1.0 Introduction:

Management of huge quantity of ash (fly ash, bottom ash and pond ash) generated from coal fired Thermal Power Plants (TPPs) is a serious environmental challenge. Ash generation from coal or lignite based thermal power plants, has increased from 40 Million tonne per year in 1993-94, to more than 200 Million tonne per year in 2017-18 and is projected to increase to 275 Million Tons / year by 2032.

The ash generation in coal and lignite based thermal power plants in various forms such as dry ash, bottom ash, pond ash and mound ash that are required to be managed in such a manner that it does not affect the environment. Utilisation of ash for reclamation of low lying areas and abandoned quarries is recognised as an alternate option and therefore, MoEF&CC has issued a notification to address utilisation off ash for various purposes including these two options

The Ministry of Environment, Forest and Climate Change (MoEF&CC) issued the Fly Ash notification on 14th September, 1999, which has subsequently been amended in 2003, 2009 and 2016. The Fly Ash notification (1999) mandates the use of fly ash for the purpose of manufacturing ash-based products such as cement, concrete blocks, bricks, panels or any other material and for construction of roads, embankments, dams or for any other construction activity within a radius of 300 km from thermal power stations (TPPs). Besides, it also mandates use of fly ash in mines backfilling or stowing of mines within a distance of 50 km.

2.0 Status of fly ash utilisation:

Since 1999 when flyash utilisation was made mandatory, the utilization of fly ash has increased from 6.64 million-ton in 1996-97 to 147.7 million-ton in 2017-18. Fly ash generation and utilization in 2017-18 from 182 coal/lignite based TPPs of various power utilities in the country was 220.7 and 147.7 million-ton, respectively. The percentage of fly ash utilization during 2017-18 has been 66.9%. During 2017-18, out of total fly ash generation, 35.6 % of total fly ash was used in the cement sector, followed by 14.28 % in making bricks & tiles, 11.57 % stored in ash dyke raising,

7.99% in mine filling, 16.85 % in reclamation of low lying area, 5.43 % in roads & embankments, 1.34% in concrete making, 0.21 % in agriculture, 6.73 % in others and 33.1% remained as unutilized fly ash.

Mine reclamation represents a potential beneficial use of flyash that has been receiving increased attention in recent years. Coal mining operations have produced both open pits and deep underground mine voids that can be filled by flyash. Placement of flyash into deep mines can provide structural support to abate subsidence, and placement of flyash in surface mines or other open pits can aid in restoring mined land to beneficial use. The use of flyash as mine backfill may provide the additional benefit of limiting impacts of acid mine drainage (AMD). Mostly flyashe is alkaline material that can neutralize acidic water and/or inhibit production of acid. Placement of fly ash may also reduce the permeability of mine strata and divert water away from acid-generating materials. Although flyash possess these beneficial physical and chemical properties, there are concerns regarding potential for release of toxic chemicals in the leachates from the fly ash. Therefore, scientifically sound fly ash management is needed so that environmental concerns can be adequately and reliably identified and addressed.

3.0 Need of Guidelines:

Ministry of Environment and Forests and Climate Change (MoEF&CC) vide Notification No. S.O. 763 (E) dated 14th September 1999, last amended on 25th January, 2016 issued following directions for reclamation low lying area and stowing of mines;

i. No agency, person or organization shall within a radius of three hundred Kilometres of a coal or lignite based thermal power plant undertake or approve or allow reclamation and compaction of low-lying areas with soil; only ash shall be used for compaction and reclamation.

ii. Soil required for top or side covers of embankments of roads or flyovers shall be excavated from the embankment site and if it is not possible to do so, only the minimum quantity of soil required for the purpose shall be excavated from soil borrow area. In either case, the topsoil should be kept or stored separately. Voids created at soil borrow area shall be filled up with fly ash with proper compaction and covered with topsoil kept separately as above and this would be done as an integral part of embankment project.

iii. No person or agency shall within fifty kilometers (by road) from coal or lignite based Thermal Power Plants, undertake or approve stowing of mine without using at least 25 % of fly ash on weight to weight basis, of the total stowing materials used and this shall be done under the guidance of the Director General of Mines Safety (DGMS).

iv. No person or agency shall within fifty kilometers (by road) from coal or lignite based Thermal Power Plants, undertake or approve external dump of mining Over Burden (OB) without using at least 25 % of ash on volume to volume basis of the total materials used for external dump of overburden and same percentage in upper benches of back filling of opencast mines and this shall be done under the guidance of the Director General of Mines Safety (DGMS);

v. All agencies undertaking construction of roads of flyover bridges and reclamation and compaction of low lying areas, including Department of Road Transport and Highways (DORTH), National Highways Authority of India (NHAI), Central Public Works Department (CPWD), State Public Works Department and other State Government Agencies, shall within a period of four months from the publication of this Notification " make provisions in their tender documents, schedules of approved materials and rates as well as technical documents for implementation of this Notification, including those relating to soil borrow area or pit".

vi. The pond ash should be made available free of any charge as is as where basis to manufacturers of bricks, blocks, tiles including clay flyash bricks production manufacturer's units, farmers, central and the state road construction agencies, Public Works Department and to agencies engaged in backfilling or stowing of mines.

Though, flyash utilisation has gained momentum progressively over the years, further efforts are required to explore new areas of ash utilisation. With suitable safeguards, mine backfilling including disposal of flyash in abandoned quarries and road construction specially in the construction of National Highways and Expressways could be the major mode of flyash utilisation in the near future as these areas have vast potential. It would perhaps be desirable that the concerned Ministries should take steps in sorting out the bottlenecks such as declaring a list of abandoned mines, making adequate provisions in respective schedules for flyash utilisation by the Indian Road Congress & construction agencies etc.

MoEF & CC vide letter dated 01.03.2019 asked CPCB to come out with guidelines based on Odisha Pollution Control Board experience for reclamation of low lying areas and abandoned quarries with ash as recommended by the Expert Committee that was constituted by Niti Aayog vide O.M. No. 25 (11)/2014-Minerals dated 12.06.2018 for developing a focus strategy for best utilisation of fly ash to manufacture end products recommended.

The scope of guidelines covers transportation and disposal of flaysh in low lying areas and abandoned quarries in an environmentally friendly manner.

4.0 Loading/unloading and transportation of flyash

4.1 Current Practice for Handling & Disposal of Flyash & Bottom ash (within the power plant)

Flyash is collected in dry form from ESP hopper and disposed either in dry form or through wet slurry form. While, bottom ash collected at the bottom of boiler and is disposed in wet slurry form into the ash ponds.

Following technologies are conventionally used for handling & disposal of flyash and bottom ash collected from ESPs hoppers and boiler bottom respectively within the plant or upto the ash pond area:

I. Dry Pneumatic conveying
II. Dry (moist) Conveying system through belt conveyor/tube belt conveyor
III. High concentration slurry disposal system
IV. Medium concentration slurry disposal system
V. Lean concentration slurry disposal system

Amongst the above technologies, Dry Pneumatic conveying, Medium concentration slurry disposal system, High concentration slurry disposal system, and Dry (moist) Conveying system through belt conveyor/tube belt conveyor are preferable as compared to Lean concentration slurry disposal system.

The dry ash is typically conveyed pneumatically from the ESP or filter fabric hoppers to storage silos where it is kept dry, pending utilization or further processing, or to a system where the dry ash is mixed with water and conveyed (sluiced) to an on-site storage pond. Fly ash is stored in silos, domes and other bulk storage facilities. Fly ash can be transferred using air

slides, bucket conveyors and screw conveyors, or it can be pneumatically conveyed through pipelines under positive or negative pressure conditions.

Dry fly ash collected is also be suitably moistened with water and wetting agents, as applicable, using specialized equipment (conditioned) and hauled in covered dump trucks for special applications such as structural fills. Water conditioned fly ash can also be suitably stockpiled at jobsites. Exposed stockpiled material must be kept moist or suitably covered to prevent fugitive emission.

The dry bottom ash removal and its transportation is certainly more environment friendly, compared to that of wet ash removal and transport system.

4.2 Guidelines for loading, unloading, storage, transportation of flyash

The power plants need to maximise dry collection of fly ash & bottom ash and also adopt adequate measures to prevent fugitive dust emission during loading, unloading, storage, transportation and various uses of dry as well as ash bottom ash and pond ash. Following guidelines are, therefore, suggested for prevention of pollution and augmentation of flyash utilisation

4.2.1 Maximise dry collection of fly ash and bottom ash

a. Coarse fly ash from first field of ESP hoppers need to be collected and stored separately.

b. Fine fly ash from second field onwards of ESP Hoppers should be collected separately. For some specific usage, fine fly ash may be passed through Classifier for further separation of fine fly ash and stored in separate silo.

c. Bottom ash which is not utilised presently could also be collected in dry form and converted into a valuable resource if processed to match the end use specification. Wet collection & disposal of bottom ash should be minimised as far as possible

4.2.2 Loading, Unloading and Storage

Installation of Bag Filters with dry flyash collection and storage in Silos at loading and unloading points are standard practices at both locations i.e loading at power plant site as well as at the unloading point at user's site. Suggestions for further improvement in existing practices are as under:

a. Current practice of loading of fly ash in Bulkers/Tankers requires improvement at the stage of loading of fly ash in Tankers. The opening of telescopic chutes at the loading end should be air tight and confined to avoid fugitive dust emission.

b. The Pollution Control Equipment / Cascade Filters, attached with fly ash loading chute should be periodically cleaned along with regular scheduled maintenance of bag filter to avoid choking and malfunctioning of Bag Filter. It would mitigate the dust emission during loading of fly ash.

c. Malfunctioning of level sensors can be avoided, with regular maintenance, to prevent over filling of fly ash in Tankers .

d. The Weigh Bridge to be installed under fly ash loading chute to fill just the required quantity of fly ash in tankers so that overflow/spillage of fly ash in open areas is avoided which otherwise results in heavy fugitive emission all around.

e. Opening of tankers need to be properly locked during transportation of fly ash. Automatic opening / closing system need to be installed without fail.

f. Current practice of unloading of fly ash from tanker to storage hopper through pneumatic system is fairly good. Otherwise, the leakage of fly ash will occur at bends and joints of transportation pipe line. The fly ash being abrasive in nature causes damage at bends and joint locations. Fly ash should, therefore be transported through PVC coated pipes to avoid abrasion otherwise it may lead to leakage of flyash. The mechanical unloading system should be envisaged to avoid high pressure and dust leakage from unloading pipe lines. As far as possible, number of bends should be minimised.

g. The fly ash storage silo should be of or coated with anti-abrasive or anti-corrosive material. It is better to provide concrete silo/hopper to avoid leakages.

h. Proper functioning of all the level sensor of Storage Hopper to be ensured to avoid any possible spillage from Hopper opening.

i. The Bag Filter made of anti-abrasive material/cloth be provided with telescopic chute.

j. Dumping of ash in Ash pond should be done mechanically in moist condition so that ash does not get air borne and pose fugitive dust problem.

k. The bottom ash discharged from boiler bed, may be transported pneumatically in dry form / in slurry form to the ash pond

4.2.3 Transportation

Fly ash transportation has many challenges like distance to be transported, form of ash i.e. dry or wet ash, user's requirement, economic feasibility, requirement of surrounding vicinity and many other site specific issues. In any case, control of dust emission during transportation is prime concern and more challenging being a non-point source of pollution and larger area coverage due to movement from one place to other passing through various receptors. As flyash is used by different users for different purposes such as cement manufacturing, brick manufacturing, mine back filling, road construction and filling of low lying area, the handling and transportation have to accordingly decided. Following modes of transportation and precautions are suggested for mine back filling and development of low lying areas by disposal of flyash or bottom ash to avoid fugitive dust emission:

a. Transportation for abandoned mine back filling

I. Pipe conveyors, wherever feasible, based on the topography of the area should be used.

II. Tankers/ railway wagons/ bulkers or mechanically designed covered trucks need to be used

III. Thermal Power Plants using wet ash disposal, if permitted can transport ash slurry directly to abandoned mine through ash slurry pipe line.

b. Transportation for filling of low lying area

I. Tankers/ bulkers or mechanically designed covered Trucks need to be used.

In no case, flyash or bottom ash shall be transported by open trucks / trollies irrespective of distance or end use. Thermal power plants and fly ash user agency shall collectively ensure that fly ash or bottom ash is transported in environmentally sound manner by following the guidelines mentioned in para 4.2.3 & 4.2.4.

4.2.4 General Code of Practices for Maintenance of roads, vehicles and conditioning of flyash

a. Roads inside power plant and that of flyash user agency should be paved and plantation of adequate width should be done at both sides. Mechanised road sweepers should be deployed. In addition, adequate arrangements for water sprinkling should be made to suppress fugitive dust emission, if any.

b. Thermal power plants and user agencies should make arrangements (two stages) for washing of wheels of the vehicles (bulkers/trucks) before deployed for fly ash ransportation.

c. Pond ash to be transported should be conditioned with water to maintain minimum of 15% moisture at the disposal point so that ash does not get air borne and cause fugitive emission.

d. Adequate free board in trucks should be kept to avoid overflow/spillage during transportation.

e. In case of any spillage enroute during transportation of fly ash, the agency shall ensure that spilled ash is collected and transported to the disposal/usage site immediately.

f. All the bulkers and trucks responsible for carrying fly ash should be with valid Pollution Under Control certificates.

g. Provision should be preferably made for weighing of fly ash loaded into tankers/ railway wagons/bulkers etc under the silo.

h. The speed limit of vehicles carrying flyash should be strictly enforced and it should not exceed 40 km per hour.

i. State Pollution Control Boards shall clearly indicate mode of transportation and method of loading and unloading while granting the consent.

j. Transportation of flyash through thickly populated areas should be avoided as far as possible.

k. General awareness/ training programmes be organised regularly for tanker operating staff like drivers and cleaners on the impact of hazards of fly ash.

5.0 Reclamation of Low Lying area using Ash

Filling of Low lying areas inside the plant premises and outside within 300 km. of power plant may be taken up using ash. Low lying area reclamation with ash should be taken up adopting standard practices as per 2015 technical specification mentioned in NTPC Policy. Following steps should be taken up prior to initiate low lying area developmental activities.

5.1 Preconditions:

5.1.1 **Consent from land owner:** Consent/ permission should be obtained in writing from the land owner before start of work.

5.1.2 **Permission from Regulatory authority:** Power plant/ land owner/ agency shall obtain statutory permission from regulatory authorities such as SPCB as per the requirement.

5.1.3 **Prevention of pollution:** Suitable methods should be adopted and necessary arrangement should be made to prevent pollution during excavation of pond ash at ash pond, filling area and during transportation of ash.

5.1.4 **Soil Cover on the top of ash fill:** As per the MOEF&CC gazette notification of ash utilization dated 14-09-1999 and as amendment on dated 27-08-2003 and 03-11-2009, the soil required for soil cover shall be excavated from land fill site itself and kept separately before taking for ash filling. If it is not possible to do so, only the minimum quantity of soil required for the purpose of cover shall be excavated from the soil borrow area. The voids so created due to removal of soil shall be filled up with ash with proper compaction and covered at top with soil cover. About 300-500 mm thick soil layer shall be placed over the ash fill area. This should be done as an integral part of low lying area development work.

5.1.6 **Restrictions :**

Reclamation of area by ash shall not be permitted in the following areas :

i. Flood plain area/Ecologically Sensitive Areas.
ii. Agriculture land / area.
iii. Reclamation of Forest land / area is permissible only if clearance from MoEF&CC as per Forest Conservation Act, 1980 is available.
iv. Gochar Kisan Land.

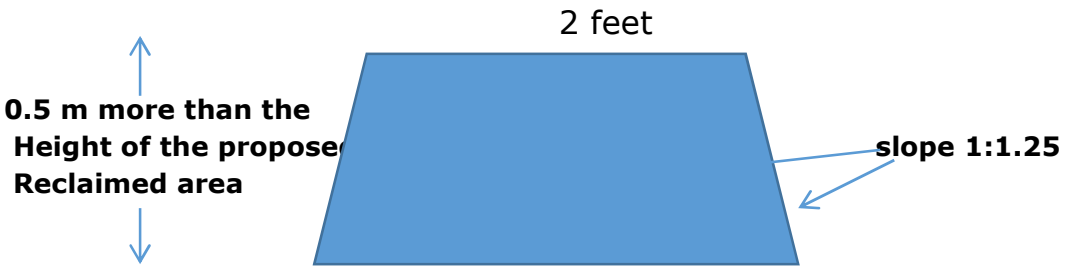
5.2 Preparation of filling area

5.2.1 The entire area meant to receive the ash and earth filling shall be stripped by minimum 150 mm. The exact depth of stripping shall be decided by the Engineer-in-Charge depending upon nature of top soil and the vegetation present. All organic matter, vegetation, roots, stumps, bushes, rubbish, swamp materials, etc. shall be removed from the site. The stripping material and other unsuitable materials as referred above shall be kept away from the area to be filled up so that these do not get mixed up with filling material and disposed off to a place as decided by the Engineer-in-Charge.

5.2.2 Levelling

All existing undulations, holes, cavities and excavations made for plate load rests and other soil investigations, etc. shall be filled with pond ash having requisite moisture content. The ash thus filled shall be compacted with the help of vibratory rollers so as to achieve dry density of not less 95% as per I.S–2720 (Part-VII). This would result in a levelled surface upon which layer wise filling of compacted ash can be done.

5.2.3 Protection of pond or water body adjoining or within the working site: If any pond or water body exists within or adjoining the low lying area /quarry then an earthen embankment of the cross-section as given in the Figure below be constructed around the pond or water body to protect it from
spilling of ash or ingress of surface runoff into it.



Cross- section of water body protection embankment

The soil used for the embankment should neither be granular nor black cotton soil. It should be of good quality for geo-technical application. Soil should be compacted to 95% proctor by Vibratory Roller of 15 T minimum capacity, in the layers of 25-30 cm and the optimum moisture content determined before execution of work. After attaining the desired height, the disposal area should be thoroughly compacted, graded followed by soil cover at least 15 cm thickness for proper reclamation of the land by grass turfing or appropriate plantation.

5.3 Excavation of pond ash from borrow area

5.3.1 Borrow Area-location

The location and permissible depth of excavation of the Borrow areas for pond ash shall be got specifically approved from concerned Thermal Power Station. The boundaries and permissible depth of excavation so approved shall be strictly followed and no deviation shall be allowed. Similarly, routes for movement of all ash transportation vehicles, water tankers, equipment, etc. shall be got approved from Thermal Power Station. These shall be strictly followed and no deviation shall be allowed.

The excavation surfaces and surface of waste materials shall be left in a reasonably smooth and even condition. All the excavations within the ash pond shall be at a minimum slope of 4 (Horizontal): 1(Vertical)

5.3.2 Site Clearance

All areas required for borrowing shall be cleared of all trees and stumps, roots, bushes, rubbish and other objectionable material. Particular care shall be taken to exclude all organic matter from the ash to be placed in the fill. The cleared areas shall be maintained free of vegetation growth during the progress of the work.

5.3.3 Stripping

Borrow area shall be stripped of top layer by a depth of minimum 150 mm. The exact depth of stripping shall be decided by the Engineer-in-charge depending upon nature of top layer and the vegetation present.

5.3.4 Borrow area watering & dewatering

The natural moisture content of material in the borrow areas as well as the optimum moisture corresponding to the Proctor's maximum dry density for the material in the particular borrow area shall be obtained from laboratory tests. Additional moisture, if required, shall be introduced into the borrow area by watering well in advance of excavation to ensure uniformity of moisture content. If in any borrow area before or during excavation there is excess moisture, steps shall be taken to reduce the moisture by the selective excavation to secure the materials of required moisture content by excavating drainage ditches, by all owing adequate time for drying or by other means. To avoid formation of pools in the borrow areas during excavation operations, drainage ditches from borrow areas to the nearest outlets shall be excavated so as to obtain homogeneous mix. In general, all materials from a particular borrow area shall be mixture of materials obtained for the full depth of cut.

5.3.5 Earth cover in Borrow Area

It shall be the responsibility of Thermal Power plant to arrange sweet soil from approved external borrows areas. The earth cover material shall consist of sandy loam free of admixture of stiff clay, refuse, stumps, roots, rock, bushes, weeds or any other material which would be detrimental to the proper development of vegetation growth. It shall not contain stone of size 25 mm and over . The loamy top soil shall be of healthy crops, grass or other plant growth, that is of good quality and reasonably free draining. Other specifications for Borrow area e.g. site clearance, stripping, Borrow area watering/De-watering etc. shall be as per relevant clauses of Borrow area for ash as outlined above i.e clause nos. 5.3.1 to 5.3.4.

5.4 Filling with pond ash

5.4.1 Placement

After the area has been prepared and levelled, pond ash excavated from Borrow areas having required moisture content shall be placed in layers not exceeding 300 mm in compacts thickness. The placing operations shall be such that in strips of 10-15 m of the material when compacted in the fill will be blended sufficiently to produce specified degree of compaction and stability. No stones, cobbles or rock fragments, having maximum dimensions more than 100 mm shall be placed in the fill. Stones and

cobbles shall be removed either at the borrow pit site before it is used as soil cover.

5.4.2 Procedure

The material shall be placed in the fill in continuous horizontal layers, stretching right across the whole section, not more than 300 mm in compacted thickness and rolled as herein specified. The length of one layer shall not exceed 150 meters at one stretch. The layers shall be compacted in strips overlapping not less than 600 mm, if the rolled surface of any fill is found to be too wet for proper compaction, it shall be raked up, allowed to dry, or shall be worked with a harrow or any other approved equipment to reduce the moisture content to the required amount and then it shall be re-compacted before the next layer of ash is placed. Ash surfaces are likely to become dry in short intervals especially during hot and dry weather and hence enough moisture shall be added between difference passes to ensure proper compaction

5.4.3 Compaction

The compaction of each layer shall be carried out so as to achieve maximum in–situ dry density 95% of maximum dry density (MDD) of the material found out as per I.S 2720 (Part VII). To achieve maximum compaction level use of vibratory rollers shall be made. Required number of passes shall be made so as to achieve desired compaction. Number of passes required shall be verified through trials tests before actual execution of work. The broad specifications of vibratory rollers required for the purpose is as follows:

a)Static Weight = 6 to 10 t
b)Static Linear Load = 20 – 35 kg/cm
c)Frequency = 18 – 30 Hz (1100 to 1800 vibrations/ minute)
d)Amplitude of vibrations = 0.5 mm to 1.5 mm

5.4.4 Moisture control

So far as practicable, the materials shall be brought to the proper moisture content in the borrow area before excavation. If additional moisture is required, it shall be added at the fill site by sprinkling water before rolling the layer. Thermal Power Plant shall make arrangements for supply of water to the borrow areas as well as to the fill area. If the moisture content is more than requirement, the material shall be spread and allowed to dry

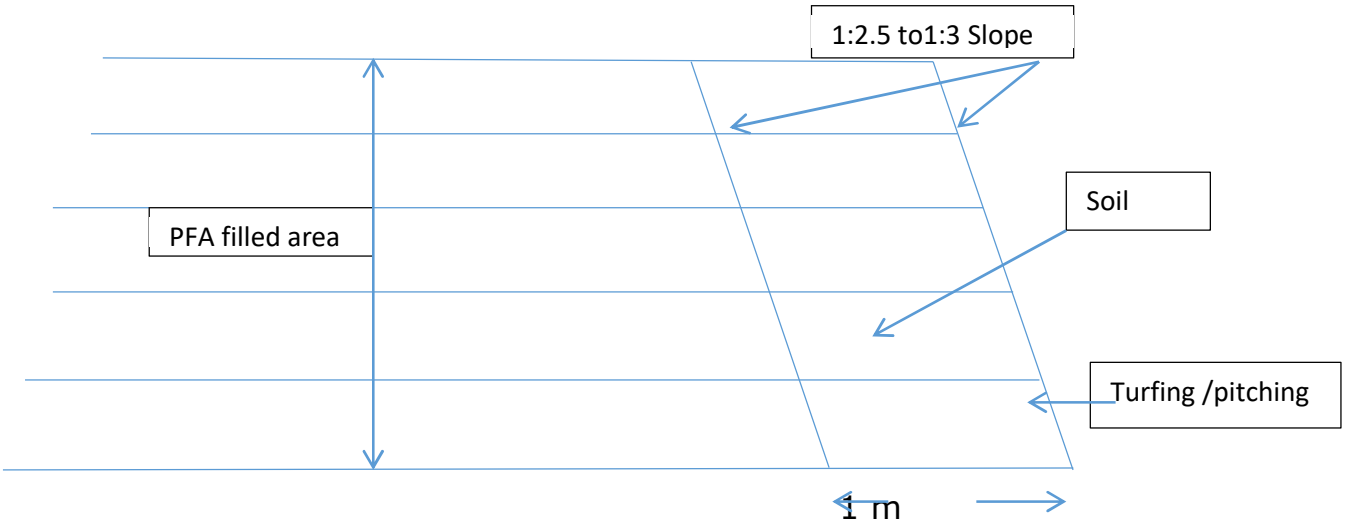
before rolling. The moisture content shall be at most uniform throughout the layer of material and ploughing or other methods of mixing to obtain uniform distribution. If the moisture content is more or less than the range of the required moisture content, or if it is not uniformly distributed throughout the layer, rolling shall be stopped, and shall be started again only when the above conditions are met with.

Fill materials shall be placed only when the weather conditions are satisfactory to permit accurate control of the moisture content in the materials.

5.4.5 **Placement of earth cover in filing area**

Earth cover shall be laid simultaneously with the laying of compacted ash layers and on side slopes. As in the case of ash layers, compacted thickness of earth layers shall not be exceeding 300 mm. As far as top cover of earth is concerned, after the area has been covered with compacted ash up to 500 mm below the required finished level of the area, a compacted layer of 500 mm thickness of suitable earth shall be placed over ash surface. This cover shall be placed in layers, each layer shall be of 250 mm in compacted thickness.

The combined excavation and placing operations shall be such that the materials when compacted in the fill will be blended sufficiently to produce specified degree of compaction on stability. No stones, cobbles or rock fragments, having maximum dimensions more than 25 mm shall be placed in the earth cover. Such stones or cobbles shall be removed either at the borrow pit orbefore it is used as Soil Cover.



Exposed boundary configuration

Other requirements of earth cover laying shall be similar to those of ash laying i.e. as outlined in 5.4.1 to 5.4.4 above.

5.5 Prevention of Pollution

It shall be responsibility of thermal power plant or his contractor that no air borne and water borne pollution shall occur during all stages of operations such as in Borrow areas, during transportation of ash/ earth, during placement of fill material etc. All measures such as water sprinkling covering moist ash/ earth with tarpaulins in open trucks, etc., shall be taken to done care of above.

6.0 Disposal of flyash in voids of abandoned mines

As per notifications 1999 and 2009, power plant shall undertake or approve stowing of mines without using at least 25% of fly ash on weight to weight basis, of the total stowing materials used. Mine void filling on pilot basis is being carried out at the power plants of NTPC Ltd., Bhushan Steel and NALCO in Odisha with prior permission from MoEF & CC and OSPCB. Based on their experience and study conducted by CMPDIL, Ranchi for NTPC Talcher, following methodology is suggested for filling of mine voids with flyash.

6.1 The power plant authority shall carry out following study prior to taking up ash disposal activities in mine void to ensure no change/damage/deterioration in water quality and hydrology in and around the proposed area:

- Ash Characterisation and Leachate Study (Table 1.1)
- Techno-Economic Feasibility Study for disposal of ash into the Quarry
- Topographical Survey of Pipeline Corridor & Mine Void area
- Feasibility of transportation of ash to mine void
- Geotechnical study of the Pipeline Corridor & Mine Void area
- Pre and post filling mine water quality including leachability of metals (Table 1.1)

6.2 Mode of ash transportation to mine void area

One of flowing mode of transport actions of flyash shall be used depending upon the topography of the area:

1. Pipeline using pneumatic conveying system

2. Dumpers/ Trucks
3. Merry Go Round (MGR) System
4. Belt Conveyors in case of dry ash disposal
5. Wet ash (lean slurry or high concentration slurry) through pipeline

6.3 Monitoring:

6.3.1 Regular environmental monitoring to be undertaken during the period of disposal of ash into mine void as well as after the reclamation of mine void. The detailed monitoring programme is given in Tables below:

Table 1.1 : Proposed Monitoring Programme during Disposal of Ash

Samples	Parameters to be Analysed	Frequency
Ash Samples	Chemical Parameters (%): SiO_2, Al_2O_3, Fe_2O_3, K_2O, TiO_2, CaO, MgO, Na_2O, P_2O_5, SO_3 Trace Elements (mg/kg, using TCLP Test): As, Ba, Cd, Co, Cr, Cu, F, Fe, Hg, Mn, Ni, Pb, Zn Radio-activity (Bq/kg): ^{238}U, ^{236}Ra, ^{232}Th, ^{228}Ra, ^{230}Pb, ^{40}K, ^{137}Cs	Once before initiation of filling
Ash Leachate Analysis	Trace Elements (mg/kg, using TCLP Test): As, Ba, Cd, Co, Cr, Cu, F, Fe, Hg, Mn, Ni, Pb, Zn	Once a year
Piezometer Water Samples	Chemical Parameters (mg/l, except, pH and EC): pH, EC, TDS, Total Alkalinity, Ca, Mg, Na, K, Cl, SO_4, NO_3, PO_4, Trace Elements (mg/l): As, Ba, Cd, Co, Cr, Cu, F, Fe, Hg, Mn, Ni, Pb, Zn	Monthly
Mine Water Sample	Same as above	Monthly
Ground Water	Same as above	Twice a year - Pre-monsoon and Post-monsoon
Surface Water Samples	Same as above	Twice a year - Pre-monsoon and Post-monsoon
Soil Samples	Texture, type, pH & cation exchange capacity. Trace Elements (mg/l): As, Ba, Cd, Co, Cr, Cu, F, Fe, Hg, Mn, Ni, Pb, Zn	Once a year

Survey of Flora and Fauna	• Listing of Flora (herbs, shrubs and trees) and Fauna (soil invertebrates and other animals) based on field observations and review of information available • Analysis of trace elements in plants (herbs, shrubs and trees), the invertebrates • Analysis of trace elements in aquatic fauna from the mine void filled with fly ash • Bio-accumulation and Bio-magnification tests	Once in two years

Table 1.2: Proposed Monitoring Programme After Reclamation of Mine void

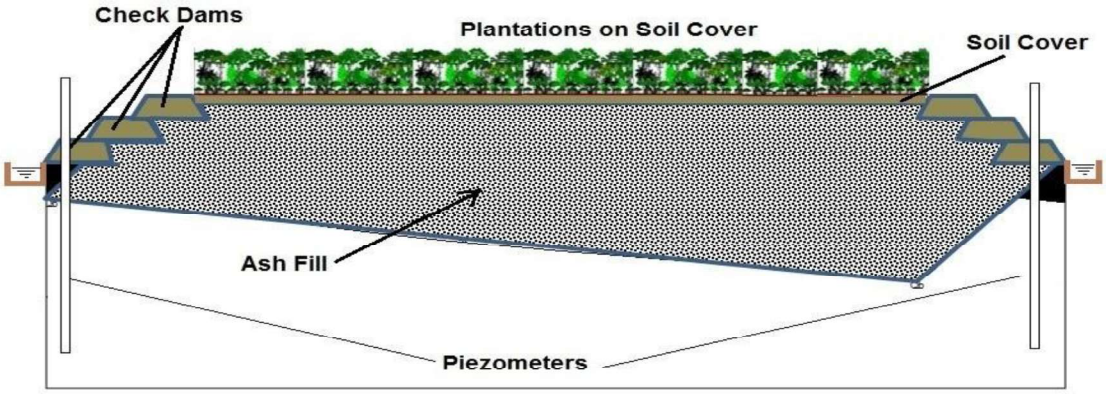
Samples	Parameters to be Analysed	Frequency
Piezometer Water Samples	Chemical Parameters (mg/l, except, pH and EC): pH, EC, TDS, Total Alkalinity, Ca, Mg, Na, K, Cl, SO_4, NO_3, PO_4, Trace Elements (mg/l): As, Ba, Cd, Co, Cr, Cu, F, Fe, Hg, Mn, Ni, Pb, Zn	Twice a year - Pre-monsoon and Post-monsoon
Ground Water Samples	Same as above	Once a year - Pre-monsoon
Surface Water Samples	Same as above	Once a year - Pre-monsoon
Survey of Flora and Fauna	• Listing of Flora (herbs, shrubs and trees) and Fauna (soil invertebrates and other animals) based on field observations and review of information available • Analysis of trace elements in plants (herbs, shrubs and trees), the invertebrates • Analysis of trace elements in aquatic fauna from the mine void filled with fly ash • Bio-accumulation and Bio-magnification tests	Once in five years

In the event of deterioration of environmental quality, the same will be reported to concerned SPCB immediately and suitable preventive/ corrective action will be undertaken.

6.4 Reclamation of Land filled site

After the quarry is filled to the permitted height as per DGMS, the same shall be provided with a soil cover and plantation shall be done with local fast growing species (preferably trees), to make it a part of the overall

post-mining land use pattern envisaged in the mine closure plan The design of surface contours and land profile will be in consonance with the surrounding features. A three tier plantation approach (consisting of large trees, smaller trees and shrubs) will be followed for overall eco-restoration of the area. This will also help in checking the surface run-off, preventing the water from percolation and maintaining the aesthetics beauty of the surrounding in general. A conceptual diagram of the reclaimed mine void is presented below.



Conceptual Plan for Reclamation of Mine Void
(Drawing not to Scale)

During the mine void reclamation, the following measures are to be undertaken:

i. Storm water drains shall be constructed for channelizing the run-off water away from the disposal site.

ii. A 30 cm thick soil cover shall be provided to promote vegetation growth.

iii. For plantation purpose, preference shall be given to both native species and mixed culture. The species will be selected carefully from the following groups for quick reclamation under the guidance of a taxonomist:

- Tree species for fuel wood and timber
- Forestry type tree species.
- Tree species with dense foliage for shade.
- Native species.

iv. However, fruit bearing species shall be avoided.

7.0 Precaution

The following precautionary measures are required for safe working during the reclamation activity:

(i) Appropriate measures should be taken to prevent entry of cattle/livestock inside the disposal area during execution period.
(ii) Care shall be taken to avoid any kind of nuisance / inconvenience to the public due to such dumping / filling activities.
(iii) Water sprinkling for dust suppression during handling of Ash shall be ensured from being air borne.
(iv) After complete reclamation of the site, sign board shall be kept indicating the low lying land / abandoned quarry has been reclaimed with ash. This will help to propagate the message of mine void using ash.

8.0 Regulatory Procedure for Processing the Application for consideration of grant of permission for Reclamation of Low Lying Areas / Abandoned Quarries :

8.1 The activity of reclamation of Low Lying Areas / Abandoned Quarries will be regulated under the provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air Water (Prevention and Control of Pollution) Act, 1981. The stipulations specified in this guideline is consistent with the provisions of Fly Ash Notification, 1999 and amended thereafter which should be a special condition mentioned in consent order issued under the Water (Water (Prevention and Control of Pollution) Act,1974 and the Air Water (Prevention and Control of Pollution) Act, 1981. Thereafter any deviations from the guidelines shall be treated as violation of both Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 and action as deemed proper shall be taken under Consent Administration by the Board.

8.2 Necessary clearances shall be obtained from the concerned agencies such as DGMS, SPCB, IBM, MoC, etc .

Appendix

Guidelines for disposal of flyash in open cast mines along with Over Burden (OB)

As per notifications 1999 and 2009, "No person or agency shall within fifty kilometres (by road) from coal or lignite based Thermal Power Plants, undertake or approve without using at least 25 % of ash on volume to volume basis of the total materials used for external dump of overburden (OB) and same percentage in upper benches of back filling of opencast mines and this ***shall be done under the guidance of the Director General of Mines Safety (DGMS).***

The methodology as approved by Directorate General of Mine Safety (DGMS) in case of M/s JSPL & JPL (RGR/JPL/P-98(1) &(3)/Flyash/18/2014/1518 dated 31.07.2014) may be referred for filling ash in coal mines. **However, for each case separate approval of methodology from DGMS shall be sought**. Following methodology for disposal of flyash in open cast mines along with Over Burden in case of JSPL was approved by DGMS**.**

1.1 Distance of the internal/overbuden dump area from the working faces of mine shall not be less than 100 m.

1.2 The area of filling ash shall be specifically earmarked and the same shall be marked on the plan and dumping fly ash shall be carried out accordingly.

1.3 Height of each deck shall not be more than 30 m and the total height of the dump shall not exceed 90 m.

1.4 The road leading to the dump site for transportation of fly ash shall be independent from the main haul road for transporting OB to the dump site from the mine.

1.5 Method of dumping fly ash

1.5.1 The fly ash shall be dumped in alternate layers/stages, of height not exceeding 5.0 m in each layer/stage.

1.5.2 Initially a row of OB dumps not less than 15.0 m width shall be dumped having height of 5.0 m all around the area proposed for ash dump over a deck (of 30.0 m height) of only overburden dump adequately compacted. A number of such areas shall be formed in a layer/stage wherein the fly ash shall be dumped so that one dump of fly ash is separated by another with 15 m wide over burden dump.

1.5.3 Thereafter, fly ash (25%) and overburden shall be dumped within the area surrounded by such OB dumps. In this manner, the dumping shall be laid in the section/layer of 5.0 m height containing both over burden as well as fly ash so as to form a deck of height not more than 30.0 m , distance between two consecutive decks shall not be less than 30.0 m.

1.5.4 In the next section i.e. immediately above bottom section/stage, only OB dumping shall be made to ensure that the Ash is totally covered and protected from the OB dumps all around.

1.5.5 In the same manner as explained above the alternate layer/section of the over burden and over burden with fly ash shall be dumped. Each layer/stage shall be adequately compacted by dozing.

1.5.6 At the top of the dump i.e. at the final stage, the dump shall be covered with 2.0 m thick soil and adequately compacted by dozing. Adequate precaution against rain fall shall be taken by way of plantation, geo-synthetic, or jute/coir reinforcement and formation of gully drains along the slope of the dump and formation of toe walls and peripheral drains as suggested by the scientific agency conducing geo-technical study. The precaution measures shall periodically be checked for its efficacy.

1.5.7 Plan and section in suitable scale (1:2000) shall be maintained showing the details of the dump both external and interval, height of each deck and dump, distance between the dumps containing fly ash and also the distance from the active working faces, plantation done, gully drains, peripheral drains, toe walls, etc. Such plan shall be signed by the Surveyor and countersigned by the Manager as prescribed in the statute.

1.5.8 Code of practices for transportation, dumping compaction of fly ash as mentioned in para 5(4.2.3 & 5.4.3 of main guidelines), shall be implemented.

1.5.9 **1.6 Dump slope management**

1.6.1 The sides of the OB dumps shall be kept benched and height thereof shall not exceed 30.0 m at an angle of slope not exceeding the angle of repose of the dumped material or 28° whichever is less.

1.6.2 Width of the OB dump shall not be less than 40.0 m which shall also be compacted. The benches shall be laid in such a manner that the overall slope of the dump shall not exceed 21° from horizontal.

1.6.3 The toe of the OB dumps shall be protected or armored in such a manner that the sludge does not flow down into the working faces.

1.6.4 A geotechnical study shall be conducted to assess the stability of the dump and the monitoring of various parameters during the course of dumping and also thereafter till the mine is closed permanently.

1.7**Dust control measures**: The fly ash dumping including the OB dumps shall be kept moist all the time to prevent ash getting airborne. The quality of the Ash shall be chemically and physically tested at least once in every quarter.

1.8 **Surface and ground water quality monitoring**

1.8.1The surface and ground water measurement (Chemical Parameters (mg/l): pH, EC, TDS, Total Alkalinity, Ca, Mg, Na, K, Cl, SO_4, NO_3, PO_4, Trace Elements (mg/l): As, Ba, Cd, Co, Cr, Cu, F, Fe, Hg, Mn,Ni, Pb, Zn) shall be carried out once in a year (post monsoon) in consultation with the State Pollution Control Board in order to ensure that no harmful heavy metals or any other chemicals pollute the surface or ground water sources or any other water sources present in the area.

1.9 **Provision of check drains** Proper Check Drains/garland drains having width of adequate size and section shall be made around the OB dumps to ensure that the sludge or waste materials along with the ash does not go into any river, nullah, water streams or any other surface water bodies.

1.10 Impact assessment of flora, fauna, aquatic lives and habitat, water & air quality:

1.10.1 A scientific study shall be carried out by an independent scientific organization to study the impact of Ash filling on Flora, Fauna, Aquatic Life and Habitation (once during the filing and at the end of filling).

1.10.2The Monitoring of all the aforementioned parameters shall be carried out through any accredited institute/organization/Labs and monitoring report shall be submitted to SPCB and DGMS.

1.10.3 A dedicated team of qualified persons headed by senior officer at the level of General Manager shall be established in the mine level, who shall be responsible for the entire ash filling operation, conducing different studies and shall maintain all records as prescribed.

1.10.4Record of every analysis and study shall be maintained in a bound page register kept for the purpose and the same shall be signed by the person in-charge of the operation and countersigned by the manager of the mine. Records shall also be maintained showing the details about the slope of each dump, quantity of ash filled, quantity of overburden removed, etc.

1.10.5Risk Analysis about the risk arising out of ash filling operation shall specifically be conducted at regular intervals and Safety Management Plan including the control mechanism shall be prepared as per the guideline contained in DGMS(Tech)(S&T) Circular No.13 of 2002 dated 31.12.2002 and implemented and the same shall be reviewed time to time

1.10.6In case, any adverse impact is observed, it should be brought to the notice of the DGMS and also to the State Pollution Control Board including the Environment and Forest Ministries of the State and Central Government. No further use of fly ash shall be done in the mine till permitted in writing afresh from DGMS.

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रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
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केंद्रीय विद्युत प्राधिकरण
अधिसूचना

नई दिल्ली, 25 जनवरी, 2023

सं. केविप्रा-टीएच-17-13/4/2022-टीईटीडी प्रभाग.—विद्युत (पूर्व प्रकाशन के लिए प्रक्रिया) नियम, 2005 के नियम (3) के उप-नियम (2) के साथ पठित विद्युत अधिनियम, 2003 (2003 का 36) की धारा 177 की उप-धारा (3) द्वारा यथा अपेक्षित केंद्रीय विद्युत प्राधिकरण (कोयला आधारित ताप विद्युत उत्पादन इकाइयों का लचीला संचालन) विनियम, 2022 का प्रारूप को छह दैनिक समाचार पत्रों में प्रकाशित किया गया था, जिसमें उक्त प्रारुप विनियमों में अंतर्विष्ट समाचार पत्र की प्रतियां जनता को उपलब्ध कराई गई तारीख से 46 दिनों की अवधि के समाप्त होने से पूर्व इसके द्वारा प्रभावित होने वाले सभी संभावित व्यक्तियों से आक्षेप और सुझाव मांगे गए थे;

और केंद्रीय विद्युत प्राधिकरण की वेबसाइट पर सार्वजनिक सूचनाओं वाले उक्त समाचार पत्रों और उक्त प्रारुप विनियमों की प्रतियां जनता को 12 जुलाई, 2022 को उपलब्ध करा दी गई थीं;

और उक्त प्रारुप विनियमों पर जनता से प्राप्त आक्षेपों और सुझावों पर केन्द्रीय विद्युत प्राधिकरण द्वारा विचार कर लिया गया था;

अत: अब विद्युत अधिनियम, 2003 की धारा 73 के खंड (ख) के साथ पठित धारा 177 की उप-धारा (2) के खंड (ङ), के अनुसरण में , केंद्रीय विद्युत प्राधिकरण निम्नलिखित विनियम बनाता है, अर्थात्:-

1. **संक्षिप्त नाम और प्रारंभ**- (1) इन विनियमों का संक्षिप्त नाम केंद्रीय विद्युत प्राधिकरण (कोयला आधारित ताप विद्युत उत्पादन इकाइयों का लचीला संचालन) विनियम, 2023 है।

(2) ये विनियम राजपत्र में उनके अंतिम प्रकाशन की तारीख से लागू होंगे।

2. **परिभाषाएं**- (1) इन विनियमों में, जब तक कि संदर्भ से अन्यथा अपेक्षित न हो,

(क) "अधिनियम" से विद्युत अधिनियम, 2003 (2003 का 36) अभिप्रेत है;

(ख) "लचीला संचालन" से कोयला आधारित ताप विद्युत उत्पादन इकाइयों की ग्रिड की आवश्यकता के अनुसार इन विनियमों में उल्लिखित निर्दिष्ट स्तरों पर विद्युत उत्पन्न करने की क्षमता अभिप्रेत है;

(ग) "अधिकतम निरंतर विद्युत रेटिंग" से जनरेटर टर्मिनलों पर मेगा वाट में व्यक्त अधिकतम निरंतर विद्युत उत्पादन, रेटेड मापदंडों पर उत्पादन इकाइयों के विनिर्माता द्वारा गारंटीकृत है; अभिप्रेत है

(घ) "न्यूनतम विद्युत स्तर" से अधिकतम निरंतर विद्युत रेटिंग के प्रतिशत में व्यक्त न्यूनतम विद्युत उत्पादन, जिसे कोयला आधारित ताप विद्युत उत्पादन इकाई बिना तेल सहायता के लगातार बनाए रख सकती है; अभिप्रेत है

(ङ) "रैंप दर" से अधिकतम निरंतर विद्युत रेटिंग के प्रतिशत में विद्युत उत्पादन के परिवर्तन की प्रति मिनट में व्यक्त दर अभिप्रेत है ।

(2) उन शब्दों और पदों के जो इसमें प्रयुक्त और परिभाषित नहीं हैं किंतु अधिनियम और उसके अधीन बनाए गए नियमों में परिभाषित हैं, वही अर्थ होंगे जो उस अधिनियम और उसके अधीन बनाए गए नियमों में हैं।

3. **लागू होना –** ये विनियम केंद्रीय सरकार, राज्य सरकारों के स्वामित्व या नियंत्रण में या ग्रिड से जुड़ी किसी भी प्राइवेट कंपनी के स्वामित्व वाली सभी कोयला आधारित ताप विद्युत उत्पादन इकाइयों और भार प्रेषण केंद्रों पर लागू होंगे।

4. **साधरण अपेक्षाएँ -** (1) कोयला आधारित ताप विद्युत उत्पादन इकाइयों को उस स्थान पर प्रचलित परिवेशी और पर्यावरणीय परिस्थितियों की पूरी श्रृंखला के लिए इन विनियमों का अनुपालन करने के लिए, यदि अपेक्षित हो, डिजाइन या उपयुक्त रूप से रेट्रोफिट किया जाएगा।

(2) स्थापित सभी उपकरण और प्रणालियाँ, यथा लागू , विनियमों और सुरक्षा कोडों के उपबंधों का पालन करेंगी।

5. **कोयला आधारित ताप विद्युत उत्पादन इकाइयों का लचीला संचालन**- (1) कोयला आधारित ताप विद्युत उत्पादन इकाइयां इन विनियमों के अनुसार लचीला संचालन प्रदान करने में सक्षम होंगी।

(2) कोयला आधारित ताप विद्युत उत्पादन इकाइयों के लचीले संचालन का कार्यान्वयन समय-समय पर प्राधिकरण द्वारा विनिर्दिष्ट चरणबद्ध योजना के अनुसार होगा।

(3) सभी भार प्रेषण केंद्र अपने अधिकार क्षेत्र के अधीन कोयला आधारित ताप विद्युत उत्पादन इकाइयों को, इन विनियमों में विनिर्दिष्ट लचीले संचालन क्षमताओं पर विचार करते हुए, शेड्यूल करेंगे ।

6. **लचीले संचालन के लिए कोयला आधारित ताप विद्युत उत्पादन इकाइयों की न्यूनतम विद्युत स्तर की क्षमता**- कोयला आधारित ताप विद्युत उत्पादन इकाइयों में चालीस प्रतिशत के न्यूनतम विद्युत स्तर का लचीला संचालन क्षमता होगा।

परंतु उत्पादन इकाइयां जो पचपन प्रतिशत के न्यूनतम विद्युत स्तर को प्राप्त करने में सक्षम नहीं हैं, उन्हें इन विनियमों की अधिसूचना के एक वर्ष के भीतर यह सक्षमता प्राप्त करनी होगी।

परंतु यह और कि उत्पादन इकाइयां जो चालीस प्रतिशत के न्यूनतम विद्युत स्तर को प्राप्त करने में सक्षम नहीं हैं, उन्हें इन विनियमों के विनियम 5 के उप-विनियम (2) में उल्लिखित चरणबद्ध योजना के अनुसार यह सक्षमता प्राप्त करनी होगी ।

7. **लचीला संचालन के लिए कोयला आधारित ताप विद्युत उत्पादन इकाइयों की रैम्प दर क्षमताएं**- (1) कोयला आधारित ताप विद्युत उत्पादन इकाइयों में अधिकतम निरंतर विद्युत रेटिंग के सत्तर प्रतिशत से सौ प्रतिशत के बीच उनके संचालन के लिए न्यूनतम तीन प्रतिशत प्रति मिनट की रैंप दर क्षमता होगी और अधिकतम निरंतर विद्युत रेटिंग के पचपन प्रतिशत से सत्तर प्रतिशत के बीच उनके संचालन के लिए न्यूनतम दो प्रतिशत प्रति मिनट की रैंप दर क्षमता होगी।

परंतु उत्पादन इकाइयां जो इस विनियम का अनुपालन करने में सक्षम नहीं हैं, इन विनियमों की अधिसूचना के एक वर्ष के भीतर इसका अनुपालन करेंगी।

(2) कोयला आधारित तापीय विद्युत उत्पादन इकाइयां इन विनियमों के विनियम 5 के उप-विनियम (2) में उल्लिखित चरणबद्ध योजना के अनुसार अधिकतम निरंतर विद्युत दर के चालीस प्रतिशत से पचपन प्रतिशत के बीच उनके संचालन के लिए न्यूनतम एक प्रतिशत प्रति मिनट की रैंप दर क्षमता प्राप्त करेंगी।

8. **विनियमों का शिथिलीकरण** - प्राधिकरण, मामला दर मामला आधार पर, प्राधिकरण को निर्दिष्ट मामले के संबंध में लेखबध्द किए जाने वाले कारणों के लिए और आदेश द्वारा इन विनियमों के किसी उपबंध कों शिथिल कर सकेगा ।

राकेश गोयल, सचिव

[विज्ञापन-III/4/असा./588/2022-23]

CENTRAL ELECTRICITY AUTHORITY

NOTIFICATION

New Delhi, the 25th January, 2023

CEA-TH-17-13/4/2022-TETD Division.—Whereas the draft of the Central Electricity Authority (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2022 was published in six newspaper dailies, as required by sub-section (3) of Section 177 of the Electricity Act, 2003 (36 of 2003) read with sub-rule (2) of rule 3 of the Electricity (Procedure for Previous Publication) Rules, 2005 for inviting objections and suggestions from all persons likely to be affected thereby, before the expiry of the period of forty-six days, from the date on which the copies of the newspaper containing the said draft regulations were made available to the public;

And whereas copies of the said newspapers containing the public notices and the said draft regulations on the website of the Central Electricity Authority were made available to the public on the 12th July, 2022;

And whereas the objections and suggestions received from the public on the said draft regulations were considered by the Central Electricity Authority;

Now, therefore, in pursuance of clause (e) of sub-section (2) of Section 177 of the Electricity Act, 2003 read with clause (b) of Section 73 of the said Act, the Central Electricity Authority hereby makes the following regulations, namely:

1. **Short title and commencement.-** (1)These regulations may be called the Central Electricity Authority (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023.

(2)They shall come into force on the date of their final publication in the Official Gazette.

2. **Definitions.-** (1)In these regulations, unless the context otherwise requires,

(a) "Act" means the Electricity Act, 2003 (36 of 2003);

(b) "flexible operation" means the ability of coal based thermal power generating units to generate power at specified levels mentioned in these regulations, as per the requirement of the grid;

(c) "maximum continuous power rating" means maximum continuous output power expressed in Mega Watt at the generator terminals as guaranteed by the manufacturer of generating units at the rated parameters;

(d) "minimum power level" means the minimum output power expressed in percentage of maximum continuous power rating that the coal based thermal power generating unit can sustain continuously without oil support;

(e) "ramp rate" means the rate of change of output power, expressed in percentage of maximum continuous power rating, per minute.

(2) Words and expressions used herein and not defined but defined in the Act and the rules made thereunder shall have the meanings assigned to them in that Act and rules made thereunder.

3. **Applicability.-** These regulations shall apply to all coal based thermal power generating units owned or under control of the Central Government, State Governments or owned by any private company, connected with the grid and to the load despatch centers.

4. **General requirements.-** (1) The coal based thermal power generating units shall be designed or suitably retrofitted, if required, to comply with these regulations for full range of ambient and environmental conditions prevailing at the site.

(2) All equipment and systems installed shall comply with the provisions of statutes, regulations and safety codes, as applicable.

5. **Flexible operation of coal based thermal power generating units.-** (1) The coal based thermal power generating units shall be capable of providing the flexible operation as per these regulations.

(2) The implementation of flexible operation of the coal based thermal power generating units shall be as per the phasing plan specified by the Authority from time to time.

(3) All load despatch centers shall schedule the coal based thermal power generating units, under their jurisdiction, considering the flexible operation capabilities as specified in these regulations.

6. **Minimum power level capabilities of coal based thermal power generating units for flexible operation**.- The coal based thermal power generating units shall have flexible operation capability with minimum power level of forty percent.

Provided that the generating units which are not capable of achieving minimum power level of fifty-five percent, shall achieve the same within one year of the notification of these regulations.

Provided further that the generating units which are not capable of achieving minimum power level of forty percent, shall achieve the same as per phasing plan mentioned in the sub-regulation (2) of regulation 5 of these regulations.

7. **Ramp rates capabilities of coal based thermal power generating units for flexible operation**.- (1) The coal based thermal power generating units shall have ramp rate capability of minimum three percent per minute for their operation between seventy percent to hundred percent of maximum continuous power rating and shall have ramp rate capability of minimum two percent per minute for their operation between fifty-five percent to seventy percent of maximum continuous power rating.

Provided that the generating units which are not capable to comply with this regulation, shall comply with the same within one year of the notification of these regulations.

(2) The coal based thermal power generating units shall achieve ramp rate capability of minimum one percent per minute for their operation between forty percent to fifty-five percent of maximum continuous power rating as per phasing plan mentioned in the sub-regulation (2) of regulation 5 of these regulations.

8. **Relaxation of regulations. -** The Authority may, by an order and for the reasons to be recorded in writing, relax any provision of these regulations in respect of the matter referred to the Authority, on case to case basis.

RAKESH GOYAL, Secy.

[ADVT.-III/4/Exty./588/2022-23]

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EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

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पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय

अधिसूचना

नई दिल्ली, 31 दिसम्बर, 2021

का.आ. 5481(अ).—केन्द्रीय सरकार ने भारत सरकार के तत्कालीन पर्यावरण और वन मंत्रालय की अधिसूचना सं. का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 द्वारा कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से तीन सौ किलोमीटर के विनिर्दिष्ट व्यास के भीतर ईंटों के विनिर्माण के लिए उपजाऊ मिट्टी के उत्खनन को प्रतिबंधित करने के लिए और भवन निर्माण सामग्री के विनिर्माण में और संनिर्माण क्रियाकलाप में फ्लाई-राख के उपयोग को बढ़ावा देने के लिए निदेश जारी किए हैं;

और, प्रदूषणकर्ता भुगतान सिद्धांत (पीपीपी) के आधार पर, ऐसा करके कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों द्वारा फ्लाई-राख का 100 प्रतिशत उपयोग सुनिश्चित करते हुए और फ्लाई-राख प्रबंधन प्रणाली की संधारणीयता के लिए पूर्वोक्त अधिसूचना को और अधिक प्रभावकारी ढंग से कार्यान्वित करने हेतु, केंद्रीय सरकार ने मौजूदा अधिसूचना की समीक्षा की;

और प्रदूषणकर्ता भुगतान सिद्धांत के आधार पर पर्यावरणीय प्रतिकर निर्धारित किए जाने की आवश्यकता है;

और, विनिर्माण को बढ़ावा देकर तथा निर्माण कार्य के क्षेत्र में राख आधारित उत्पादों तथा भवन निर्माण सामग्रियों के प्रयोग को अनिवार्य करके उपजाऊ मिट्टी को संरक्षित करने की आवश्यकता है;

और, सड़क बनाने, सड़क एवं फ्लाई ओवर के रेलिंग बनाने, तटरेखा की सुरक्षा का उपाय करने, अनुमोदित परियोजनाओं के निचले क्षेत्रों को भरने, खनित स्थलों को फिर से भरने में मिट्टी की सामग्रियों से भरने के विकल्प के रूप में राख उपयोग को बढ़ावा देकर उपजाऊ मिट्टी और प्राकृतिक संसाधनों को संरक्षित करने की आवश्यकता है;

और, पर्यावरण को सुरक्षित करना तथा कोयला अथवा लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित फ्लाई राख के निक्षेपण तथा निपटान की रोकथाम करना आवश्यक है;

और, उक्त अधिसूचना में जो 'राख' शब्द का प्रयोग किया गया है उसमें कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित फ्लाई-राख और बॉटम-राख दोनों शामिल हैं;

और, केंद्रीय सरकार प्रदूषणकर्ता भुगतान सिद्धांत के आधार पर, पर्यावरणीय प्रतिकर की प्रणाली सहित राख के उपयोग के लिए एक व्यापक ढांचा लाना चाहती है;

अत: पर्यावरण (संरक्षण) नियम, 1986 के नियम (5) के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, भारत सरकार के पर्यावरण एवं वन मंत्रालय की अधिसूचना जो का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 द्वारा भारत के राजपत्र, असाधारण भाग ।।, खंड 3, उप खंड (i) में प्रकाशित का अधिक्रमण करते हुए, कोयला या लिग्नाईट आधारित ताप विद्युत संयंत्रों द्वारा राख के उपयोग के संबंध में प्रारूप अधिसूचना जो सा.का.नि. 285 (अ) तारीख 22 अप्रैल, 2021 द्वारा भारत के राजपत्र, असाधारण, भाग-2, धारा 3, उप धारा (i) में प्रकाशित की गई थी जिसमें उन सभी व्यक्तियों से जिनका इससे प्रभावित होना सामान्य है उस तारीख से, जिसको उक्त प्रारूप उपबंधों की शासकीय राजपत्र में अंतर्विष्ट प्रतियां जनता को उपलब्ध करा दी गई थी, साठ दिनों के अवसान से पूर्व आक्षेप और सुझाव आमंत्रित किए गए थे।

और उक्त प्रारूप अधिसूचना के संबंध में उससे संभावित तौर पर प्रभावित होने वाले सभी व्यक्तियों से प्राप्त आक्षेपों और सुझावों पर केंद्रीय सरकार द्वारा सम्यक रूप से विचार कर लिया गया है;

अत: पर्यावरण (संरक्षण) नियम, 1986 के नियम (5) के उप-नियम (3) के खंड (घ) के साथ पठित पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 3 की उप-धारा (1) और उप-धारा (2) के खंड (v) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए और अधिसूचना का.आ. 763 (अ) तारीख 14 सितम्बर, 1999 का उन बातों के सिवाय अधिकांत करते हुए जिन्हें ऐसे अधिक्रमण से पूर्व किया गया है या करने का लोप किया गया है, केन्द्रीय सरकार कोयलों या लिग्नाईट आधारित ताप विद्युत संयंत्रों से राख के उपयोग के संबंध में निम्नलिखित अधिसूचना जारी करती है, जो इस अधिसूचना के प्रकाशन की तिथि से प्रवृत्त होगी, अर्थात्

क. फ्लाई-राख और बॉटम-राख का निपटान करने हेतु ताप विद्युत संयंत्रों (टीपीपी) के उत्तरदायित्व.-

(1) प्रत्येक कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्र (जिनमें कैप्टिव और/या सह-उत्पादन केंद्र शामिल हैं या दोनों) की यह प्राथमिक जिम्मेदारी होगी कि वह अपने द्वारा सृजित राख (फ्लाई-राख और बॉटम-राख) का उप पैरा (2) में दिए गए पारि-अनुकूल तरीके से 100 प्रतिशत उपयोग सुनिश्चित करे;

(2) कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्रों से सृजित राख का उपयोग केवल निम्नलिखित पारि-अनुकूल प्रयोजनों के लिए किया जाएगा, अर्थात्:-

(i) फ्लाई राख पर आधारित उत्पाद अर्थात्: ईंट ब्लॉक टाइल, फाइबर सीमेंट शीट, पाइप, बोर्ड, पैनल का विनिर्माण;

(ii) सीमेंट विनिर्माण, रेडी-मिक्स कंक्रीट;

(iii) सड़क निर्माण और फ्लाई-ओवर के रेलिंग का निर्माण, राख और जिओ-पॉलीमर आधारित निर्माण सामग्री;

(iv) बांध का निर्माण;

(v) निचले क्षेत्र को भरना;

(vi) खनन कार्य से रिक्त हुए स्थान को भरना;

(vii) सिंटर्ड या शीत–बद्ध राख संचय का विनिर्माण;

(viii) मृदा परीक्षण के आधार पर नियंत्रित तरीके से कृषि;

(ix) तटीय जिलों में तटरेखा संरक्षण संरचनाओं का निर्माण;

(x) अन्य देशों को राख का निर्यात;

(xi) समय-समय पर यथाधिसूचित किसी अन्य पारि-अनुकूल प्रयोजन के लिए।

(3) अध्यक्ष, केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति गठित की जाएगी जिसमें पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी), विद्युत मंत्रालय, खान मंत्रालय, कोयला मंत्रालय, सड़क परिवहन और राजमार्ग मंत्रालय, कृषि अनुसंधान एवं शिक्षा विभाग, सड़क कांग्रेस संस्थान तथा राष्ट्रीय सीमेंट एवं भवन सामग्री परिषद के प्रतिनिधियों को सदस्यों के रूप में शामिल किया जाएगा, जिसका प्रयोजन राख के उपयोग के पारि-अनुकूल तौर-तरीकों की जांच करना, उनकी समीक्षा एवं अनुशंसा करना तथा प्रौद्योगिकीय विकासों तथा पणधारी से प्राप्त अनुरोधों के आधार पर उप-पैरा (2) में यथोल्लिखित ऐसे तौर-तरीकों की सूची में समिति द्वारा सुझाए गए तौर-तरीकों को शामिल करना या किसी तौर-तरीके को सूची से हटाना या उसमें संशोधन करना है। जब भी इस प्रयोजन के लिए अपेक्षित हो, यह समिति राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति, ताप विद्युत संयंत्र और खानों के प्रचालकों को आमंत्रित कर सकती है। इस समिति सिफारिश के आधार पर, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय ऐसे पारि-अनुकूल प्रयोजन प्रकाशित करेगा।

(4) प्रत्येक कोयला या लिग्नाइट आधारित ताप विद्युत संयंत्र उस वर्ष के दौरान सृजित राख (फ्लाई-राख और बॉटम-राख) का 100 प्रतिशत उपयोग करने हेतु उत्तरदायी होगा; तथापि, किसी भी स्थिति में, किसी वर्ष में राख का उपयोग 80 प्रतिशत से नीचे नहीं होगा और साथ ही, उस ताप विद्युत संयंत्र को तीन वर्ष की अवधि में 100 प्रतिशत औसत राख के उपयोग का लक्ष्य प्राप्त करना होगा :

परंतु, यह और कि पहली बार के लिए लागू तीन वर्ष के चक्र को ऐसे ताप विद्युत संयंत्रों, जहां राख का उपयोग 60-80 प्रतिशत के बीच होता है, एक वर्ष के लिए और ऐसे संयंत्रों, जहां राख का उपयोग 60 प्रतिशत से कम है, दो वर्ष के लिए बढ़ाया जा सकता है, और राख के उपयोग की प्रतिशतता की गणना के प्रयोजन के लिए वर्ष 2021-2022 में उपयोग की प्रतिशत प्रमात्रा को नीचे दी गई तालिका के अनुसार ध्यान में रखा जाएगा:

तापीय विद्युत संयंत्रों के उपयोग की प्रतिशतता	100 प्रतिशत उपयोगिता प्राप्त करने के लिए प्रथम अनुपालन चक्र	100 प्रतिशत उपयोगिता प्राप्त करने के लिए द्वितीय अनुपालन चक्र
>80 प्रतिशत	3 वर्ष	3 वर्ष
60-80 प्रतिशत	4 वर्ष	3 वर्ष
<60 प्रतिशत	5 वर्ष	3 वर्ष

परन्तु, ताप विद्युत संयंत्रों के लिए 80 प्रतिशत न्यूनतम उपयोग प्रतिशतता, क्रमश: 60-80 प्रतिशत और <60 प्रतिशत की उपयोगिता की श्रेणी के तहत आने वाले ताप विद्युत संयंत्रों के लिए प्रथम अनुपालन चक्र के पहले वर्ष और पहले दो वर्षों पर लागू नहीं होगी।

परन्तु, अनुपालन चक्र के अंतिम वर्ष में सृजित 20 प्रतिशत राख को अगले चक्र में भी ले जाया जाएगा जिसका उपयोग उस अनुपालन चक्र के दौरान सृजित राख के साथ अगले तीन वर्षों में किया जाएगा।

(5) अप्रयुक्त संचित राख अर्थात् लीगेसी राख, जिसका इस अधिसूचना के प्रकाशन से पहले भंडारण किया गया है, को ताप विद्युत संयंत्र (टीपीपी) द्वारा इस रीति से क्रमिक रूप से उपयोग में लाया जाएगा, कि लीगेसी राख को इस अधिसूचना के प्रकाशन की तिथि से दस वर्षों के भीतर पूरी तरह उपयोग कर लिया जाएगा और यह उस विशिष्ट वर्ष के चालू संचालनों के माध्यम से राख उत्सर्जन के लिए निर्धारित उपयोग लक्ष्यों से अतिरिक्त होगा।

परन्तु, निम्नलिखित प्रतिशतताओं में यथा उल्लिखित लीगेसी राख की न्यूनतम मात्रा का उपयोग तास्थानी वर्ष के दौरान कर लिया जाएगा और लीगेसी राख की न्यूनतम मात्रा की ताप विद्युत संयंत्र की संस्थापित क्षमता के अनुसार वार्षिक राख उत्सर्जन के आधार पर की जानी है।

प्रकाशन की तिथि से वर्ष	पहला	दूसरा	तीसरा-दसवां
लीगेसी राख का उपयोग (वार्षिक राख की प्रतिशतता)	कम से कम 20 प्रतिशत	कम से कम 35 प्रतिशत	कम से कम 50 प्रतिशत

परन्तु, यह और कि लीगेसी राख का उपयोग वहां अपेक्षित नहीं है, जहां राख के तालाब या डाइक स्थिर हो गए हैं और हरित पट्टी के निर्माण या पौध रोपण से पुनरूद्धार किया गया है और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड इस संबंध में प्रमाणित करेगा। किसी राख तालाब या डाइक के स्थिरीकरण और भूमि-उद्धार का कार्य, जिसमें केन्द्रीय प्रदूषण नियंत्रण बोर्ड या राज्य प्रदूषण नियंत्रण बोर्ड द्वारा प्रमाणन शामिल है, इस अधिसूचना के प्रकाशन की तारीख से एक वर्ष के भीतर किया जाएगा। अन्य सभी राख के कुंड या डाइक में शेष बचे राख का उपयोग ऊपर उल्लिखित समय-सीमाओं के अनुसार क्रमिक रूप से किया जाएगा।

टिप्पण: राख के उपयोग के लक्ष्यों को हासिल करने के लिए उप पैरा (4) और (5) के अधीन दायित्व 01 अप्रैल, 2022 की तारीख से लागू होंगे।

(6) किसी भी नए तापीय विद्युत संयंत्र (टीपीपी) में 0.1 हेक्टेयर प्रति मेगावाट (एमडब्ल्यू) क्षेत्रफल के साथ आपातकालीन या अस्थायी राख कुंड की अनुमति दी जा सकती है। राख के तालाब या डाइकों का तकनीकी विर्निदेश, केन्द्रीय विद्युत प्राधिकरण (सीईए) के परामर्श से केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा बनाए गए दिशानिर्देशों के अनुसार होगा और ये दिशानिर्देश राख के कुंड या डाइक के संबंध में इसकी सुरक्षा, पर्यावरणीय प्रदूषण, उपलब्ध प्रमात्रा, निपटान का तरीका, निपटान में जल की खपत या संरक्षण, राख जल पुनर्चक्रण और ग्रीन बेल्ट आदि के वार्षिक प्रमाणन के लिए कार्यविधि भी निर्धारित करेंगे और इस अधिसूचना के प्रकाशन की तारीख से तीन महीनों के भीतर प्रस्तुत किए जाएंगे।

(7) प्रत्येक कोयला या लिग्नाईट आधारित ताप विद्युत संयंत्र यह सुनिश्चित करेगा कि राख की लदाई, उतराई, ढुलाई, भंडारण और निपटान पर्यावरणीय दृष्टि से अनुकूल रीति से किया गया है और वायु और जल प्रदूषण की रोकथाम के लिए सभी ऐहितयात किए गए हैं और इस संबंध में स्थिति की सूचना इस अधिसूचना में संलग्न अनुबंध में संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को दी जाएगी।

(8) प्रत्येक कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, संस्थापित क्षमता पर आधारित राख के कम से कम 16 घंटों के भंडारण के लिए समर्पित शुष्क फ्लाई राख साइलोस प्रतिष्ठापित करेगा, जिनके पास पृथक पहुंच मार्ग होंगे, जिससे कि राख पहुंचाने के कार्य को सुगम बनाया जा सके। इसकी सूचना संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को उपाबंध में दी जाएगी और केन्द्रीय प्रदूषण [illegible]

बोर्ड (सीपीसीबी) या राज्य केन्द्रीय प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति द्वारा समय-समय पर निरीक्षण किया जाएगा।

(9) प्रत्येक कोयला या लिग्नाईट आधारित तापीय विद्युत संयंत्र (जिसके अंतर्गत कैप्टिव या सह उत्पादन केन्द्र भी है या दोनों), वास्तविक उपयोगकर्ता (उपयोगकर्ताओं) के हित के लिए केन्द्रीय प्रदूषण नियंत्रण बोर्ड के वेब पोर्टल या मोबाईल फोन एप्प का लिंक उपलब्ध कराकर ताप विद्युत संयंत्र के पास राख की उपलब्धता के वास्तविक आंकड़े प्रदान करेगा।

(10) राख के 100 प्रतिशत उपयोग का वैधानिक दायित्व, जहां भी लागू हो, विधि में बदलाव के रूप में माना जाएगा।

ख. राख के उपयोग के प्रयोजनार्थ, उत्तरवर्ती उप पैराग्राफ लागू होंगे .-

(1) ऐसे सभी अभिकरण (सरकारी, अर्द्धसरकारी और निजी), जो सड़क बिछाने, सड़क और फ्लाई ओवर के किनारों, तटीय जिलों में तटरेखा की सुरक्षा संरचनाओं और लिग्नाईट या कोयला आधारित ताप विद्युत संयंत्र से 300 किमी के भीतर बांधों जैसे निर्माण संबंधी कार्यकलापों में लगे हुए हैं, इन कार्यकलापों में अनिवार्य रूप से राख का उपयोग करेंगे :

परंतु इसको परियोजना स्थल पर निशुल्क पहुंचाया जाए और परिवहन लागत, ऐसे कोयला या लिग्नाईट आधारित ताप विद्युत संयंत्रों द्वारा वहन की जाए।

परंतु यह और कि ताप विद्युत संयंत्र पारस्परिक सहमत हुई शर्तों के अनुसार राख की लागत और परिवहन के लिए शुल्क ले सकता है उस मामले में जहां ताप विद्युत संयंत्र अन्य माध्यम से राख का निपटान करने में समर्थ है और ये अभिकरण इसके लिए प्रर्थाना कर सकते हैं और बिना लागत और बिना परिवहन शुल्क के राख उपलब्ध कराने के प्रावधान तभी लागू होंगे यदि उसके लिए ताप विद्युत संयंत्र उस निर्माण अभिकरण को नोटिस जारी करता है।

(2) उक्त कार्यकलापों में राख का उपयोग भारतीय मानक ब्यूरो, भारतीय रोड कांग्रेस, केन्द्रीय भवन अनुसंधान संस्थान, रूड़की, केन्द्रीय सड़क अनुसंधान संस्थान, दिल्ली, केन्द्रीय लोक निर्माण विभाग, राज्य लोक निर्माण विभागों और अन्य केन्द्रीय और राज्य सरकार के अभिकरणों द्वारा निर्धारित किए गए विनिर्देशों और दिशानिर्देशों के अनुसार किया जाएगा।

(3) तापीय विद्युत संयंत्र की 300 किलोमीटर की परिधि के भीतर अवस्थित सभी खानों के लिए विस्तारित उत्पादक उत्तरदायित्व (ईपीआर) के तहत खुली आवर्त खानों में राख का पृष्ठ भंडारण करना या अधिक भार के ढेरों के साथ राख का मिश्रण करना बाध्यकारी होगा। सभी खान के स्वामी या प्रचालक (चाहे सरकारी, सार्वजनिक और निजी क्षेत्र के हो) कोयला या लिग्नाईट आधारित तापीय विद्युत संयंत्रों से तीन सौ किलोमीटर (सड़क द्वारा) के भीतर, महानिदेशक, खान सुरक्षा (डीजीएमएस) के दिशानिर्देशों के अनुसार ओवर बर्डन के बाह्य निक्षेप खान की बैकफिलिंग अथवा स्टोविंग (प्रचालित या छोड़ी गई खानों, जैसा भी मामला हो) के लिए उपयोग की गई सामग्रियों के भार-दर-भार के आधार पर कम से कम 25 प्रतिशत राख को मिश्रित करने के लिए उपाय करेंगे :

परंतु ऐसे तापीय विद्युत केन्द्र नि:शुल्क राख प्रदान करके और परिवहन की लागत को वहन करके या पारस्परिक सहमत हुई शर्तों पर लिए गए निर्णय के अनुसार लागत या परिवहन व्यवस्था करके राख की अपेक्षित मात्रा की उपलब्धता को सुकर बनायेंगे और खानों के खाली स्थानों और ढेरो में अधिकभार के साथ राख को मिश्रित करना, सृजित अधिभार के लिए इस अधिसूचना के प्रकाशन की तिथि से लागू होगा और उक्त कार्यकलापों में राख का उपयोग, केंद्रीय प्रदूषण नियंत्रण बोर्ड, महानिदेशक खान सुरक्षा और भारतीय खदान ब्यूरो द्वारा निर्धारित दिशा-निर्देशों के अनुसार किया जाएगा।

स्पष्टीकरण .- इस उप-पैरा के प्रयोजन के लिए यह भी स्पष्ट किया जाता है कि लागत मुक्त राख और नि:शुल्क परिवहन के उपबंध केवल तभी लागू होंगे यदि ताप विद्युत संयंत्र इसके लिए खान मालिक को नोटिस देते हैं और अधिभार वाले ढेर के साथ मिश्रित करने और खान में खाली स्थान को भरने के लिए राख के 25 प्रतिशत हिस्से के उपयोग का अधिदेश तब तक लागू नहीं होगा जब तक कि ताप विद्युत संयंत्र द्वारा खान मालिक को नोटिस न दिया गया हो।

(5) (i) सभी खान मालिकों को खान में खाली स्थानों में राख को समायोजित करने के लिए खान बंद योजना (प्रगामी और अंतिम) तैयार करनी होगी और खान में खाली स्थान में राख के निपटान और अधिभार वाले ढेर के साथ राख को मिश्रित करने के लिए खान योजनाओं को संबंधित प्राधिकारी अनुमोदित करेगा। पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय द्वारा ताप विद्युत संयंत्रों और कोयला खदानों की पर्यावरणीय मंजूरी की अपेक्षा से छूट देने के साथ-साथ ऐसे निपटान के लिए अपनाए जाने वाले दिशानिर्देशों के संबंध में तारीख 28 अगस्त, 2019 को दिशानिर्देश जारी किए गए।

(ii) मंत्रालय, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, महानिदेशक, खान सुरक्षा (डीजीएमएस) और भारतीय खान ब्यूरो (आईबीएम) के साथ परामर्श करके, खानों में खाली स्थानों में राख के निपटान करने तथा अधिभार वाले ढेरो में इसे मिश्रित करना सुगम बनाने के लिए समय-समय पर आगे भी दिशानिर्देश जारी कर सकता है और यह खान मालिकों की जिम्मेदारी होगी कि वे ऐसी खानों को अभिज्ञात करने की तिथि से एक वर्ष के भीतर विभिन्न विनियामक प्राधिकरणों द्वारा जारी की गई अनुमतियों में आवश्यक संशोधन या परिवर्तन प्राप्त करेंगे।

(6) (i) पर्यावरणीय प्रदूषण के संदर्भ में सुरक्षा, व्यवहार्यता (आर्थिक व्यवहार्यता नहीं) और पहलुओं की जांच सहित राख से खान में खाली स्थान को वापस भरने/अधिभार वाले ढेर के साथ राख को मिश्रित करने के लिए खानों की पहचान करने के लिए पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, विद्युत मंत्रालय, खान मंत्रालय, कोयला मंत्रालय, महानिदेशक खान सुरक्षा और भारतीय खान ब्यूरो से प्रतिनिधियों को शामिल करते हुए अध्यक्ष, केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति का गठन किया जाएगा और यह समिति पणधारी मंत्रालयों या विभागों के लिए अभिज्ञात खानों (भूमिगत और खुली, दोनों) के संबंध में तैयार की गई तिमाही रिपोर्टों को अद्यतन करेगी और यह समिति, इस अधिसूचना के प्रकाशन के तुरंत पश्चात उपयुक्त खानों की पहचान करना आरंभ करेगी।

(ii) ताप विद्युत संयंत्र या खानें, उपरोक्त अनुसार अधिदेशित उपयोग लक्ष्यों को पूरा करने के लिए उपर्युक्त समिति द्वारा पहचान किए जाने तक राख के निपटान हेतु प्रतीक्षा नहीं करेंगी।

(7) राख से निचले क्षेत्र को भरने का कार्य, अनुमोदित परियोजनाओं के लिए राज्य प्रदूषण नियंत्रण बोर्ड की पूर्व अनुमति से और केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा निर्धारित दिशा-निर्देशों के अनुसार किया जाएगा और राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति द्वारा अनुमोदित स्थलों, अवस्थान, क्षेत्र और अनुमत मात्रा को अपनी वेबसाइट पर प्रतिवर्ष प्रकाशित किया जाएगा।

(8) केन्द्रीय प्रदूषण नियंत्रण बोर्ड, संगत पणधारी के साथ मिलकर, राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा अनुमति प्रदान करने के लिए समयबद्ध ऑनलाइन आवेदन प्रक्रिया प्रस्तुत करने के साथ-साथ इस अधिसूचना के अधीन परिकल्पित सभी प्रकार के कार्यकलापों के लिए एक वर्ष के भीतर दिशानिर्देश प्रस्तुत करेगा।

(9) कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र से तीन सौ किलोमीटर के दायरे में स्थित सभी भवन निर्माण परियोजनाएं (केंद्रीय, राज्य और स्थानीय प्राथिकरणों सरकारी उपक्रमों, अन्य सरकारी अभिकरणों तथा सभी निजी अभिकरणों) राख की ईटों, टाईल्स, धातुमल राख अथवा अन्य राख आधारित उत्पादों का उपयोग करेंगी बशर्ते कि वे वैकल्पिक उत्पादों की कीमत से अधिक कीमत पर उपलब्ध न हो।

(10) राख आधारित उत्पादों के विनिर्माण और ऐसे उत्पादों में राख के उपयोग में भारतीय मानक ब्यूरो, भारतीय सड़क कांग्रेस और केंद्रीय प्रदूषण नियंत्रण बोर्ड द्वारा निर्धारित विनिर्देशों और दिशानिर्देशों की अनुपालना होगी।

ग. गैर-अनुपालन के लिए पर्यावरणीय प्रतिकर .-

(1) तीन वर्ष के चक्र के प्रथम दो वर्षों में, यदि कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र (कैप्टिव और/ या सह-उत्पादक स्टेशनों या दोनों सहित) ने कम-से-कम 80 प्रतिशत राख (फ्लाई-राख और बॉटम-राख) उपयोग नहीं की है तो ऐसे गैर-अनुपालन ताप विद्युत संयंत्रों पर प्रस्तुत की गई वार्षिक रिपोर्टों के आधार पर निम्नलिखित

अंत में अप्रयुक्त राख पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा और यदि यह तीन वर्ष के चक्र के तीसरे वर्ष में 100 प्रतिशत राख का उपयोग करने में असमर्थ रहता है, तो वह अप्रयुक्त मात्रा पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर के भुगतान का पात्र होगा, जिस पर पहले पर्यावरणीय प्रतिकर नहीं लगायी गयी है।

परंतु पर्यावरणीय प्रतिकर को पैरा क के उप-पैरा (4) में उल्लिखित विभिन्न उपयोगी श्रेणियों के अनुसार प्रथम अनुपालन चक्र के अंतिम वर्ष के अंत में अनुमान लगाया जाएगा और अधिरोपित किया जाएगा।

(2) अधिकारियों द्वारा एकत्रित पर्यावरणीय प्रतिकर को केन्द्रीय प्रदूषण नियंत्रण बोर्ड के निर्दिष्ट खाते में जमा किया जाएगा।

(3) लैगेसी राख के मामले में, यदि कोयला या लिग्नाइट आधारित तापीय ऊर्जा संयंत्र (कैप्टिव या सह-उत्पादक स्टेशनों या दोनों सहित) ने स्थापित क्षमता पर आधारित उत्पन्न राख का कम-से-कम 20 प्रतिशत (प्रथम वर्ष के लिए), 35 प्रतिशत (द्वितीय वर्ष के लिए), 50 प्रतिशत (तीसरे से दसवें वर्ष तक) उपयोग के बराबर लक्ष्य प्राप्त नहीं किया है तो उस वित्तीय वर्ष के दौरान अप्रयुक्त लैगेसी राख पर 1000 रुपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा और यदि 10 वर्ष के अंत में लैगेसी राख का उपयोग नहीं किया जाता है तो 1000 रुपए प्रति टन की दर से शेष अप्रयुक्त मात्रा पर पर्यावरणीय प्रतिकर लगाया जाएगा जिस पर पहले पर्यावरणीय प्रतिकर नहीं लगाया गया है।

(4) अधिकृत खरीददारों या उपभोक्ता अभिकरणों तक राख भेजने की जिम्मेदारी परिवाहकों या वाहन मालिक की जिम्मेदारी है और यदि इसका अनुपालन नहीं किया जाता है, तो अनधिकृत उपयोगकर्ताओं अथवा गैर-अधिकृत उपयोगर्ताओं को ऐसी मात्रा गलत तरीके से वितरित करने पर 1500 रूपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगायी, इसके अतिरिक्त राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा गैर अनुपालनकर्ता परिवाहकों पर अभियोजन लागू होगा।

(5) इस अधिसूचना के पैरा ख में विहित पर्यावरण अनुकूल तरीके में राख के उपयोग की जिम्मेदारी खरीददार या उपभोगकर्ता एजेंसियों की है और ऐसा नहीं करने पर केन्द्रीय प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा 1500 रूपए प्रति टन की दर से पर्यावरणीय प्रतिकर लगाया जाएगा।

(6) यदि उपयोगकर्ता अधिकरण पैरा ख के अधीन निर्धारित सीमा तक अथवा पैरा घ के उप-पैरा (1) के अधीन, दिए गए नोटिस के माध्यम से सूचित की गई सीमा, इनमें से जो भी कम हो, तक राख का उपयोग नहीं करती है, वे अतिरिक्त राख की मात्रा का 1500 रूपए प्रति टन की दर से भुगतान करने के लिए उत्तरदायी होंगी।

परंतु भवन निर्माण के संबंध में पर्यावरणीय प्रतिकर निर्मित क्षेत्र के 75 रूपये प्रति वर्ग फीट की दर से वसूल किया जाएगा।

(7) (i) ताप विद्युत संयंत्रों अन्य बकायादारों से केन्द्रीय प्रदूषण नियंत्रण बोर्ड द्वारा लगायी गई का पर्यावरणीय प्रतिकर उपयोग अप्रयुक्त राख के सुरक्षित निपटान हेतु किया जाएगा और राख आधारित उत्पादों सहित राख के उपयोग के संबंध में और अधिक अनुसंधान करने के लिए भी निधि का उपयोग किया जा सकता है।

(ii) अप्रयुक्त मात्रा पर लगाए गए पर्यावरणीय प्रतिकर के पश्चात भी राख के उपयोग का उत्तरदायित्व ताप विद्युत संयंत्रों की होगी और यदि पश्चातवती चक्रों में पर्यावरणीय प्रतिकर लगाने के पश्चात ताप विद्युत संयंत्र, किसी विशेष चक्र की राख के उपयोग के लक्ष्य को प्राप्त करता है तो अगले चक्र के दौरान अप्रयुक्त मात्रा पर एकत्र की गई पर्यावरणीय प्रतिकर में 10 प्रतिशत कटौती के पश्चात उक्त रकम ताप विद्युत संयंत्र को वापस कर दी जाएगी और पश्चातवती चक्रों में राख के उपयोग के मामले में एकत्र की गई पर्यावरणीय प्रतिकर की 20 प्रतिशत, 30 प्रतिशत और उसी क्रम में कटौती की जानी है।

घ. राख या राख आधारित उत्पादों की आपूर्ति हेतु प्रक्रिया .–

(1) ताप विद्युत संयंत्रों के स्वामी अथवा राख की ईटों या टाईल्स या धातुमल आधारित राख के विनिर्माता उन व्यक्तियों या अभिकरणों को लिखित सूचना देंगे जो बिक्री या परिवहन या दोनों के लिए प्रस्तुत राख या राख आधारित उत्पादों के उपयोग के लिए उत्तरदायी हैं।

(2) ऐसे व्यक्ति या उपयोगकर्ता अभिकरणों जिन्हें ताप विद्युत संयंत्रों के स्वामी द्वारा या राख की ईंटों या टाईल्स या धातुमल आधारित राख के उत्पादकों द्वारा सूचना दी गई है, यदि वे पहले ही राख या राख उत्पादों के उपयोग के प्रयोजन से अन्य अभिकरणों के साथ जुड़े हुए हैं, यदि वे किसी भी राख/राख उत्पादों का उपयोग नहीं कर सकते हैं अथवा कम मात्रा का उपयोग कर सकते हैं, तदनुसार ताप विद्युत संयंत्र को सूचित करेंगे।

ड. प्रवर्तन, निगरानी, लेखा परीक्षा और प्रतिवेदन करना

(1) केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी), उपबंधों के अनुपालना सुनिश्चित करने के लिए प्रवर्तन और निगरानी प्राधिकरण होंगे। सीपीसीबी या एसपीसीबी या पीसीसी तिमाही आधार पर राख के उपयोग की निगरानी करेंगे और सीपीसीबी इस प्रयोजन के लिए अधिसूचना की प्रकाशन की तारीख से छ: माह के भीतर एक पोर्टल विकसित करेगा। संबंधित जिला अधिकारी के पास इस अधिसूचना के उपबंधों को लागू करने और निगरानी करने के लिए समवर्ती अधिकारिता होगी।

(2) (i) ताप विद्युत संयंत्र, राख उत्सर्जन और उपयोग से संबंधित मासिक सूचना वेब पोर्टल पर अगले महीने की 5 तारीख तक अपलोड करेगा। कोयला या लिग्नाइट आधारित ताप ऊर्जा संयंत्रों द्वारा केंद्रीय प्रदूषण नियंत्रण बोर्ड, संबंधित राज्य प्रदूषण नियंत्रण बोर्ड या प्रदूषण नियंत्रण समिति (पीसीसी), केंद्रीय विद्युत प्राधिकरण (सीईए) और पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय के संबंधित एकीकृत क्षेत्रीय कार्यालयों को इस अधिसूचना के उपबंधों के अनुपालन संबंधी सूचना उपलब्ध कराते हुए वार्षिक कार्यान्वयन रिपोर्ट प्रत्येक वर्ष (1 अप्रैल से 31 मार्च तक की अवधि के लिए) अप्रैल माह के 30वें दिन तक प्रस्तुत की जाएगी। सीपीसीबी और सीईए द्वारा सभी ताप विद्युत संयंत्रों द्वारा प्रस्तुत वार्षिक रिपोर्टों का समेकन किया जाएगा और उसे पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय को 31 मई तक प्रस्तुत किया जाएगा।

(ii) सभी अन्य उपयोगकर्ता अधिकरण पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय या राज्य स्तरीय पर्यावरण प्रभाव आकलन प्राधिकरण (एसईआईएए) द्वारा जारी पर्यावरणीय मंजूरी (ईसी) अथवा राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) द्वारा जारी संचालन की सहमति (सीटीओ), जो भी लागू हो, की अनुपालना रिपोर्ट में इस अधिसूचना में आज्ञापकता के अनुसार राख के उपभोग या उपयोग या निस्तारण तथा राख आधारित उत्पादों के उपयोग संबंधी सूचना प्रस्तुत करेंगे। केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) या राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) अधिसूचना के उपबंधों के प्रभावी कार्यान्वयन की समीक्षा करने हेतु ताप विद्युत संयंत्रों के अतिरिक्त अन्य सभी अधिकरणों की राख उपयोग की वार्षिक रिपोर्ट प्रकाशित करेंगे।

(3) इस अधिसूचना के उपबंधों की निगरानी और कार्यान्वयन के प्रयोजन के लिए केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) की अध्यक्षता में एक समिति का गठन किया जाएगा जिसके सदस्य विद्युत मंत्रालय, कोयला मंत्रालय, खनन मंत्रालय, पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय, सड़क परिवहन और राजमार्ग मंत्रालय और भारी उद्यम विभाग से होने के साथ-साथ समिति के अध्यक्ष द्वारा नामित किए जाने वाले कोई संबंधित पणधारी होंगे। यह समिति संगत पणधारी को आमंत्रित कर सकती है। यह समिति इस अधिसूचना के उपबंधों के प्रभावी और दक्ष कार्यान्वयन के लिए सिफारिशें कर सकती है। यह समिति छ: माह में कम से कम एक बार एक बैठक करेगी और वार्षिक कार्यान्वयन रिपोर्टों की समीक्षा करेगी और यह समिति, इस अधिसूचना द्वारा आजापक किए गए अनुसार छ: महीनों में कम से कम एक बार संगत पणधारी (को) को आमंत्रित करके राख के उपयोग की निगरानी करने के लिए पणधारी से साथ परामर्शदात्री बैठकें आयोजित करेगी। यह समिति पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय (एमओईएफसीसी) को छ: मासिक रिपोर्ट प्रस्तुत करेगी।

(4) ताप विद्युत संयंत्रों और राख के उपयोगकर्ताओं या राख आधारित उत्पादों के विनिर्माताओं के बीच के विवाद का समाधान करने के प्रयोजन से राज्य सरकारें या संघ राज्यक्षेत्र की सरकारें इस अधिसूचना के प्रकाशन की तारीख से तीन माह के भीतर राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) की अध्यक्षता में एक समिति का गठन करेंगी जिसमें विद्युत विभाग के प्रतिनिधि और एक प्रतिनिधि उस विभाग का होगा, जो विवाद वाले संबंधित अभिकरण का कार्य देख रहे हैं।

(5) केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) द्वारा प्राधिकृत लेखा परीक्षकों द्वारा ताप विद्युत संयंत्रों और उपयोगकर्ता अभिकरणों द्वारा किए गए राख के निपटान की अनुपालन लेखा परीक्षा संचालित की जाएगी और लेखा परीक्षा की रिपोर्ट प्रत्येक वर्ष 30 नवम्बर तक केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) को प्रस्तुत की जाएगी। केन्द्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) और संबंधित राज्य प्रदूषण नियंत्रण बोर्ड (एसपीसीबी) या प्रदूषण नियंत्रण समिति (पीसीसी) लेखा परीक्षा की रिपोर्ट प्राप्त होने के पंद्रह दिनों के भीतर अनुपालन न करने वाले ताप विद्युत संयंत्रों के विरूद्ध कार्रवाई प्रारंभ करेगें।

[फा. सं. एचएसएम-9/1/2019-एचएसएम]

नरेश पाल गंगवार, संयुक्त सचिव

उपाबंध

31 मई तक अथवा उससे पहले प्रस्तुत की जाने वाली राख संबंधी उपबंधों की अनुपालन रिपोर्ट (01 अप्रैल से 31 मार्च की अवधि के लिए)।

क्र.सं.	**ब्यौरा**	
1.	विद्युत संयंत्र का नाम	
2.	कंपनी का नाम	
3.	जिला	
4.	राज्य	
5.	पत्राचार के लिए डाक का पता :	
6.	ई-मेल :	
7.	विद्युत संयंत्र की संस्थापित क्षमता (मेगा वॉट) :	
8.	संयंत्र लोड फैक्टर (पीएलएफ) :	
9.	उत्पादित यूनिटों की संख्या (एमडब्ल्यूएच) :	
10.	विद्युत संयंत्र के अंतर्गत कुल क्षेत्र (हेक्टेयर) (राख कुंडों के अधीन क्षेत्र सहित) :	
11.	रिपोर्टिंग की अवधि के दौरान कोयला खपत की मात्रा (प्रति वर्ष मीट्रिक टन) :	
12.	औसत राख सामग्री प्रतिशतता में (%) :	
13.	रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख की मात्रा (प्रति वर्ष मीट्रिक टन) : फ्लाई राख (प्रति वर्ष मीट्रिक टन) : बॉटम राख (प्रति वर्ष मीट्रिक टन) :	
14.	ड्राई फ्लाई राख भंडारण गड्ढा (गड्ढों) की क्षमता (मीट्रिक टन) :	
15.	**रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख के उपयोग का ब्यौरा:** (क) रिपोर्टिंग की अवधि के दौरान वर्तमान में उपयोग की गई राख की	

	कुल मात्रा (एमटीपीए) : (ख) उपयोग की गई फ्लाई राख की मात्रा (एमटीपीए) : i. फ्लाई-एश आधारित उत्पाद (ईंट या ब्लॉक या टाइल्स या फाइबर सीमेंट शीट या पाइप या बोर्ड/पैनल) : ii. सीमेंट विनिर्माण : iii. रेडी मिक्स कंक्रीट : iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री : v. सिंटर्ड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण : vi. सड़कों, सड़क और फ्लाई ओवर के पुश्तों का निर्माण : vii. बांधों का निर्माण : viii. निम्न भू-क्षेत्र का भराव : ix. खनिज क्षेत्रों का भराव : x. अधिभार वाले डम्पों में उपयोग : xi. कृषि : xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण : xiii. अन्य देशों को राख का निर्यात : xiv. अन्य (कृपया विनिर्दिष्ट करें) : (ग) उपयोग किए गए तल के राख की मात्रा (एमटीपीए) : i. फ्लाई-एश आधारित उत्पाद (ईंट या ब्लॉक या टाइल्स या फाइबर सीमेंट शीट या पाइप या बोर्ड या पैनल) : ii. सीमेंट विनिर्माण : iii. रेडी मिक्स कंक्रीट : iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री : v. सिंटर्ड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण : vi. सड़कों, सड़क और फ्लाईओवर के पुश्तों का निर्माण : vii. बांधों का निर्माण : viii. निम्न भू-क्षेत्र का भराव : ix. खनिज क्षेत्रों का भराव : x. अधिभार वाले डम्पों में उपयोग : xi. कृषि : xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण : xiii. अन्य देशों को राख का निर्यात : xiv. अन्य (कृपया विनिर्दिष्ट करें) : रिपोर्टिंग की अवधि के दौरान वर्तमान में अप्रयुक्त राख की कुल मात्रा (एमटीपीए :	
16.	रिपोर्टिंग की अवधि के दौरान वर्तमान में उत्पादित राख का प्रतिशतता उपयोग (%) :	
17.	**राख कुंडों में राख के निपटान का ब्यौरा** क) तारीख 31 मार्च तक (रिपोर्टिंग की अवधि को छोड़कर) राख कुण्ड (कुण्डों) में निपटान किए गए राख की कुल मात्रा (मीट्रिक टन):	

	ख) रिपोर्टिंग की अवधि के दौरान राख कुण्ड (कुण्डों) में निपटान किए गए राख की मात्रा (मीट्रिक टन): ग) रिपोर्टिंग की अवधि के दौरान राख कुण्डों में गारा निस्सरण हेतु खपत हुए जल की कुल मात्रा (मी^{3}): घ) राख कुण्डों की कुल संख्या: (i) सक्रिय: (ii) खाली किए गए (पुन: भरा जाना है) (iii) पुन: भरे गए: ड.) राख कुण्डों के अधीन कुल क्षेत्र (हेक्टेयर):	
18.	**अलग-अलग राख कुण्ड का ब्यौरा** *राख कुण्ड 1,2 आदि (यदि राख कुण्डों की संख्या एक से अधिक हो, तो कृपया निम्नलिखित ब्यौरा अलग से उपलब्ध कराएं)* क) स्थिति: निर्माणाधीन या सक्रिय या खाली किया गया या पुन: भरा गया ख) राख कुण्ड में राख का निपटान शुरू करने की तारीख/महीना/वर्ष या महीना/वर्ष): ग) राख कुण्ड की क्षमता पूर्ण किए जाने के पश्चात् उसमें राख निपटान रोकने की तारीख (तारीख/महीना/वर्ष या महीना/वर्ष): (सक्रिय राख कुण्डों के लिए लागू नहीं) ग) क्षेत्र (हेक्टेयर): घ) डाइक की ऊंचाई (मी.): घ) आयतन (मी^{3}): ड.) तारीख 31 मार्च तक निपटान किए गए राख की मात्रा (मीट्रिक टन): च) उपलब्ध आयतन का प्रतिशत (%) और आगे निपटान किए जा सकने वाले राख की मात्रा (मीट्रिक टन): छ) राख कुण्ड के भरे जाने की अनुमानित अवधि (वर्षों और महीनों की संख्या): ड.) निर्देशांक (अक्षांश और देशान्तर): (कृपया न्यूनतम 4 निर्देशांकों को विनिर्दिष्ट करें) ज) राख कुण्ड में की गई लाइनिंग का प्रकार: एचडीपीई लाइनिंग या एलडीपीई लाइनिंग या क्ले लाइनिंग या कोई लाइनिंग नहीं छ) निपटान की विधि: शुष्क निपटान या नम गारा (नम गारा के मामले में कृपया विनिर्टिष्ट करें कि क्या एचसीएसडी या एमसीएसडी या एलसीएसडी है) ज) राख का अनुपात: गारा मिश्रण में जल (1:____): झ) संस्थापित और कार्यशील राख जल पुनर्चक्रण प्रणाली (एडब्ल्यूआरएस): हां या नहीं ञ) जमीन के अंदर या जल निकाय में राख कुण्ड से निस्सरित अपशिष्ट जल की मात्रा (मी^{3}): ट) डाइक की स्थिरता का अध्ययन कराए जाने की पिछली तारीख और उस संगठन का नाम जिसने अध्ययन किया: ठ) लेखा-परीक्षा किए जाने की पिछली तारीख और उस संगठन का नाम जिसने लेखा-परीक्षा की:	
19.	उपयोग किए गए पुराने राख की मात्रा (एमटीपीए): i. फ्लाई-एश आधारित उत्पाद (ईंट या ब्लॉक या टाइल्स या फाइबर	

	सीमेंट शीट या पाइप या बोर्ड या पैनल): ii. सीमेंट विनिर्माण: iii. रेडी मिक्स कंक्रीट: iv. राख और जीओ-पॉलिमर आधारित निर्माण सामग्री: v. सिंटर्ड या कोल्ड बॉन्डेड राख एग्रीगेट का निर्माण: vi. सड़कों, सड़क और फ्लाई ओवर के पुश्तों का निर्माण: vii. बांधों का निर्माण: viii. निम्न भू-क्षेत्र का भराव: ix. खनिज क्षेत्रों का भराव: x. अधिभार वाले डम्पों में उपयोग: xi. कृषि: xii. तटीय जिलों में तटरेखा सुरक्षा संरचनाओं का निर्माण: xiii. अन्य देशों को राख का निर्यात xiv. अन्य (कृपया विनिर्दिष्ट करें):			
20.	**सार :**			
	ब्यौरा	सृजित मात्रा (एमटीपी)	उपयोग की गई मात्रा (एमटीपी) और (%)	शेष मात्रा (एमटीपी)
	रिपोर्टिंग की अवधि के दौरान राख			
	पुरानी राख			
	कुल			
21.	कोई अन्य सूचना : वार्षिक अनुपालन रिपोर्ट, और विद्युत संयंत्रों और राख कुण्डों की शेष फाइलों की सॉफ्ट कॉपी ई-मेल:- moefcc-coalash@gov.in पर भेजी जाए।			
22.	प्राधिकृत हस्ताक्षरकर्ता के हस्ताक्षर			

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 31st December, 2021

S.O. 5481(E).—Whereas by notification of the Government of India in the erstwhile Ministry of Environment and Forests *vide* S.O.763 (E), dated the 14th September, 1999, as amended from time to time, the Central Government, issued directions for restricting the excavation of top soil for manufacturing of bricks and promoting the utilisation of fly ash in the manufacturing of building materials and in construction activity within a specified radius of three hundred kilometres from the coal or lignite based thermal power plants;

And whereas, to implement the aforesaid notification more effectively based on the polluter pays principle (PPP) thereby ensuring 100 per cent utilisation of fly ash by the coal or lignite based thermal power plants and for the sustainability of the fly ash management system, the Central Government reviewed the existing notification; and whereas environmental compensation needs to be introduced based on the polluter pays principle;

And whereas, there is a need to conserve top soil by promoting manufacture and mandating use of ash based products and building materials in the construction sector;

And whereas, there is a need to conserve top soil and natural resources by promoting utilisation of ash in road laying, road and flyover embankments, shoreline protection measures, low lying areas of approved projects, backfilling of mines, as an alternative for filling of earthen materials;

And whereas, it is necessary to protect the environment and prevent the dumping and disposal of fly ash discharged from coal or lignite based thermal power plants on land;

And whereas, in the said notification the phrase 'ash', has been used which includes both fly ash as well as bottom ash generated from the Coal or Lignite based thermal power plants;

And whereas, the Central Government intends to bring out a comprehensive framework for ash utilisation including system of environmental compensation based on polluter pays principle;

And whereas, a draft notification on ash utilisation by coal or lignite thermal power plants in supersession of the notification of the Government of India, Ministry of Environment and Forests published in the Gazette of India, Extra Ordinary part II, section 3, sub-section (i) *vide* S.O.763 (E), dated the 14th September, 1999, by notification in exercise of the powers conferred under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, was published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (i), *vide* G.S.R. 285(E), dated the 22nd April, 2021 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft provisions were made available to the public;

And, whereas all the objections and suggestions received from all persons likely to be affected thereby in respect of the said draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule (5) of the Environment (Protection) Rules, 1986, and in supersession of the Notification S.O.763 (E), dated the 14th September, 1999 except as respect things done or omitted to be done before such supersession, the Central Government hereby issues the following notification on ash utilisation from coal or lignite thermal power plants which shall come into force on the date of the publication of this notification, namely:-

A. Responsibilities of thermal power plants to dispose fly ash and bottom ash.—

(1) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall be primarily responsible to ensure 100 per cent utilisation of ash (fly ash, and bottom ash) generated by it in an eco-friendly manner as given in sub-paragraph (2);

(2) The ash generated from coal or lignite based thermal power plants shall be utilised only for the following eco-friendly purposes, namely:-

(i) Fly ash based products viz. bricks, blocks, tiles, fibre cement sheets, pipes, boards, panels;

(ii) Cement manufacturing, ready mix concrete;

(iii) Construction of road and fly over embankment, Ash and Geo-polymer based construction material;

(iv) Construction of dam;

(v) Filling up of low lying area;

(vi) Filling of mine voids;

(vii) Manufacturing of sintered or cold bonded ash aggregate;

(viii) Agriculture in a controlled manner based on soil testing;

(ix) Construction of shoreline protection structures in coastal districts;

(x) Export of ash to other countries;

(xi) Any other eco-friendly purpose as notified from time to time.

(3) A committee shall be constituted under the chairmanship of Chairman, Central Pollution Control Board (CPCB) and having representatives from Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Power, Ministry of Mines, Ministry of Coal, Ministry of Road Transport and Highways, Department of Agricultural Research and Education, Institute of Road Congress, National Council for Cement and Building Materials, to examine and review and recommend the eco-friendly ways of utilisation of ash and make inclusion or exclusion or modification in the list of such ways as mentioned in Sub-paragraph (2) based on technological developments and requests received from stakeholders. The committee may invite State Pollution Control Board or Pollution Control Committee, operators of thermal power plants and mines, cement plants and other stakeholders as and when required for this purpose. Based on the recommendations of the Committee, Ministry of Environment, Forest and Climate Change (MoEFCC) may publish such eco-friendly purpose.

(4) Every coal or lignite based thermal power plant shall be responsible to utilise 100 per cent ash (fly ash and bottom ash) generated during that year, however, in no case shall utilisation fall below 80 per cent in any year, and the thermal power plant shall achieve average ash utilisation of 100 per cent in a three years cycle:

Provided that the three years cycle applicable for the first time is extendable by one year for the thermal power plants where ash utilisation is in the range of 60-80 per cent, and two years where ash utilisation is below 60 per cent and for the purpose of calculation of percentage of ash utilisation, the percentage quantity of utilisation in the year 2021- 2022 shall be taken into account as per the table below:

Utilisation percentages of thermal power plants	First compliance Cycle to meet 100 per cent utilisation	Second compliance cycle onwards, to meet 100 per cent utilisation
>80 per cent	3 years	3 years
60-80 per cent	4 years	3 years
<60 per cent	5 years	3 years

Provided further that the minimum utilisation percentage of 80 per cent shall not be applicable to the first year and first two years of the first compliance cycle for the thermal power plants under the utilisation category of 60-80 per cent and <60 per cent, respectively.

Provided also that 20per cent of ash generated in the final year of compliance cycle may be carried forward to the next cycle which shall be utilised in the next three years cycle along with the ash generated during that cycle.

(5) The unutilised accumulated ash i.e. legacy ash, which is stored before the publication of this notification, shall be utilised progressively by the thermal power plants in such a manner that the utilization of legacy ash shall be completed fully within ten years from the date of publication of this notification and this will be over and above the utilisation targets prescribed for ash generation through current operations of that particular year:

Provided that the minimum quantity of legacy ash in percentages as mentioned below shall be utilised during the corresponding year and the minimum quantity of legacy ash is to be calculated based on the annual ash generation as per installed capacity of thermal power plant.

Year from date of publication	1st	2nd	3rd -10th
Utilisation of legacy ash (in percentage of Annual ash)	At least 20 per cent	At least 35 per cent	At least 50 per cent

Provided further that the legacy ash utilisation shall not be required where ash pond or dyke has stabilised and the reclamation has taken place with greenbelt or plantation and the concerned State Pollution Control Board shall certify in this regard. Stabilisation and reclamation of an ash pond or dyke including certification by the Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be carried out within a year from the date of publication of this notification. The ash remaining in all other ash ponds or dykes shall be utilised in progressive manner as per the above mentioned timelines.

Note: The obligations under sub-paragraph (4) and (5) above for achieving the ash utilisation targets shall be applicable from 1st April, 2022.

(6) Any new as well as operational thermal power plant may be permitted an emergency or temporary ash pond with an area of 0.1 hectare per Mega Watt (MW). Technical specifications of ash ponds or dykes shall be as per the guidelines of Central Pollution Control Board (CPCB) made in consultation with Central Electricity Authority (CEA) and these guidelines shall also lay down a procedure for annual certification of the ash pond or dyke on its safety, environmental pollution, available volume, mode of disposal, water consumption or conservation in disposal, ash water recycling and greenbelt, etc., and shall be put in place within three months from the date of publication of this notification.

(7) Every coal or lignite based thermal power plant shall ensure that loading, unloading, transport, storage and disposal of ash is done in an environmentally sound manner and that all precautions to prevent air and water pollution are taken and status in this regard shall be reported to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in Annexure attached to this notification.

(8) Every coal or lignite based thermal power plant shall install dedicated silos for storage of dry fly ash silos for at least sixteen hours of ash based on installed capacity and it shall be reported upon to the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) in the Annexure and shall be inspected by Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) from time to time.

(9) Every coal or lignite based thermal power plant (including captive or co-generating stations or both) shall provide real time data on daily basis of availability of ash with Thermal Power Plant (TPP), by providing link to Central Pollution Control Board's web portal or mobile phone App for the benefit of actual user(s).

(10) Statutory obligation of 100 per cent utilisation of ash shall be treated as a change in law, wherever applicable.

B. **For the purpose of utilisation of ash, the subsequent sub-paras shall apply**.—

(1) All agencies (Government, Semi-government and Private) engaged in construction activities such as road laying, road and flyover embankments, shoreline protection structures in coastal districts and dams within 300 kms from the lignite or coal based thermal power plants shall mandatorily utilise ash in these activities:

Provided that it is delivered at the project site free of cost and transportation cost is borne by such coal or lignite based thermal power plants.

Provided further that thermal power plant may charge for ash cost and transportation as per mutually agreed terms, in case thermal power plant is able to dispose the ash through other means and those agencies makes a request for it and the provisions of ash free of cost and free transportation shall be applicable, if thermal power plant serves a notice on the construction agency for the same.

(2) The utilisation of ash in the said activities shall be carried out in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, Central Building Research Institute, Roorkee, Central Road Research Institute, Delhi, Central Public Works Department, State Public Works Departments and other Central and State Government Agencies.

(3) It shall be obligatory on all mines located within 300 kilometres radius of thermal power plant, to undertake backfilling of ash in mine voids or mixing of ash with external Overburden dumps, under Extended Producer Responsibility (EPR). All mine owners or operators (Government, Public and Private Sector) within three hundred kilometres (by road) from coal or lignite based thermal power plants, shall undertake measures to mix at least 25 per cent of ash on weight to weight basis of the materials used for external dump of overburden, backfilling or stowing of mine (running or abandoned as the case may be) as per the guidelines of the Director General of Mines Safety (DGMS):

Provided that such thermal power stations shall facilitate the availability of required quantity of ash by delivering ash free of cost and bearing the cost of transportation or cost or transportation arrangement decided on mutually agreed terms and mixing of ash with overburden in mine voids and dumps shall be applicable for the overburden generated from the date of publication of this notification and the utilisation of ash in the said activities shall be carried out in accordance with guidelines laid down by the Central Pollution Control Board, Director General of Mines Safety and Indian Bureau of Mines.

Explanation.- For the purpose of this sub-paragraph, it is also clarified that the provisions of ash free of cost and free transportation shall be applicable, if thermal power plants serve a notice on the mine owner for the same and the mandate of using 25 per cent of ash for mixing with overburden dump and filling up of mine voids shall not be applicable unless a notice is served on the mine owner by thermal power plant.

(4) (i) All mine owners shall get mine closure plans (progressive and final) to accommodate ash in the mine voids and the concerned authority shall approve mine plans for disposal of ash in mine voids and mixing of ash with overburden dumps. The Ministry of Environment, Forest and Climate Change (MoEFCC) has issued guidelines on 28th August, 2019 regarding exemption of requirement of Environmental Clearance of thermal power plants and coal mines along with the guidelines to be followed for such disposal.

(ii) The Ministry in consultation with Central Pollution Control Board (CPCB), Director General of Mine Safety (DGMS) and Indian Bureau of Mines (IBM) may issue further guidelines time to time to facilitate ash disposal in mine voids and mixing with overburden dumps and it shall be the responsibility of mine owners to get the necessary amendments or modifications in the permissions issued by various regulatory authorities within one year from the date of identification of such mines.

(5) (i) There shall be a committee headed by Chairperson, Central Pollution Control Board (CPCB) with representatives from Ministry of Environment, Forest and Climate Change, Ministry of Power, Ministry of Mines, Ministry of Coal, Director General of Mine Safety and Indian Bureau of Mines for identification of mines for backfilling of mine voids with ash or mixing of ash with overburden dump including examination of safety, feasibility (not economic feasibility) and aspects of environmental contamination and the committee shall get updated quarterly reports prepared regarding identified mines (both underground and opencast) for the stakeholder Ministries or Departments and the committee shall start identifying the suitable mines immediately after the publication of this notification.

(ii) Thermal power plants or mines shall not wait for disposal of ash till the identification is done by the above mentioned committee, to meet the utilisation targets mandated as above.

(6) Filling of low lying areas with ash shall be carried out with prior permission of the State Pollution Control Board or Pollution Control Committee for approved projects, and in accordance with guidelines laid down by Central Pollution Control Board (CPCB) and the State Pollution Control Board or Pollution Control Committee (PCC) shall publish approved sites, location, area and permitted quantity annually on its website.

(7) Central Pollution Control Board after engaging relevant stakeholders, shall put in place the guidelines within one year for all types of activities envisaged under this notification including putting in place time bound online application process for the grant permission by State Pollution Control Boards (SPCBs) or Pollution Control Committees (PCCs).

(8) All building construction projects (Central, State and Local authorities, Govt. undertakings, other Govt. agencies and all private agencies) located within a radius of three hundred kilometres from a coal or lignite based thermal power plant shall use ash bricks, tiles, sintered ash aggregate or other ash based products, provided these are made available at prices not higher than the price of alternative products.

(9) Manufacturing of ash based products and use of ash in such products shall be in accordance with specifications and guidelines laid down by the Bureau of Indian Standards, Indian Road Congress, and Central Pollution Control Board.

C. Environmental compensation for non-compliance.—

(1) In the first two years of a three years cycle, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved at least 80 per cent ash (fly ash and bottom ash) utilisation, then such non-compliant thermal power plants shall be imposed with an environmental compensation of Rs. 1000 per ton on unutilised ash during the end of financial year based on the annual reports submitted and if it is unable to utilise 100 per cent of ash in the third year of the three years cycle, it shall be liable to pay an environmental compensation of Rs. 1000 per ton on the unutilised quantity on which environmental compensation has not been imposed earlier:

Provided that the environmental compensation shall be estimated and imposed at the end of last year of the first compliance cycle as per the various utilisation categories as mentioned in sub-paragraph (4) of Para A.

(2) Environmental compensation collected by the authorities shall be deposited in the designated account of Central Pollution Control Board.

(3) In case of legacy ash, if the coal or lignite based thermal power plant (including captive or co-generating stations or both) has not achieved utilisation equivalent to at least 20 per cent (for the first year), 35 per cent (for the second year), 50 per cent (for third to tenth year) of ash generated based on installed capacity, an environmental compensation of Rs. 1000 per ton of unutilised legacy ash during that financial year shall be imposed and if the utilization of legacy ash is not completed at the end of 10 years, an environmental compensation of Rs.1000 per ton shall be imposed on the remaining unutilised quantity which has not been imposed earlier.

(4) It shall be the responsibility of the transporters or vehicle owner to deliver ash to authorised purchaser or user agency and if it is not complied, then an environmental compensation of Rs. 1500 per ton on such quantity as mis-delivered to unauthorised users or non- delivered to authorised users will be imposed besides prosecution of such non-compliant transporters by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).

(5) It is the responsibility of the purchasers or user agencies to utilise ash in an eco-friendly manner as laid down at para B of this notification and if it is not complied, then an environmental compensation of Rs. 1500 or per ton shall be imposed by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC).

(6) If the user agencies do not utilise ash to the extent obligated under para B or the extent to which they have been intimated through Notice(s) served under sub-paragraph (1) of para D, whichever is lower, they shall be liable to pay Rs. 1500 per ton of ash for the quantity they fall short off:

Provided that the environmental compensation on building constructions shall be levied at Rs.75/- per square feet of built up area of construction.

(7) (i) The environmental compensation collected by Central Pollution Control Board from the thermal power plants and other defaulters shall be used towards the safe disposal of the unutilised ash and the fund may also be utilised for advancing research on use of ash including ash based products.

(ii) The liability of ash utilisation shall be with thermal power plants even after imposition of [illegible] compensation on unutilised quantities and in case thermal power plant achieves the ash utilisation of [illegible]

particular cycle after imposition of environmental compensation in subsequent cycles, the said amount shall be returned to thermal power plant after deducting 10 per cent of the environmental compensation collected on the unutilised quantity during the next cycle and deduction of 20 per cent, 30 per cent, and so on, of the environmental compensation collected is to be made in case of utilisation of ash in subsequent cycles.

D. Procedure for supply of ash or ash based products.—

(1) The owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate shall serve written notice to persons or agencies who are liable to utilise ash or ash based products, offering for sale, or transport or both.

(2) Persons or user agencies who have been served notices by owner of thermal power plants or manufacturers of ash bricks or tiles or sintered ash aggregate, if they have already tied up with other agencies for the purpose of utilisation of ash or ash products, shall inform the thermal power plant accordingly, if they cannot use any ash or ash products or use reduced quantity.

E. Enforcement, Monitoring, Audit and Reporting.—

(1) The Central Pollution Control Board (CPCB) and the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall be the enforcing and monitoring authority for ensuring compliance of the provisions and shall monitor the utilisation of ash on quarterly basis. Central Pollution Control Board shall develop a portal for the purpose within six months of date of publication of the notification. The concerned District Magistrate shall have concurrent jurisdiction for enforcement and monitoring of the provisions of this notification.

(2) (i) Thermal power plants shall upload monthly information regarding ash generation and utilisation by 5th of the next month on the web portal. Annual implementation report (for the period 1st April to 31st March) providing information about the compliance of provisions in this notification shall be submitted by the 30th day of April, every year to the Central Pollution Control Board, concerned State Pollution Control Board or Pollution Control Committee (PCC), Central Electricity Authority (CEA), and concerned Integrated Regional Office of Ministry of Environment, Forest and Climate Change by the coal or lignite based thermal power plants. Central Pollution Control Board and Central Electricity Authority shall compile the annual reports submitted by all the thermal power plants and submit to Ministry of Environment, Forest and Climate Change by 31st May.

(ii) All other user agencies shall submit consumption or utilisation or disposal of ash and use of ash based products as mandated in this notification in the compliance report of Environmental Clearance (EC) issued by Ministry of Environment, Forest and Climate Change or State Level Environment Impact Assessment Authority (SEIAA) or Consent to Operate (CTO) issued by State Pollution Control Board (SPCB) or Pollution Control Committee (PCC), whichever is applicable. The Central Pollution Control Board (CPCB) or State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall publish annual report of ash utilisation of all other agencies except thermal power plants to review the effective implementation of the provisions of the notification.

(3) For the purpose of monitoring the implementation of the provisions of this notification, a committee shall be constituted under the Chairperson, Central Pollution Control Board (CPCB), with members from Ministry of Power, Ministry of Coal, Ministry of Mines, Ministry of Environment, Forest and Climate Change, Ministry Road Transportation and Highways, Department of Heavy Industry as well as any concerned stakeholder(s), to be nominated by the Chairman of the committee. The committee may make recommendations for effective and efficient implementation of the provisions of the notification. The committee shall meet at least once in six months and review annual implementation reports and the committee shall also hold stakeholder consultations for monitoring of ash utilisation as mandated by this notification by inviting relevant stakeholder(s) at least once in six months. The committee shall submit the six monthly report to Ministry of Environment, Forest and Climate Change (MoEFCC).

(4) For the purpose of resolving disputes between thermal power plants and users of ash or manufacturer of ash based products, the State Governments or Union territory administration constitute a Committee within three months from the date of publication of this notification under the Chairman, State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) with representatives from Department of Power, and one representative from the Department which deals with the subject of concerned agency with which dispute is made.

(5) The compliance audit for ash disposal by the thermal power plants and the user agency shall be conducted by auditors, authorised by Central Pollution Control Board (CPCB) and audit report shall be submitted to Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) by 30th November every year. Central Pollution Control Board (CPCB) and concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) shall initiate action against non-compliant thermal power plants within fifteen days of receipt of audit report.

[F. No. HSM-9/1/2019-HSM]

NARESH PAL GANGWAR, Jt. Secy.

Annexure

Ash Compliance Report (for the period 1st April-31st March) to be submitted on or before 31st May.

Sl. No.	Details	
1.	Name of Power Plant	
2.	Name of the company	
3.	District	
4.	State	
5.	Postal address for communication:	
6.	E-mail:	
7.	Power Plant installed capacity (MW):	
8.	Plant Load Factor (PLF):	
9.	No. of units generated (MWh):	
10.	Total area under power plant (ha): (including area under ash ponds)	
11.	Quantity of coal consumption during reporting period (Metric Tons per Annum):	
12	Average ash content in percentage (per cent):	
13.	Quantity of current ash generation during reporting period (Metric Tons per Annum): Fly ash (Metric Tons per Annum): Bottom ash (Metric Tons per Annum):	
14.	Capacity of dry fly ash storage silo(s) (Metric Tons) :	
15	Details of utilisation of current ash generated during reporting period (a) Total quantity of current ash utilised (MTPA) during reporting period: (b) Quantity of fly ash utilised (MTPA): (i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels) (ii) Cement manufacturing:	

	(iii) Ready mix concrete: (iv) Ash and Geo-polymer based construction material: (v) Manufacturing of sintered or cold bonded ash aggregate: (vi) Construction of roads, road and fly over embankment: (vii) Construction of dams: (viii) Filling up of low lying area: (ix) Filling of mine voids: (x) Use in overburden dumps: (xi) Agriculture: (xii) Construction of shoreline protection structures in coastal districts; (xiii) Export of ash to other countries: (xiv) Others (please specify): (c) Quantity of bottom ash utilised (MTPA): (i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): (ii) Cement manufacturing: (iii) Ready mix concrete: (iv) Ash and Geo-polymer based construction material: (v) Manufacturing of sintered or cold bonded ash aggregate: (vi) Construction of roads, road and flyover embankment: (vii) Construction of dams: (viii) Filling up of low lying area: (ix) Filling of mine voids: (x) Use in overburden dumps: (xi) Agriculture: (xii) Construction of shoreline protection structures in coastal districts: (xiii) Export of ash to other countries: (xiv) Others (please specify): Total quantity of current ash unutilised (MTPA) during reporting period:	
16.	Percentage utilisation of current ash generated during reporting period (per cent):	
17.	Details of disposal of ash in ash ponds (a) Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period): (b) Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons): (c) Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m^3): (d) Total number of ash ponds: (i) Active: (ii) Exhausted (yet to be reclaimed): (iii) Reclaimed: (e) total area under ash ponds (ha):	
18.	Individual ash pond details *Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)* (a) Status: Under construction or Active or Exhausted or	

	Reclaimed (b) Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY): (c) Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds) (c) area (hectares): (d) dyke height (m): (d) volume (m^3): (e) quantity of ash disposed as on 31st March (Metric Tons): (f) available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons): (g) expected life of ash pond (number of years and months): (e) co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates) (f) type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining g) mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD) (h) Ratio of ash: water in slurry mix (1:___): (i) Ash water recycling system (AWRS) installed and functioning: Yes or No (j) Quantity of wastewater from ash pond discharged into land or water body (m3): (k) Last date when the dyke stability study was conducted and name of the organisation who conducted the study: (l) Last date when the audit was conducted and name of the organisation who conducted the audit:	
19.	Quantity of legacy ash utilised (MTPA): i. Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels): ii. Cement manufacturing: iii. Ready mix concrete: iv. Ash and Geo-polymer based construction material: v. Manufacturing of sintered or cold bonded ash aggregate: vi. Construction of roads, road and flyover embankment: vii. Construction of dams: viii. Filling up of low lying area: ix. Filling of mine voids: x. Use in overburden dumps: xi. Agriculture: xii. Construction of shoreline protection structures in coastal districts; xiii. Export of ash to other countries: xiv. Others (please specify):	
20.	Summary:	

Details	Quantity generated (MTP)	Quantity utilised (MTP) and (per cent)	Balance quantity (MTP)

	Current ash during reporting period			
	Legacy ash			
	Total			
21.	Any other information: Soft copy of the annual compliance report, and shape files of power plant and ash ponds may be e-mailed to:- moefcc-coalash@gov.in			
22.	Signature of Authorised Signatory			

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ANNEXURE-R12

(Computer No. 5220)

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority
तापीय अभियांत्रिकी एवं प्रौद्योगिकी विकास प्रभाग
Thermal Engineering & Technology Development

सेवा में / To,

सभी ताप विद्युत उत्पादन संयंत्र / All Thermal Power Generating Plants/Utilities

विषय/Subject: Safety Advisory to all Thermal Power Generating Utilities.

महोदय/महोदया / Sir/Madam,

You may be aware that Hon'ble National Green Tribunal vide its Order dated 22.12.2020 in O.A. No. 108/2020 with O.A. No. 130/2020 had directed that "*Secretaries, Ministry of Power and Coal, Government of India, in coordination with such other Departments/ Institutions, as may be necessary, to undertake Safety Audits of similarly placed thermal power stations throughout the country expeditiously preferably within six months to avoid recurrence of such incidents in future*".

In compliance to the aforesaid order, a Safety Audit Committee under the chairmanship of the undersigned was constituted by Central Electricity Authority (CEA) comprising representatives from Ministry of Coal, Central Boiler Board (CBB), Director General Fire Safety (DGFS), NTPC Ltd., NLC India Limited (NLCIL), Bharat Heavy Electrical Limited (BHEL) and other experts. The above Committee carried out the safety audit of different coal/lignite based Thermal Power plants across the country during the period of August to November 2021.

A safety advisory based on the broad deficiencies observed during above safety audits of the thermal power stations is enclosed at Annexure-I for your kind information and needful actions. However, safety of plant and personnel is not limited to these findings only. Utilities/plants may also continue to take regular safety measures as per the extant Rules and Regulations in this regard.

संलग्नक/Enclosure: यथोपरि/As above

भवदीय/Yours Sincerely,

(धीरज कुमार श्रीवास्तव / Dhiraj Kumar Srivastava)
मुख्य अभियंता / Chief Engineer

सेवा भवन ,आर.के .पुरम – 1, नई दिल्ली – 110066 टेलीफोन: 011-26732977, ईमेल: cetetd-cea@gov.in, वेबसाइट: www.cea.nic.in
Sewa Bhawan, R.K Puram-I, New Delhi -110066, Telephone: 011-26732977, Email: cetetd-cea@gov.in, Website: www.cea.nic.in

Annexure-I

Safety Advisory to all Thermal Power Generating Utilities

(A) General Safety and Fire Safety

1. Implement the requisite provisions of (1) Central Electricity Authority (Safety Requirements for Construction, Operation and Maintenance of Electrical Plants and Electric Lines) Regulations, 2011 (2) Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 (3) Statutory requirement under Factories Act and other related Acts such as Manufacture, Storage, and Import of Hazardous Chemicals (MSIHC) Rules, 1989 – entrusted functions and Response Rules (4) IS:1646 - Code of Practice for Fire safety of buildings (general): Electrical installations (5) IS:3034 - Fire safety of industrial buildings: Electrical generating and Distributing stations - Code of Practice.
2. Internal Safety Audits must be carried out once a year through cross functional teams/ internal trained staff and records must be maintained. Further, External Safety Audit must be carried out through registered Agencies at a regular periodicity of 2 years and Action Taken Report (ATR) must be prepared & monitored to ensure early closing of pending recommendations.
3. Ensure a separate budget head in its overall budget provisions to adequately fund safety related activities. Detailed safety manual complying with the statutory requirements and manufacturers' recommendations must be available with power plant.
4. Safety awareness drives must be conducted amongst plant personnel as well as the employees deployed by the Contractors, periodically for the compliance of provisions of safety manuals and to imbibe the safety culture.
5. The safety officer shall be appointed and safety committee shall be constituted by thermal power plant as per the statutory requirement. Plants shall hold Safety Committee meetings regularly and Head of Plant shall chair these meetings. The output of these Safety Committee meetings should be implemented.
6. Ensure that 'Safety Performance' KPA (Key Performance Area) for employees is linked with Annual Performance Assessment for officers at various levels to instill a safety-compliant behavior.
7. Keep an updated inventory of safety related PPEs and also provide the tasks specific PPE kits to all the workers/ staff.
8. All major/ minor accidents must be properly investigated and analyzed to find the Root Cause of incident/accident.
9. Implement procedures for reporting of accidents by the concerned Power Station to CEA in line with the provisions of the CEA safety regulations.

10. Emergency Response Disaster Management Plan (ERDMP) both On-site & Off-site shall be prepared by all power plants.
11. Ensure that a functional proper Public Address system is in place and also 'Walkie/ Talkie' should be mandatorily adopted in the power plants.
12. Plants must be compliant/ certified as per ISO: 45001 'Occupational Health & Safety Management System'.
13. Ensure that all fire safety procedures are followed and fire-fighting system, its operation, installations are well maintained and upkeep of various sub-components is reviewed at regular intervals to make sure their proper response during emergencies. These shall include but not be limited to the following:
    i. Fire Water pump house must be maintained in proper healthy condition. There should be no obstructions in the pathways and approaches to equipment should be hindrance free.
    ii. All fire hydrant pumps and jockey pumps must be maintained in healthy condition. The Fire Hydrant pumps need to be operated in 'AUTO MODE' & Sequential starting system should be in place. The reliability & availability of the Pumps are to be checked at frequent intervals and recorded.
    iii. Fire-fighting crew along with some identified regular employees must go through hands-on firefighting training including rescue and disaster handling to enhance effectiveness of firefighting & safety crew.
    iv. Manual call points (MCPs) must be provided at all the strategic locations of the power stations and must be integrated with the Fire Control Room for effective monitoring and to ensure timely & quick response from fire-fighting crew.
    v. Mock drills should be conducted at regular intervals and also at odd hours for various emergencies scenarios & debriefing session should be conducted after each mock drill. The gaps observed are to be analyzed and mitigation measures need to be taken. These details should be recorded in a register.
    vi. Fire Marshalls/ firefighting crew should be trained for actual emergencies scenarios.
    vii. Each Power Station shall have a Fire Emergency Plan formulated so as to facilitate organized actions (in case of fire) by employees at various levels, during day as well as night and shall also contain the instructions on fire prevention measures and the firefighting organization.
    viii. Fireboxes with hose reels at fire hydrant points must be available.
    ix. Non-sparking tools and flame-proof electric fittings should be mandatorily used at all places where flammable materials like coal gases are stored/ are in use. Also, static electric charge dissipate strips

be provided at the entry gate of such systems which are prone to catch fire easily.

14. Emergency exit path marking should be made available for safe evacuation of working personnel during emergency conditions. Emergency telephone numbers must be prominently displayed at prominent locations in the plant, such as at TG floor, Unit Control Room & emergency exit points etc. Display of DO's & DON'Ts should be done in large fonts for better visibility. All such Display Boards should have a DC backlit display.
15. Lock Out & Tag Out (LOTO) system for maintenance management should be fully implemented for safe operation of the power plants and a proper Permit to Work (PTW) system must be followed and there should be seamless integration between LOTO & PTW System (and also to ERP system, if available). Proper Job Safety Analysis (JSA) should be carried out before issuance of each PTW.
16. Accumulated and unwanted scrap/ dismantled machinery etc. should be removed from working areas such as boiler structure, TG floor etc. and stored at designated places. Measures should be taken to remove wild vegetation growth in switchyard.
17. Excessive accumulation of coal/ lignite dust in some of the vulnerable areas like Crusher house, transfer points, coal/ lignite Bunker house, etc. must be avoided.
18. Preventive measures such as anti-corrosion painting and regular maintenance should be done for support structures and various equipment.
19. Rotating parts of various equipment should be covered with proper guards.
20. SOPs for various plant equipment to be prepared and made available to working personnel.

(B) Boiler, Turbine and Generator (BTG) Safety

1. As per IBR Regulations, periodic Remnant Life Assessment (RLA) should be carried out.
2. Annual overhauling, Capital overhauling and Renovation & Modernization works must be done on time as these prevent equipment failures. Overhauling work should be monitored comprehensively.
3. The boilers must be operated by Boiler Operating Engineers (BOEs) in compliance with the provisions of IBR. Utilities with shortage of BOEs are advised to take immediate and urgent steps to ensure that sufficient number of engineers should be qualified BOEs.
4. Boilers having box type column-beam structure are prone to accumulation of coal/ash dust if there are openings in the boiler structure. Coal dust accumulated in such confined structure may lead to fire/explosion. All such openings in such kind of structure must be closed. Also, cleaning must ensured before closure.

5. Thermal insulation of Boiler, Turbine, associated sub-systems and all other critical equipment & lines must be ensured and maintained in good health. Regular thermal survey for surface temperature should be done. It is recommended to do insulation of.
6. Pulverized fuel leakage in mills, pipes, joints etc., if any, should be arrested on immediate basis.
7. The closeness of steam lines with other components/structure of Boiler or adjacent civil structure must be avoided.
8. All Boiler expansion indicators must be fitted properly to measure vertical movement as well as horizontal movement.
9. Mandatorily carry-out tool tagging to have effective inventory management and thus ensure timely availability of all tools & tackles. Tagging and marking date of last load testing of all O&M tools & tackles must be ensured.
10. Illumination measurement should be carried out as per IS:6665 and it needs to be improved in the plants wherever necessary.
11. Take measures to ensure that ambient noise levels around equipment like Turbine-Generator, Boiler etc. auxiliaries are in desired limits.
12. Regular ash level monitoring in ESP hoppers must be done by providing Ash Level Indicators (ALI). Timely steps must be taken for regular evacuation of ash. Also, ensure that ash hopper heaters are in healthy condition so that fluidity of ash is not hampered.
13. Safety Valves and Electromatic Relief Valves (ERVs) must be maintained in healthy condition and operative.
14. Vibration levels of machines such as TG set, fans, pumps, etc. must be monitored on regular basis and machines should not run beyond the recommended vibration limits prescribed by OEM.
15. Compulsorily carry out turbine over speeding test as per OEM recommendations.
16. Regularly perform checks for functionality of all the Protection & Interlocks (P&I) for various equipment and system.

(C) Balance of Plant (BoP) Safety

1. Chlorine leak sensor probes must be provided for all chlorine cylinder bays at proper locations. Water sprinkler system need to be installed in chlorination plant to neutralize chlorine leak in addition to the extant system.
2. Dust suppression system must be in operating condition to prevent coal/ lignite dust accumulation in areas such as coal/ lignite yard, Crusher house, transfer junctions/ points, coal/ lignite conveyor, coal/ lignite Bunker etc.
3. Battery Room is to be properly lined with 'Acid resistance tiles' up to the h[illegible] of 'Battery Bank'. It is suggested to provide Flame-proof lighting in the Batte[illegible]

room. It is also to be ensured that the Eye-wash system is located at a place nearby to the Battery Room.

4. Cable gallery/ racks must be maintained in healthy conditions with proper illumination levels, exhaust system and the cable dressing in the racks should be done properly. All entry & exit of cables must be sealed properly for preventing progression of fire and toxic gases to adjacent rooms.
5. Insulating floor or mat conforming to IS:15652 of appropriate voltage level shall be provided in front of the panels for the safety of operating personnel.
6. Regularly measure and maintain proper records of Resistance value of Earth pits and monitor Tan-Delta value of current transformers (CT) and all other oil-filled electrical equipment.
7. Oil soak pits of transformers should be kept free of waste material.
8. Manuals and Standard Operating Procedures (SOPs) for Ash Bund/ Dyke Maintenance should be prepared by Power Plant. Emergency Plan should be prepared to deal situations of Ash Dyke breach and should be made available to the Site engineers.

****

ANNEXURE-R13

उत्तर रेलवे
NORTHERN RAILWAY

दिनांक
06.05.2024

सेवा में
AGM/MGR/NTPC
UCR

महोदय
आपको अवगत कराया जाता है कि आपके द्वारा यदि Stage-4 के कार्य को पूरा कर लिया जायेगा तथा आप खाली रैकों का रिलीज Line No-13, 14, 15 में लेना चाहेंगे तो यह तब तक सम्भव नही है। जब तक नये Loco Shed एवं TNC कैम का निर्माण इसके अनुकूल न करदिया जाय -

धन्यवाद

Vinod

स्टेशन अधीक्षक
ऊँचाहार, उ०रे०

Signature Not Verified
Digitally signed by PARIMAL PIYUSH
Date: 2024.11.25 15:08:49 IST
Reason: AGM (Commercial)
Location: NTPC Limited