

Petition No :



A Maharatna Company

**Feroze Gandhi Unchahar Thermal Power Station, Stage
- II**

420 MW (2 x 210 MW)

**PETITION FOR DETERMINATION OF TARIFF
FOR THE PERIOD
01.04.2019 TO 31.03.2024**

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-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for approval of tariff of **Feroze Gandhi Unchahar Thermal Power Station Stage-II (420 MW) for the period from 01.04.2019 to 31.03.2024.**

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BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO.....

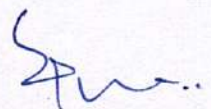
IN THE MATTER : Petition Under Section 62 and 79 (1) (a) of the
OF Electricity Act, 2003 read with Chapter-V of the
Central Electricity Regulatory Commission
(Conduct of Business) Regulations, 1999 and
Chapter-3, Regulation-9 of Central Electricity
Regulatory Commission (Terms and Conditions of
Tariff) Regulations, 2019 for approval of tariff of
**Feroze Gandhi Unchahar Thermal Power
Station Stage-II (420 MW) for the period from
01.04.2019 to 31.03.2024.**

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 Vikas Nigam Limited (RUVNL)
(On Behalf of Discoms of Rajasthan)
Vidyut Bhawan, Janpath,
Jaipur – 302 005 (Rajasthan)



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

4. BSES Rajdhani Power Ltd. (BRPL)
BSES Bhawan, Nehru Place
New Delhi – 110019

5. BSES Yamuna Power Ltd (BYPL)
Shakti Kiran Building
Karkardooma
Delhi- 110092

6. Haryana Power Purchase Centre (HPPC)
Shakti Bhawan, Sector-VI,
Panchkula, Haryana – 134109

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

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

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

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

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

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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, being a 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-II (2 x 210 MW) (hereinafter referred to as 'Unchahar-II') is one such station located in the State of Uttar Pradesh. The power generated from Unchahar-II 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, 2019 (hereinafter referred to as 'Tariff Regulations 2019') which came into force from 01.04.2019, specifying the terms & conditions and methodology of tariff determination for the period 01.04.2019 to 31.03.2024.



5) Regulation 9(2) of Tariff Regulations 2019 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 31.10.2019, based on admitted capital cost including additional capital expenditure already admitted and incurred up to 31.3.2019 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2019-24 along with the true up petition for the period 2014-19 in accordance with the CERC (Terms and Conditions of Tariff) Regulations, 2014.”


It is submitted that the date of filing of tariff petition has subsequently been extended by Hon'ble Commission vide order dated 28.10.2019 in Petition No. 331/MP/2019.

In terms of above, the Petitioner is filing the present petition for determination of tariff for Unchahar-II for the period from 01.04.2019 to 31.03.2024 as per the Tariff Regulations 2019.

6) The tariff of the Unchahar-II for the tariff period 1.4.2014 to 31.3.2019 was determined by the Hon'ble Commission vide its order dated 31.03.2017 and corrigendum dtd 24.5.2017 in Petition No. 289/GT/2014 in accordance with the CERC (Terms & Conditions of Tariff) Regulations 2014. The petitioner vide affidavit dated 03.12.2019 had filed a separate true up petition for the period 01.04.2014 to 31.03.2019 for revision of tariff in line with the applicable provisions of Tariff Regulations 2014.

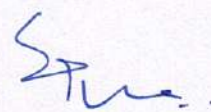
S. Anand

- 7) It is submitted that Hon'ble Commission vide order dated 31.03.2017 in Petition No. 289/GT/2014 has allowed a capital cost of Rs 1321.8821 Cr as on 31.03.2019 based on the admitted projected capital expenditure for the 2014-19 period. However, the actual closing capital cost as on 31.03.2019 has been worked out in the foresaid true-up petition as Rs 1315.5131 Cr based on the actual expenditure after truing up exercise for the period 2014-19. Accordingly, the Petitioner has adjusted an amount of Rs (-)6.3690 Cr from the admitted capital cost as on 31.03.2019 and accordingly the opening capital cost as on 01.04.2019 has been considered as Rs. 1315.5131 Cr in the instant petition. The Hon'ble Commission may be pleased to accordingly adopt this adjustment in the admitted capital cost as on 31.3.2019 and determine the tariff in the present petition for the period 2019-24.
- 8) The capital cost claimed in the instant petition is based on the opening capital cost as on 01.04.2019 considered as above and projected estimated capital expenditures for the period 2019-24 under Regulation 26 of the Tariff Regulations, 2019.
- 9) The Petitioner further respectfully submits that as per Regulation 35(1)(6) of the Tariff Regulations 2019, the water charges, security 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 2018-19 have been furnished below. Based on it & anticipated water consumption for 2019-24, water charges for 2019-24 has been projected. Accordingly, water charges may be allowed in tariff based on the same for the period 2019-24. In accordance with provision of the Regulations, the petitioner shall be furnishing the details of actuals for the relevant year at the time of truing up and the same shall be subject to retrospective adjustment.


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| Description | Remarks |
|---|------------------------------------|
| Type of Plant | Coal |
| Type of cooling water system | Closed Cycle |
| Consumption of Water | 462998590 Cubic feet / 14.89 cusec |
| Rate of Water charges | Rs 12.48 per 1000 cubic feet |
| Rate of Royalty | Rs 6 Lakhs per cusec per year |
| Total Water Charges (for FY 2018-19) | Rs 160.61 Lakhs |

- 10) Similarly, the Petitioner is claiming the security expenses based on the estimated expenses for the period 2019-24, 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 35(1)(6) based on actual consumption of spares during the period 2019-24
- 11) The present petition is filed on the basis of norms specified in the Tariff Regulations 2019. It is submitted that the petitioner is in the process of installing the Emission Control Systems (ECS) in compliance of the Revised Emission Standards as notified by MoEFCC 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 etc. In addition, the availability of the unit/ station would also be effected 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 Tariff Regulations 2019. The tariff of the instant petition would undergo changes consequent to the order of the Hon'ble Commission in the said ECS petition.



12) It is submitted that a notification dated 25.01.2016 has been issued by Government of India, Ministry of Environment, Forest & Climate Change (MoEFCC) under the statutory provisions of Environment (Protection) Act 1986. The said notification of MoEFCC prescribed bearing the transportation cost of Fly Ash generated at power stations. In this regard, Petitioner filed a petition, being no. 172/MP/2016, before the Hon'ble Commission seeking reimbursement of the additional expenditure for Fly Ash Transportation directly from the beneficiaries as the same was in the nature of statutory expense. Hon'ble Commission vide order dated 05.11.2018 disposed of the said petition and directed as follows:

"31. Accordingly, we in exercise of the regulatory power hold that the actual additional expenditure incurred by the Petitioner towards transportation of ash in terms of the MOEFCC Notification is admissible under "Change in Law" as additional O&M expenses. However, the admissibility of the claims is subject to prudence check of the following conditions on case to case basis for each station:

- a) Award of fly ash transportation contract through a transparent competitive bidding procedure. Alternatively, the schedule rates of the respective State Governments, as applicable for transportation of fly ash.*
- b) Details of the actual additional expenditure incurred on Ash transportation after 25.1.2016, duly certified by auditors.*
- c) Details of the Revenue generated from sale of fly ash/ fly ash products and the expenditure incurred towards Ash utilisation up to 25.1.2016 and from 25.1.2016 to till date, separately.*
- d) Revenue generated from fly Ash sales maintained in a separate account as per the MoEF notification.*


32. The Petitioner is granted liberty to approach the Commission at the time of revision of tariff of the generating stations based on trueing-up exercise for the period 2014-19 in terms of Regulation 8 of the 2014 Tariff Regulations along with all details / information, duly certified by auditor."

Petitioner has claimed the additional expenditure towards ash transportation charges for the period 2018-19 in the true-up petition filed vide affidavit dated 03.12.2019 in respect of the instant station.

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The expenditure towards the ash transportation charges are recurring in nature. The Petitioner has been incurring ash transportation expenditure in some of its stations in the current tariff period also. In case the same is permitted to be recovered at the end of the tariff period 2019-24, there will be additional liability on the beneficiary on account of the interest payment for the period till the time the true-up petitions for the period 2019-24 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 after adjusting the revenue earned from sale of ash at the end of each quarter of financial year subject to true-up at the end of the period.

- 13) It is submitted that the Petitioner has already paid the requisite filing fee vide UTR No. CMS1106438370 on 22.04.2019 for the year 2019-20 and the details of the same have been duly furnished to the Hon'ble Commission vide our letter dtd 25.04.2019 For the subsequent years, it shall be paid as per the provisions of the CERC (Payment of Fees) Regulations, 2012 as amended. Further Regulation 70(1) of Tariff Regulations 2019 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 recover filing fee and publication expenses directly from the beneficiaries.
- 14) The petitioner has accordingly calculated the tariff for 2019-24 period based on the above and the same is enclosed as **Appendix-I** to this petition.
- 15) 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.


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- 16) 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 St-II for the tariff period from 01.04.2019 to 31.03.2024.
- ii) Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries.
- iii) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries quarterly on net basis.
- iv) Pass any other order as it may deem fit in the circumstances mentioned above.


Petitioner

New Delhi

Date : 24.01.2020

BEFORE THE 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-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for approval of tariff of **Feroze Gandhi Unchahar Thermal Power Station Stage-II (420 MW)** for the period from 01.04.2019 to 31.03.2024

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



Signature

AFFIDAVIT

I, E. Prabhakara Rao, son of Late Shri E. K. Rama Sharma aged about 52 years resident of D-311, Parsvnath Prestige, Sector-93A, Noida (UP) solemnly affirm and state as follows:

1. That I am the Additional General Manager (Commercial) in Petitioner Corporation NTPC Ltd and am well conversant with the facts of the case and am competent to swear the present affidavit.

2. The statement made in the accompanying Petition for approval of tariff of **Feroze Gandhi Unchahar Thermal Power Station Stage-II (420 MW)** for the period from 01.04.2019 to 31.03.2024 are based on the official records maintained during the ordinary course of business and believed by the deponent to be true.


Deponent

Verification

I, the deponent above named, do hereby verify that the contents of the above affidavit are true to the best of my knowledge, no part of it is false and nothing material has been concealed there from.

Verified at New Delhi on this 24th Jan, 2020



Solemnly affirmed before me, read over & explained to the deponent.

Notary Public, DELHI

24 JAN 2020


Deponent

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TARIFF FILING FORMS (THERMAL)

FOR DETERMINATION OF TARIFF

FOR

Feroze Gandhi Unchahar Thermal Power Station Stage-II

(From 01.04.2019 to 31.03.2024)

PART-I

ANNEXURE-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 | ✓ |
| FORM-5A** | Abstract of Claimed Capital Cost for the existing Projects | ✓ |
| 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 | NA |
| 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 | NA |
| FORM- 15 | Details of Fuel for Computation of Energy Charges | ✓ |
| FORM- 15A** | Details of Secondary 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 | *** |

Provided yearwise for the period 2019-24

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

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

S. P. S.

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. | NA |
| | 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

Signature

**PART-I
FORM- 1**

Summary of Tariff

Name of the Petitioner:

NTPC Limited

Name of the Generating Station:

Feroze Gandhi Unchahar Thermal Power Station Stage-II

Place (Region/District/State):

Northern Region/ Raebareli/ Uttar Pradesh

| S. No. | Particulars | Unit | Existing 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | Amount in Rs. Lakhs | |
|--------|---|----------|---------------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------------|---|
| | | | | | | | | | 3 | 4 |
| 1.1 | Depreciation | Rs Lakh | 3,491.11 | 3,824.69 | 4,210.59 | 4,348.84 | 4,430.05 | 4,430.05 | | |
| 1.2 | Interest on Loan | Rs Lakh | - | - | - | - | - | - | | |
| 1.3 | Return on Equity | Rs Lakh | 7,772.36 | 7,518.64 | 7,645.03 | 7,682.10 | 7,699.03 | 7,699.03 | | |
| 1.4 | Interest on Working Capital | Rs Lakh | 5,136.25 | 3,647.56 | 3,685.77 | 3,718.84 | 3,752.56 | 3,784.70 | | |
| 1.5 | O&M Expenses | Rs Lakh | 17,398.34 | 14997.07 | 15586.15 | 16197.95 | 16846.09 | 17519.06 | | |
| 1.7 | Compensation Allowance (If applicable - relevant for column 4 only) | Rs. Lakh | 210.00 | | | | | | | |
| | Total | Rs Lakh | 34008.06 | 29987.96 | 31127.54 | 31947.73 | 32727.73 | 33432.85 | | |
| 2.1 | Landed Fuel Cost of coal | Rs/Ton | | | 4296.44 | | | | | |
| | (%) of Fuel Quantity | (%) | | | 100.00 | | | | | |
| 2.2 | Landed Fuel Cost of Imported Coal | | | | | | | | | |
| | (%) of Fuel Quantity | | | | N/A | | | | | |
| 2.3 | Landed Fuel Cost of coal other than FSA | Rs/Ton | | | | | | | | |
| | (%) of Fuel Quantity | (%) | | | N/A | | | | | |
| 2.4 | Landed Fuel Cost Imported Coal other than FSA | Rs/Ton | | | | | | | | |
| | (%) of Fuel Quantity | (%) | | | N/A | | | | | |
| 2.5 | Secondary fuel oil cost | Rs/Unit | | | 0.031 | | | | | |
| | Energy Charge Rate ex-bus (Paise/kWh) 2A, 2B, 2C, 2D | Rs/Unit | | | 3.038 | | | | | |

(Petitioner)

**PART-I
FORM- 1(I)**

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

Amount in Rs. Lakhs

| Statement showing claimed capital cost – (A+B) | | | | | | | |
|--|---|--------------------|--------------------|--------------------|--------------------|--------------------|--|
| S. No. | Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 1 | Opening Capital Cost | 1,31,551.31 | 1,35,392.77 | 1,36,122.05 | 1,36,723.05 | 1,36,723.05 | |
| 2 | Add: Addition during the year | 3,841.46 | 729.28 | 601.00 | - | - | |
| 3 | Less: De-capitalisation during the year | - | - | - | - | - | |
| 4 | Less: Reversal during the year | - | - | - | - | - | |
| 5 | Add: Discharges during the year | - | - | - | - | - | |
| 6 | Closing Capital Cost | 1,35,392.77 | 1,36,122.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | |
| 7 | Average Capital Cost | 1,33,472.04 | 1,35,757.41 | 1,36,422.55 | 1,36,723.05 | 1,36,723.05 | |

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

| S. No. | Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | |
|--------|---|------------------|------------------|------------------|------------------|------------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| 1 | Opening Capital Cost | 131551.31 | 135242.77 | 135941.05 | 136542.05 | 136542.05 | |
| 2 | Add: Addition during the year | 3691.46 | 698.28 | 601.00 | 0.00 | 0.00 | |
| 3 | Less: De-capitalisation during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4 | Less: Reversal during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5 | Add: Discharges during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6 | Closing Capital Cost | 135242.77 | 135941.05 | 136542.05 | 136542.05 | 136542.05 | |
| 7 | Average Capital Cost | 133397.04 | 135591.91 | 136241.55 | 136542.05 | 136542.05 | |

Signature

**PART-I
FORM- 1(I)**

| | |
|--|---|
| Name of the Petitioner: | NTPC Limited |
| Name of the Generating Station: | Feroze Gandhi Unchahar Thermal Power Station Stage-II |
| Amount in Rs. Lakhs | |

**Statement showing claimed capital cost eligible for RoE at weighted average rate of interest
on actual loan portfolio (B)**

| S. No. | Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|--------|---|--------------|---------------|---------------|---------------|---------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | Opening Capital Cost | 0.00 | 150.00 | 181.00 | 181.00 | 181.00 |
| 2 | Add: Addition during the year | 150.00 | 31.00 | 0.00 | 0.00 | 0.00 |
| 3 | Less: De-capitalisation during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | Less: Reversal during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | Add: Discharges during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | Closing Capital Cost | 150.00 | 181.00 | 181.00 | 181.00 | 181.00 |
| 7 | Average Capital Cost | 75.00 | 165.50 | 181.00 | 181.00 | 181.00 |

(Petitioner)

| | | PART-I FORM- I(IIA) | | | | | | |
|---|---|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Statement showing Return on Equity at Normal Rate | | NTPC Limited | | | | | | |
| Name of the Petitioner | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | | | |
| Name of the Generating Station | | Amount in Rs. Lakhs | | | | | | |
| S. No. | Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
| | Return on Equity | | | | | | | |
| 1 | Gross Opening Equity (Normal) | 39,465.40 | 40,572.83 | 40,782.32 | 40,962.62 | 40,962.62 | 40,962.62 | 40,962.62 |
| 2 | Less: Adjustment in Opening Equity | - | - | - | - | - | - | - |
| 3 | Adjustment during the year | - | - | - | - | - | - | - |
| 4 | Net Opening Equity (Normal) | 39,465.40 | 40,572.83 | 40,782.32 | 40,962.62 | 40,962.62 | 40,962.62 | 40,962.62 |
| 5 | Add: Increase in equity due to addition during the year | 1107.44 | 209.48 | 180.30 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | Less: Decrease due to De-capitalisation during the year | 0.00 | 0.00 | 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 | 0.00 | 0.00 |
| 9 | Add: Increase due to discharges during the year | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | Net closing Equity (Normal) | 40,572.83 | 40,782.32 | 40,962.62 | 40,962.62 | 40,962.62 | 40,962.62 | 40,962.62 |
| 11 | Average Equity (Normal) | 40,019.12 | 40,677.58 | 40,872.47 | 40,962.62 | 40,962.62 | 40,962.62 | 40,962.62 |
| 12 | Rate of ROE (%) | 18.782 | 18.782 | 18.782 | 18.782 | 18.782 | 18.782 | 18.782 |
| 13 | Total ROE | 7,516.39 | 7,640.06 | 7,676.67 | 7,693.60 | 7,693.60 | 7,693.60 | 7,693.60 |

(Petitioner)

| PART-I FORM- I(IIB) | | | | | | |
|---|--|---|---------|---------|---------|---------|
| Statement showing Return on Equity at Weighted Average Rate of Interest | | | | | | |
| Name of the Petitioner: | | NTPC Limited | | | | |
| Name of the Generating Station: | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | |
| | | Amount in Rs. Lakhs | | | | |
| S. No. | Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Return on Equity (beyond the original scope of work excluding additional capitalization due to Change in Law) | | | | | |
| 1 | Gross Opening Equity (Normal) | 0.00 | 45.00 | 54.30 | 54.30 | 54.30 |
| 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 | 45.00 | 54.30 | 54.30 | 54.30 |
| 5 | Add: Increase in equity due to addition during the year | 45.00 | 9.30 | 0.00 | 0.00 | 0.00 |
| 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) | 45.00 | 54.30 | 54.30 | 54.30 | 54.30 |
| 11 | Average Equity (Normal) | 22.50 | 49.65 | 54.30 | 54.30 | 54.30 |
| 12 | Rate of ROE (%) | 10.006 | 10.006 | 10.006 | 10.006 | 10.006 |
| 13 | Total ROE | 2.251 | 4.968 | 5.433 | 5.433 | 5.433 |

Plant Characteristics

| | | | |
|---|--------------------------------|------------|--------------|
| Name of the Petitioner | NTPC Ltd | | |
| Name of the Generating Station | FGUTPS-II | | |
| Unit(s)/Block(s)/Parameters | Unit-1 | Unit-2 | |
| Installed Capacity (MW) | 210 | 210 | |
| Schedule COD as per Investment Approval | | | |
| Actual COD | 01.01.2001 | 01.03.2000 | |
| Pit Head or Non Pit Head | Non Pit Head | | |
| Name of the Boiler Manufacture | BHEL | | |
| Name of Turbine Generator Manufacture | | | |
| Main Steams Pressure at Turbine inlet (kg/Cm ²) abs. | NA | | |
| Main Steam Temperature at Turbine inlet (°C) | | | |
| Reheat Steam Pressure at Turbine inlet (kg/Cm ²) | | | |
| Reheat Steam Temperature at Turbine inlet (°C) | | | |
| Main Steam flow at Turbine inlet under MCR condition (tons /hr) | | | |
| Main Steam flow at Turbine inlet under VVO condition (tons /hr) | | | |
| Unit Gross electrical output under MCR /Rated condition (MW) | | | |
| Unit Gross electrical output under VVO condition (MW) | | | |
| Guaranteed Design Gross Turbine Cycle Heat Rate (kCal/kWh) | | | |
| Conditions on which design turbine cycle heat rate guaranteed | | | |
| % MCR | | | |
| % Makeup Water Consumption | | | |
| Design Capacity of Make up Water System | | | |
| Design Capacity of Inlet Cooling System | | | |
| Design Cooling Water Temperature (°C) | | | |
| Back Pressure | | | |
| 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 (°C) | | | |
| Steam Temperature at Reheater outlet at BMCR condition(°C) | | | |
| Design / Guaranteed Boiler Efficiency (%) | | | |
| Design Fuel with and without Blending of domestic/imported coal | | | |
| Type of Cooling Tower | | | IDCT |
| Type of cooling system | | | Closed Cycle |
| Type of Boiler Feed Pump | | | MDBFP |
| Fuel Details | | | |
| -Primary Fuel | | | COAL |
| -Secondary Fuel | | | LDO/HFO |
| -Alternate Fuels | NA | | |
| Special Features/Site Specific Features | | | |
| Special Technological Features | NA | | |
| Environmental Regulation related features | ESP, FGD(under implementation) | | |
| Any other special features | | | |


 Petitioner

Normative parameters considered for tariff computations

**PART-I
FORM- 3**

| Name of the Petitioner: | NTPC Limited | | | | | | | |
|--|---|------------------|---------|---------|---------|---------|---------|---------------------|
| | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | | | | |
| Name of the Generating Station: | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | | | | |
| Particulars | Unit | Existing 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | (Year Ending March) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| Base Rate of Return on Equity \$\$ | % | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 | 15.50 |
| Base Rate of Return on Equity on Add. Capitalization** | % | - | 8.2575 | 8.2575 | 8.2575 | 8.2575 | 8.2575 | 8.2575 |
| Effective Tax Rate | % | 21.549 | 17.472 | 17.472 | 17.472 | 17.472 | 17.472 | 17.472 |
| Target Availability | % | 85.00 | 85.00 | | | | | |
| In High Demand Season | % | - | - | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 |
| Peak Hours | % | - | - | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 |
| Off-Peak Hours | % | - | - | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 |
| In Low Demand Season(Off-Peak) | % | - | - | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 |
| Peak Hours | % | - | - | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 |
| Off-Peak Hours | % | - | - | 85.00 | 85.00 | 85.00 | 85.00 | 85.00 |
| Auxiliary Energy Consumption | % | 9.00 | 9.80 | 9.80 | 9.80 | 9.80 | 9.80 | 9.80 |
| Gross Station Heat Rate | kCal/kWh | 2450.00 | 2430.00 | 2430.00 | 2430.00 | 2430.00 | 2430.00 | 2430.00 |
| Specific Fuel Oil Consumption | ml/kWh | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 |
| Cost of Coal/Lignite for WC | in Days | 60 | 50 | 50 | 50 | 50 | 50 | 50 |
| Cost of Main Secondary Fuel Oil for WC | in Months | 2 | 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 | 30.51 | 32.96 | 34.12 | 35.31 | 36.56 | 37.84 | 37.84 |
| Maintenance Spares for WC | % of O&M | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| Receivables for WC | in Days | 60 | 45 | 45 | 45 | 45 | 45 | 45 |
| Storage capacity of Primary fuel | MT | | | 650000 | | | | |
| SBI 1 Year MCLR plus 350 basis point | % | 13.50 | 12.05 | 12.05 | 12.05 | 12.05 | 12.05 | 12.05 |
| Blending ratio of domestic coal/imported coal | | | | | | | | |

** Rate of Return on Add - cap beyond original scope and excluding Change in Law
 \$\$ Additional RoE due to better ramp rate would be claimed at the time of true-up or as per guidelines to be issued

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-II | | | | | | | |
| | | Amount in Rs. Lakhs | | | | | | | |
| S.No. | Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | | | |
| 1 | 2 | 3 | 4 | 5 | 7 | 8 | | | |
| 1 | O&M expenses under Reg.35(1) | | | | | | | | |
| 1a | Normative | 13843.20 | 14330.40 | 14830.20 | 15355.20 | 15892.80 | | | |
| 2 | O&M expenses under Reg.35(6) | | | | | | | | |
| 2a | Water Charges | 124.35 | 124.35 | 124.35 | 124.35 | 124.35 | | | |
| 2b | Security expenses | 1029.53 | 1131.41 | 1243.41 | 1366.54 | 1501.92 | | | |
| 2c | Capital Spares** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| 3 | O&M expenses-Ash Transportation** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | |
| | Total O&M Expenses | 14997.07 | 15586.15 | 16197.95 | 16846.09 | 17519.06 | | | |

** Shall be provided at the time of truing up

Petitioner

Abstract of Admitted Capital Cost for the existing Projects

| | | | |
|--|--|---|---|
| Name of the Company : | | NTPC Limited | |
| Name of the Power Station : | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | |
| Last date of order of Commission for the project | | Date (DD-MM-YYYY) | 31.03.2017 & Corrigendum dtd 24.05.2017 |
| Reference of petition no. in which the above order was passed | | Petition no. | 289/GT/2014 |
| Following details as admitted as on the last date of the period for which tariff is approved, in the above order by the Commission: | | | |
| Capital cost as on 01.04.2019 | | | 132188.21 |
| Amount of un-discharged liabilities included in above (& forming part of admitted capital cost) | | | |
| Amount of un-discharged liabilities corresponding to above admitted capital cost (but not forming part of admitted capital cost being allowed on cash basis) | | | 24.59 |
| Gross Normative Debt | | (Rs. in lakh) | 92531.75 |
| Cumulative Repayment | | | 92531.75 |
| Net Normative Debt | | | 0 |
| Normative Equity | | | 39656.46 |
| Cumulative Depreciation | | | 95945.58 |
| Freehold land | | | 436.51 |

(Petitioner)

Abstract of Claimed Capital Cost for the existing Projects

| | | |
|--|---|------------|
| Name of the Company : | NTPC Limited | |
| Name of the Power Station : | Feroze Gandhi Unchahar Thermal Power Station Stage-II | |
| Reference of Final True-up Tariff Petition | Affidavit dated | 03.12.2019 |
| Capital Cost as on 31.03.2019 as per Hon'ble Commission's Order dated 31.03.2017 in Pet. No. 289/GT/2014 | Rs. Lakhs | 132188.21 |
| Adjustment as per Para 7 of this petition | | -636.90 |
| Following details as considered by the Petitioner as on the last date of the period for which final true-up tariff is claimed: | | |
| Capital cost as on 01.04.02019 | | 131551.31 |
| Amount of un-discharged liabilities included in above (& forming part of admitted capital cost) | | - |
| Amount of un-discharged liabilities corresponding to above admitted capital cost (but not forming part of admitted capital cost being allowed on cash basis) | | 24.59 |
| Gross Normative Debt as on 01.04.2019 | (Rs. in lakh) | 92085.91 |
| Cumulative Repayment as on 01.04.2019 | | 92085.91 |
| Net Normative Debt as on 01.04.2019 | | - |
| Normative Equity | | 39465.40 |
| Cumulative Depreciation | | 95521.70 |
| Freehold land | | 436.51 |

(Petitioner)

**Statement Giving Details of Project Financed through a Combination of loan
Form 8**

TRANCHE NO

BP NO 5050000261

T00001

D00012

| Unsecured Loan From SBI-VII | | |
|---|-----------------------------|-------------------------|
| Source of Loan : | SBI-VII | |
| Currency : | INR | |
| Amount of Loan : | 100,000,000,000 | |
| Total Drawn amount : | 2,500,000,000 | |
| Date of Drawl | 22.07.2013 | |
| Interest Type : | Floating | |
| Rate of Interest as on 01.04.2019 | 8.25% | |
| Upfront fees | 0.08% excluding service tax | |
| Margin, If Floating Interest : | Nil | |
| Are there any Caps/ Floor : | Y/N | |
| Frequency of Intt. Payment | Monthly | |
| If Above is yes, specify Caps/ Floor : | | |
| Moratorium Period : | 4 Years | |
| Moratorium effective from : | 08.07.2011 | |
| Repayment Period (Inc Moratorium) : | 12 Years | |
| Repayment Frequency : | 16 Half Yearly Instalments | |
| Repayment Type : | AVG | |
| First Repayment Date : | 30.09.2015 | |
| Base Exchange Rate : | RUPEE | |
| Date of Base Exchange Rate : | N.A. | |
| | | |
| | | |
| Project Code | Project Name | Amount |
| | BARH-II | 670,000,000 |
| | FARAKKA-III | 350,000,000 |
| | SIMHADRI-II | 200,000,000 |
| | RAMAGUNDAM SOLAR | 100,000,000 |
| | FGUTPS-I | 84,009,477 |
| | FGUTPS-II | 55,990,523 |
| | VSTPS R&M | 280,000,000 |
| | RAMAGUNDAM-R&M | 180,000,000 |
| | KORBA-R&M | 170,000,000 |
| | KAWAS-R&M | 170,000,000 |
| | BADARPUR-R&M | 140,000,000 |
| | TSTPP-R&M | 100,000,000 |
| | | |
| Total Allocated Amount | | 2,500,000,000.00 |

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-II | | | | | |
| COD | 01-01-2001 | | | | | |
| For Financial Year | 2019-24 (Summary) | | | | | |

| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | | | under which claimed | Justification | Amount in Rs Lakh Admitted Cost by the Commission, if any |
|--|--|-------------------------|----------------|----------------|----------|----------|---------------------|---|---|
| | | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| A. Works under Original scope, Change in Law etc. eligible for RoE at Normal Rate | | | | | | | | | |
| 1 | CLO2 system | 37.170 | 74.35 | 601.00 | - | - | 26(1)(b) & (d) | Refer Form 9A of 2019-20, 2020-21 & 2021-22 | |
| 2 | ESP Stage-II | 3,500.00 | 515.00 | - | - | - | 26 (1) (b) | Refer Form 9A of 2019-20 & 2020-21 | |
| 3 | Online Coal Analyser | 46,000 | 15.33 | - | - | - | 26 (1) (b) | Refer Form 9A of 2019-20 & 2020-21 | |
| 4 | Ash Water Recirculation System (AWRS) Stage-II | 100.00 | 93.60 | - | - | - | 26 (1) (b) | Refer Form 9A of 2019-20 & 2020-21 | |
| 5 | COLDFOG Dust Suppression System for Secondary Crusher House Stage-II | 8,291 | | | | | 26 (1) (b) | Refer Form 9A of 2019-20 | |
| | Total (A) | 3,691.46 | 698.28 | 601.00 | - | - | | | |
| B. Works beyond Original scope excluding add-cap due to Change in Law eligible for RoE at Wtd. Average rate of Interest | | | | | | | | | |
| 6 | Fire Alarm System for Stg # II | 150,000 | 31,000 | - | - | - | 26 (1) (d) | Refer Form 9A of 2019-20 & 2020-21 | |
| | Total (B) | 150,000 | 31,000 | - | - | - | | | |
| | Total Add. Cap. Claimed (A+B) | 3,841.461 | 729.280 | 601.000 | - | - | | | |

(Petitioner)

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-II | |
| COD | | 01-01-2001 | |
| For Financial Year | | 2019-20 | |

| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | Regulations under which claimed | Justification | Amount in Rs Lakh Admitted Cost by the Commission, if any | |
|--|-------------------------|----------------------------|--|------------|---------------------------------|----------------|---|------------------------|
| | | Accrual basis as per IGAAP | Un-discharged Liability included in col. 3 | Cash basis | | | | IDC included in col. 3 |
| 1 | 2 | 3 | 4 | 5= (3-4) | 6 | 7 | 8 | 9 |
| A. Works under Original scope, Change in Law etc. eligible for RoE at Normal Rate | | | | | | | | |
| 1 | CLO2 system | 37.17 | | 37.17 | | 26(1)(b) & (d) | In the instant station, at present Chlorine gas is being dozed directly at various stages of water treatment to maintain water quality and to inhibit organic growth in the water retaining structures/ equipment such as clarifiers, storage tanks, cooling towers, condenser tubes & piping etc. Chlorine dosing is done from chlorine stored in cylinders/ tonners. Chlorine gas is very hazardous and may prove fatal in case of leakage; handling and storage of same involves risk to the life of public at large. In the interest of public safety the chlorine dozing system is now being replaced by Chlorine Dioxide (ClO2) system, which is much safer and less hazardous than chlorine. In the proposed scheme ClO2 shall be produced on site by use of commercial grade HCl and sodium chlorite. As ClO2 is generated at site, avoids handling and storage risk. Further, at Kudgi NTPC project Department of Factories, Boiler, Industrial Safety and Health, Govt of Karnataka has directed NTPC to replace highly hazardous gas chlorination system with ClO2 system. SPCB, Odisha while issuing consent to establish in case of Darlipalli Station has asked NTPC to explore the possibility of installing ClO2 system instead of Chlorine gas system (Relevant documents is attached at <u>Annexure-I</u>). For safety of public NTPC is replacing the chlorination system with ClO2 system. A part of the work is expected to be capitalised during FY 2019-20 and balance major work shall be capitalised in subsequent Yrs. Accordingly, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) & (d). | |

Year wise Statement of Additional Capitalisation after COD

| Name of the Petitioner | | NTPC Limited | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | 01-01-2001 | | 2019-20 | | Amount in Rs Lakh Admitted Cost by the Commission, if any |
|--------------------------------|----------------------------|---|-------------------------|---|-------------------------------------|------------------------------|---|---------------|--|---|
| Name of the Generating Station | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | 01-01-2001 | | 2019-20 | | Justification | | |
| Sl. No. | Head of Work /Equipment | Accrual basis as per IGAAAP | ACE Claimed (Projected) | Un-discharged Liability included in col. 3 | Cash basis included in col. 3 | IDC included in col. 3 | Regulations under which claimed | | | |
| 1 | 2 | 3 | 4 | 5=(3-4) | 6 | 7 | 8 | 9 | | |
| 2 | ESP Stage-II | 3500.0 | - | 3,500.00 | - | 26 (1) (b) | MoEF, GoI vide its notification dated 7.12.2015, has notified new environmental norms. As per this notification, outlet particulate matter emission levels for units installed before December 31, 2003 has to be limited to 100 mg/m3. To comply with this statutory requirement, it has been decided to carry out upgradation of ESPs of FGUTPS Stage-II (2x210 MW) to meet the revised emission limit. The total award value of the contract is around Rs 40 Cr. A part of the work has been completed and capitalised during FY 2018-19. The balance work is expected to be completed during FY 2019-24 period. Hon'ble Commission may be pleased to allow the same. | | | |
| 3 | Online Coal Analyser | 46.0 | - | 46.00 | - | 26 (1) (b) | It is submitted that MOEF vide its OM dated 26.08.2015, has directed to all coal based thermal power plants for sampling and analysis of coal and reporting of compliance in respect of use and supply of raw or blended coal with ash content not exceeding 34% as content in coal (Relevant documents is attached at Annexure-II). This will be applicable on coal stations having installed capacity of 100 MW and above located at a distance of more than 500 kms from coal source. It is also directed that real time monitoring using auto mechanical sampling (online) from moving stream of coal to be used for sampling fuels. As the present station is located at a distance of more than 500 kms from the linked source and also mine coal from other mines under flexible coal utilization scheme, the petitioner has to necessarily incur the expenditure for installation on online coal analyser to comply with the direction of MOEF, GoI. Accordingly, Hon'ble Commission may be pleased to allow the same under change in law, under Regulation 26 (1) (b). | | | |

Year wise Statement of Additional Capitalisation after COD

| Name of the Petitioner | | NTPC Limited | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | 01-01-2001 | | 2019-20 | | Amount in Rs Lakh Admitted Cost by the Commission, if any |
|--------------------------------|---|---|---|---|-------------|------------|----------|---|---------------------------------------|---|
| Name of the Generating Station | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | 01-01-2001 | | 2019-20 | | Justification | | |
| COD | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | 01-01-2001 | | 2019-20 | | | Regulations under which claimed | |
| For Financial Year | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | 01-01-2001 | | 2019-20 | | IDC included in col. 3 | | |
| Sl. No. | Head of Work /Equipment | Accrual basis as per IGAAP | ACE Claimed (Projected) Un-discharged Liability included in col. 3 | Cash basis | 5=(3-4) | 6 | 7 | | 8 | 9 |
| 4 | Ash Water Recirculation System (AWRS) Stage-II | 100.0 | - | 100.00 | -26 (1) (b) | | | Ash Water Recirculation System (AWRS) for Stage-II was projected during FY 2014-19 period and Hon'ble Commission had approved the same under Change in Law based on the direction of Uttar Pradesh Pradushan Nigam Board. The work was awarded to M/s ADIL and it was expected to be completed during FY 2015-16. However M/s ADPL stopped the work since Oct 2015. The Contract was terminated on 04.10.2016. Major work was already completed. Retender was done for the balance work. The Balance work is expected to be completed during current FY 2019-20. Hon'ble Commission may be pleased to allow the same under Change in Law as the same is being carried for compliance of existing law. | 1,450.00 | |
| 5 | COLDFOG Dust Suppression System for Secondary Crusher House Stage-II | 8.29 | - | 8.29 | -26 (1) (b) | | | Crusher house in Coal Handling Plant (CHP) is adjacent to the station boundary. Outside the station boundary, there are villages in nearby area. Crusher House in CHP is coal dust prone area. In order to meet the norms for Particulate Matter (PM) in the air as per National Ambient Air Quality Standards dtd 18.11.2009 (copy attached as <u>Annexure-III</u>), cold fog system has been implemented. This is a new technology to optimize the application of water to capture dust fines floating in the air. In this approach, very fine water droplets are sprayed into the air after the dust becomes airborne. Fog systems provide highly effective, inexpensive dust capture combined with low cost of both installation and operation. When the water droplets and dust particles collide, agglomerates are formed. When these agglomerates become too heavy to remain airborne, they settle. Major work has been completed during FY 2018-19. The Balance work is expected to be completed during current FY 2019-20. Hon'ble Commission may be pleased to allow the same. | | |
| Total (A) | | 3,683.17 | - | 3,683.17 | - | - | - | | | |

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-II | | |
| COD | 01-01-2001 | | |
| For Financial Year | 2019-20 | | |

| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | Regulations under which claimed | Justification | Amount in Rs Lakh Admitted Cost by the Commission, if any | |
|--------------------------------|---|----------------------------|--|-----------------|---------------------------------|---|---|------------------------|
| | | Accrual basis as per IGAAP | Un-discharged Liability included in col. 3 | Cash basis | | | | IDC included in col. 3 |
| 1 | 2 | 3 | 4 | 5= (3-4) | 6 | 7 | 8 | 9 |
| B. | Works beyond Original scope excluding add-cap due to Change in Law eligible for RoE at Wtd. Average rate of Interest | | | | | | | |
| 6 | Fire Alarm System for Stg # II | 150.0 | - | 150.00 | -26 (1) (d) | Fire Fighting System for CHP area is essentially required to prevent any catastrophic damage in case of fire breaks out in CHP as existence of coal in CHP area makes it vulnerable to fire hazard and mobile fire protection equipments are not sufficient to control the spread of fire. Accordingly, the work was projected during 2014-19 period and Hon'ble Commission has referred the matter to CEA and has given liberty to claim at the time of truing-up. The work is expected to be completed during FY 2020-21. Since the work is essentially required for Safety of the plant, it is prayed that Hon'ble Commission may be pleased to allow the same. | | |
| Total (B) | | 150.00 | - | 150.00 | - | | | |
| Total Add. Cap. Claimed | | 3,833.17 | - | 3,833.17 | - | | | |

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(Petitioner)

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-II | | | | | | |
| COD | | 01-01-2001 | | | | | | |
| For Financial Year | | 2020-21 | | | | | | |
| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | Regulations under which claimed | Justification | Amount in Rs Lakh Admitted Cost by the Commission, if any | |
| 1 | 2 | 3 | 4 | 5=(3-4) | 6 | 7 | 8 | 9 |
| A. Works under Original scope, Change in Law etc. eligible for RoE at Normal Rate | | | | | | | | |
| 1 | CLO2 system | 74.35 | - | 74.35 | - | 26(1)(b) & (d) | Justification as mentioned in Form-9A for FY 2019-20 at sl no. 1. A part of the work is expected to be capitalised during FY 2019-20 & 2020-21 and the balance major work shall be capitalised during FY 2021-22. Accordingly, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) & (d). | |
| 2 | ESP Stage-II | 515.00 | - | 515.00 | - | 26 (1) (b) | Justification as mentioned in Form-9A for FY 2019-20 at sl no. 2. A part of the work has been completed and capitalised during FY 2019-20. The balance work is expected to completed during FY 2020-21. Hon'ble Commission may be pleased to allow the same. | |
| 3 | Online Coal Analyser | 15.33 | - | 15.33 | - | 26 (1) (b) | Justification as mentioned in Form-9A for FY 2019-20 at sl no. 3. A part of the work has been completed and capitalised during FY 2019-20. The balance work is expected to completed during FY 2020-21. Hon'ble Commission may be pleased to allow the same. | |
| 4 | Ash Water Recirculation System (AWRS) Stage-II | 93.60 | - | 93.60 | - | 26 (1) (b) | Justification as mentioned in Form-9A for FY 2019-20 at sl no. 4. A part of the work has been completed and capitalised during FY 2019-20. The balance work is expected to completed during FY 2020-21. Hon'ble Commission may be pleased to allow the same. | |

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-II | | | |
| COD | | 01-01-2001 | | | |
| For Financial Year | | 2020-21 | | | |

| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | Regulations under which claimed | Justification | Amount in Rs Lakh Admitted Cost by the Commission, if any | |
|--|--------------------------------|----------------------------|--|---------------|---------------------------------|---|---|------------------------|
| | | Accrual basis as per IGAAP | Un-discharged Liability included in col. 3 | Cash basis | | | | IDC included in col. 3 |
| 1 | 2 | 3 | 4 | 5=(3-4) | 6 | 7 | 8 | 9 |
| | Total (A) | 698.28 | - | 698.28 | - | | | |
| B. Works beyond Original scope excluding add-cap due to Change in Law eligible for RoE at Wtd. Average rate of Interest | | | | | | | | |
| 5 | Fire Alarm System for Stg # II | 31.00 | - | 31.00 | -26 (1) (d) | Justification as mentioned in Form-9A for FY 2019-20 at sl no. 5. A part of the work has been completed and capitalised during FY 2019-20. The balance work is expected to be completed during FY 2020-21. Hon'ble Commission may be pleased to allow the same. | | |
| | Total (B) | 31.00 | - | 31.00 | - | | | |
| | Total Add. Cap. Claimed | 729.28 | - | 729.28 | - | | | |

(Petitioner)

Year wise Statement of Additional Capitalisation after COD

| Name of the Petitioner | | NTPC Limited | | | | | | | Amount in Rs Lakh |
|---|-------------------------|---|---|----------|---------------------------------|----------------|---|---|-------------------|
| Name of the Generating Station | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | | | | |
| COD | | 01-01-2001 | | | | | | | |
| For Financial Year | | 2021-22 | | | | | | | |
| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | Regulations under which claimed | Justification | Admitted Cost by the Commission, if any | | |
| 1 | 2 | 3 | 4 | 5= (3-4) | 6 | 7 | 8 | 9 | |
| A. Works under Original scope, Change in Law etc. eligible for RoE at Normal Rate | | | | | | | | | |
| 1 | CLO2 system | 601.00 | - | 601.00 | - | 26(1)(b) & (d) | Justification as mentioned in Form-9A for FY 2019-20 at sl no. 1. A part of the work is expected to be capitalised during FY 2019-20 & 2020-21 and the balance major work shall be capitalised during FY 2021-22. Accordingly, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) & (d). | | |
| Total (A) | | 601.00 | - | 601.00 | - | | | | |
| B. Works beyond Original scope excluding add-cap due to Change in Law eligible for RoE at Wid. Average rate of Interest | | | | | | | | | |
| NA | | - | - | - | - | | NA | | |
| Total (B) | | - | - | - | - | | | | |
| Total Add. Cap. Claimed | | 601.00 | - | 601.00 | - | | | | |

(Petitioner)

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-II | | |
| COD | 01-01-2001 | | |
| For Financial Year | 2022-23 | | |

| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | | Regulations under which claimed | Justification | Amount in Rs Lakh Admitted Cost by the Commission, if any |
|--|-------------------------------|----------------------------|--|------------|------------------------|---------------------------------|---------------|---|
| | | Accrual basis as per IGAAP | Un-discharged Liability included in col. 3 | Cash basis | IDC included in col. 3 | | | |
| 1 | 2 | 3 | 4 | 5= (3-4) | 6 | 7 | 8 | 9 |
| A. Works under Original scope, Change in Law etc. eligible for RoE at Normal Rate | | | | | | | | |
| | NA | - | - | - | - | - | NA | |
| | Total (A) | - | - | - | - | - | | |
| B. Works beyond Original scope excluding add-cap due to Change in Law eligible for RoE at Wtd. Average rate of Interest | | | | | | | | |
| | NA | - | - | - | - | - | NA | |
| | Total (B) | - | - | - | - | - | | |
| | Total Add. Cap. Claimed (A+B) | - | - | - | - | - | | |

(Petitioner)

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-II | |
| COD | 01-01-2001 | |
| For Financial Year | 2023-24 | |

| Sl. No. | Head of Work /Equipment | ACE Claimed (Projected) | | | | Regulations under which claimed | Justification | Amount in Rs Lakh Admitted Cost by the Commission, if any |
|---------|--|----------------------------|--|------------|------------------------|---------------------------------|---------------|---|
| | | Accrual basis as per IGAAP | Un-discharged Liability included in col. 3 | Cash basis | IDC included in col. 3 | | | |
| 1 | 2 | 3 | 4 | 5= (3-4) | 6 | 7 | 8 | 9 |
| A. | Works under Original scope, Change in Law etc. eligible for RoE at Normal Rate | - | - | - | - | - | NA | |
| | Total (A) | - | - | - | - | - | | |
| B. | Works beyond Original scope excluding add-cap due to Change in Law eligible for RoE at Wtd. Average rate of Interest | - | - | - | - | - | NA | |
| | Total (B) | - | - | - | - | - | | |
| | Total Add. Cap. Claimed (A+B) | - | - | - | - | - | | |

(Petitioner)

Financing of Additional Capitalisation

| | | | | | | | | | | | |
|--------------------------------|---|--|--|--|--|--|--|--|--|--|--|
| Name of the Petitioner | NTPC Limited | | | | | | | | | | |
| Name of the Generating Station | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | | | | | | | |
| Date of Takeover | 01-01-2001 | | | | | | | | | | |

| Financial Year (Starting from COD)1 | Actual | | | | | Admitted | | | | | Amount in Rs Lakh |
|--|---------|---------|---------|---------|---------|----------|---------|---------|---------|---------|-------------------|
| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | |
| 1 | | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |

Amount capitalised in Work/ Equipment

| | |
|----------------------|--|
| Financing Details | |
| Loan-1 | |
| Loan-2 | |
| Loan-3 and so on | |
| Total Loan2 | |
| Equity | |
| Internal Resources | |
| Others (Pl. specify) | |
| Total | |

Add cap is proposed to be funded in Debt:Equity ratio of 70:30

Statement of Depreciation

Name of the Company :

NTPC Limited

Name of the Power Station :

Feroze Gandhi Unchahar Thermal Power Station Stage-II

| S. No. | Particulars | Existing 2018-19 | (Amount in Rs Lakh) | | | | | | | |
|--------|--|------------------|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2023-24 | 2023-24 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | |
| 1 | Opening Capital Cost | 130700.45 | 1,31,551.31 | 1,35,392.77 | 1,36,122.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 |
| 2 | Closing Capital Cost | 131551.31 | 1,35,392.77 | 1,36,122.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 |
| 3 | Average Capital Cost | 131125.88 | 1,33,472.04 | 1,35,757.41 | 1,36,422.55 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 | 1,36,723.05 |
| 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 | 436.51 | 436.51 | 436.51 | 436.51 | 436.51 | 436.51 | 436.51 | 436.51 | 436.51 |
| 5 | Rate of depreciation | | - | - | - | - | - | - | - | - |
| 6 | Depreciable value | 1,17,620.43 | 1,19,731.98 | 1,21,788.81 | 1,22,387.44 | 1,22,657.89 | 1,22,657.89 | 1,22,657.89 | 1,22,657.89 | 1,22,657.89 |
| 7. | Balance useful life at the beginning of the period | 7.33 | 6.33 | 5.33 | 4.33 | 3.33 | 2.33 | 2.33 | 2.33 | 2.33 |
| 8 | Remaining depreciable value | 25,589.85 | 24,210.29 | 22,442.43 | 18,830.47 | 14,752.08 | 10,322.03 | 4,430.05 | 4,430.05 | 4,430.05 |
| 9 | Depreciation (for the period) | 0.00 | 3,824.69 | 4,210.59 | 4,348.84 | 4,430.05 | 4,430.05 | 4,430.05 | 4,430.05 | 4,430.05 |
| 10 | Depreciation (annualised) | 3,491.11 | 3,824.69 | 4,210.59 | 4,348.84 | 4,430.05 | 4,430.05 | 4,430.05 | 4,430.05 | 4,430.05 |
| 11 | Cumulative depreciation at the end of the period | | 99,346.38 | 1,03,556.97 | 1,07,905.81 | 1,12,335.86 | 1,16,765.91 | 1,16,765.91 | 1,16,765.91 | 1,16,765.91 |
| 12 | Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009 | 0.00 | - | - | - | - | - | - | - | - |
| 13 | Add: Cumulative depreciation adjustment on account of liability Discharge | 0.00 | - | - | - | - | - | - | - | - |
| 14 | Less: Cumulative depreciation adjustment on account of de-capitalisation | 41.69 | - | - | - | - | - | - | - | - |
| 15 | Net Cumulative depreciation at the end of the period after adjustments | 95,521.69 | 99,346.38 | 1,03,556.97 | 1,07,905.81 | 1,12,335.86 | 1,16,765.91 | 1,16,765.91 | 1,16,765.91 | 1,16,765.91 |

** Shall be provided at the time of truing up

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(Petitioner)

| | | | | PART-I FORM- 13 | |
|--|---------|-------------------------|---------|----------------------------|---------|
| Calculation of Weighted Average Rate of Interest on Loan. | | | | | |
| Name of Company: | | NTPC LTD. | | | |
| Name of the Power Station: | | FGUTPS- Stage II | | | |
| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| SBI VII D-12 | | | | | |
| Net Loan Opening | 279.95 | 209.96 | 139.98 | 69.99 | 0.00 |
| Additions | | | | | |
| Repayment | 69.99 | 69.99 | 69.99 | 69.99 | 0.00 |
| Net Loan Closing | 209.96 | 139.98 | 69.99 | 0.00 | 0.00 |
| Avg Loan | 244.96 | 174.97 | 104.98 | 34.99 | 0.00 |
| Rate of Interest | 8.2575% | 8.2575% | 8.2575% | 8.2575% | 8.2575% |
| Interest | 20.23 | 14.45 | 8.67 | 2.89 | 0.00 |
| Total Loan | | | | | |
| Net Loan Opening | 279.95 | 209.96 | 139.98 | 69.99 | 0.00 |
| Additions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Repayment | 69.99 | 69.99 | 69.99 | 69.99 | 0.00 |
| Net Loan Closing | 209.96 | 139.98 | 69.99 | 0.00 | 0.00 |
| Avg Loan | 244.96 | 174.97 | 104.98 | 34.99 | 0.00 |
| Rate of Interest | 8.2575% | 8.2575% | 8.2575% | 8.2575% | 0.0000% |
| Interest | 20.23 | 14.45 | 8.67 | 2.89 | 0.00 |
| Note:- | | | | | |
| 1) SBI VII Rate of Interest includes upfront fees of 0.0075% (i.e. 0.08%*1.1236%/12years). | | | | | |

St...

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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-II | | | | | | | | | | |
| S. No. | Month | Unit | Oct-18 | | Nov-18 | | Dec-18 | | Domestic | Imported | Domestic | Imported |
| | | | Domestic | Imported | Domestic | Imported | Domestic | Imported | | | | |
| 1 | Quantity of Coal supplied by Coal Company* | (MT) | 4,26,491.27 | | 4,66,330.82 | | 7,17,402.45 | | | 7,17,402.45 | | |
| 2 | Adjustment (+/-) in quantity supplied made by Coal Company | (MT) | -205.00 | | - | | -465.00 | | | -465.00 | | |
| 3 | Coal supplied by Coal Company (1+2) | (MT) | 4,26,286.27 | | 4,66,330.82 | | 7,16,937.45 | | | 7,16,937.45 | | |
| 4 | Normative Transit & Handling Losses | (MT) | 3,090.24 | | 3,441.89 | | 4,871.72 | | | 4,871.72 | | |
| 5 | Net coal / Lignite Supplied (3-4) | (MT) | 4,23,196.03 | | 4,62,888.93 | | 7,12,065.74 | | | 7,12,065.74 | | |
| 6 | Amount charged by the Coal Company* | (Rs.) | 1,31,86,25,700 | | 1,43,47,92,597 | | 2,09,80,44,090 | | | 2,09,80,44,090 | | |
| 7 | Adjustment (+/-) in amount charged made by Coal Company | (Rs.) | -5,94,500 | | | | -12,65,625 | | | -12,65,625 | | |
| 8 | Total amount Charged (6+7) | (Rs.) | 1,31,80,31,200 | | 1,43,47,92,597 | | 2,09,67,78,465 | | | 2,09,67,78,465 | | |
| 9 | Transportation charges by rail transport | (Rs.) | 54,50,31,691 | | 60,99,78,457 | | 86,17,48,793 | | | 86,17,48,793 | | |
| 10 | Adjustment (+/-) in amount charged made by Railways | (Rs.) | | | | | | | | | | |
| 11 | Demurrage Charges | (Rs.) | | | | | | | | | | |
| 12 | Cost of diesel in transporting coal through MGR system | (Rs.) | | | | | | | | | | |
| 13 | Total Transportation Charges (9+10+11+12) | (Rs.) | 54,50,31,691 | | 60,99,78,457 | | 86,17,48,793 | | | 86,17,48,793 | | |
| 13A | Others (stone picking charges, loco driver's salary, sampling charges etc) | (Rs.) | | | | | | | | | | |
| 14 | Total amount Charged for coal supplied including Transportation (8+13+13A) | (Rs.) | 1,86,30,62,891 | | 2,04,47,71,054 | | 2,95,85,27,257 | | | 2,95,85,27,257 | | |
| 15 | Landed cost of coal (14)/(5) | Rs./MT | 4402.36 | | 4417.41 | | 4154.85 | | | 4154.85 | | |
| 16 | Blending Ratio (Domestic/Imported) | | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | | 1.00 | 0.00 | |
| 17 | Weighted average cost of coal for preceding three months | Rs./MT | | | 4296.44 | | | | | | | |
| 18 | GCV of Domestic Coal supplied as per bill of Coal Company | (kCal/Kg) | 4561 | | 4692 | | 4467 | | | 4467 | | |
| 19 | GCV of Imported Coal supplied as per bill Coal Company | (kCal/Kg) | | | | | | | | | | |
| 20 | Weighted average GCV of coal as Billed | (kCal/Kg) | 4561 | | 4692 | | 4467 | | | 4467 | | |
| 21 | GCV of Domestic Coal as received at Station | (kCal/Kg) | 4120 | | 3952 | | 3794 | | | 3794 | | |
| 22 | GCV of Imported Coal as received at Station | (kCal/Kg) | | | | | | | | | | |
| 23 | Weighted average GCV of coal as Received | (kCal/Kg) | 4120 | | 3952 | | 3794 | | | 3794 | | |

* Includes opening stock.

(Petitioner)

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-II | | | | | | | | | | | |
| Sl.No. | Month | Unit | Oct-18 | | Nov-18 | | Dec-18 | | | | | | |
| | | | HFO | LDO | HFO | LDO | HFO | LDO | | | | | |
| 1 | Quantity of Oil supplied by Oil Company* | KL | 343.19 | 130.13 | 896.53 | 832.13 | 907.10 | 1,553.63 | | | | | |
| 2 | Adjustment(+/-) in quantity supplied made by Oil Company | KL | - | - | - | - | - | - | | | | | |
| 3 | Oil supplied by Oil Company (1+2) | KL | 343.19 | 130.13 | 896.53 | 832.13 | 907.10 | 1,553.63 | | | | | |
| 4 | Normative Transit & Handling Losses | KL | - | - | - | - | - | - | | | | | |
| 5 | Net Oil Supplied (3-4) | KL | 343.19 | 130.13 | 896.53 | 832.126 | 907.10 | 1,553.632 | | | | | |
| 6 | Amount charged by the Oil Company* | (Rs) | 1,48,08,026 | 60,16,428 | 4,50,37,315 | 4,82,11,238 | 4,39,38,213 | 8,64,28,035 | | | | | |
| 7 | Adjustment(+/-) in amount charged made by Oil Company | (Rs) | - | - | - | - | - | - | | | | | |
| 8 | Total amount charged (6+7) | (Rs) | 1,48,08,026 | 60,16,428 | 4,50,37,315 | 4,82,11,238 | 4,39,38,213 | 8,64,28,035 | | | | | |
| 9 | Transportation charges by rail / ship / road transport | (Rs) | - | - | - | - | - | - | | | | | |
| 10 | Adjustment (+/-) in amount charged made by Railways/Transport Company | (Rs) | - | - | - | - | - | - | | | | | |
| 11 | Demurrage Charges, if any | (Rs) | - | - | - | - | - | - | | | | | |
| 12 | Cost of diesel in transporting Oil through MGR system, if applicable | (Rs) | - | - | - | - | - | - | | | | | |
| 13 | Total Transportation Charges (9+/-10-11+12) | (Rs) | - | - | - | - | - | - | | | | | |
| 14 | Others -Entry Tax on Oil | (Rs.) | - | - | - | - | - | - | | | | | |
| 15 | Total amount Charged for fuel supplied including Transportation (8+13+14) | (Rs) | 1,48,08,026 | 60,16,428 | 4,50,37,315 | 4,82,11,238 | 4,39,38,213 | 8,64,28,035 | | | | | |
| 16 | Weighted average GCV of Oil as fired | (kCal/L) | - | 9,488.00 | - | 9,626.00 | - | 9,720.00 | | | | | |
| 17 | Weighted average rate of Secondary Fuel | Rs/KL | 43,148.69 | 46,235.40 | 50,234.92 | 57,937.42 | 48,438.22 | 55,629.67 | | | | | |

Note: In terms of the order of Hon'ble Supreme Court regarding ban on use of HFO, main secondary fuel at Unchahar is LDO w.e.f. 01.01.2019 and the same has been considered for calculation of Working Capital.

* Includes opening balance

Computation of Energy Charges

Form-15B
ADDITIONAL FORM

| | |
|---------------------------|---|
| Name of the Company | NTPC Limited |
| Name of the Power Station | Feroze Gandhi Unchahar Thermal Power Station Stage-II |

Computation of Energy Charges

- Rate of Energy Charge from Sec. Fuel Oil/ Alternate Fuel (p/kwh) $(REC)_s$

$$= (Q_s)_n \times P_s$$

2.795
- Heat Contribution from SFO / Alternate Fuel (H_c)

$$= (Q_s)_n \times (GCV)_s$$

4.838
- Heat Contribution from coal $(H_c)_s$

$$= GHR - H_c$$

2425.16
- Specific Primary Fuel Consumption $(Op)_n$

$$= H_c / (GCV)_p$$

0.631
- Rate of Energy charge from Primary Fuel (p/kwh) $(REC)_p$

$$= (Op)_n \times (GCV)_p$$

271.266
- Rate of Energy charge ex-bus (p/kWh) (REC)

$$= ((REC)_s + (REC)_p) / (1 - (AUX))$$

303.837

| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|----------------------------|---------|---------|---------|---------|---------|
| No of Days in the year | 366 | 365 | 365 | 365 | 366 |
| Sp. Oil consumption ml/kwh | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Auxiliary consumption % | 9.80 | 9.80 | 9.80 | 9.80 | 9.80 |
| Heat Rate Kcal/Kwh | 2,430 | 2,430 | 2,430 | 2,430 | 2,430 |

Computation of Variable Charges

| | | | | | |
|------------------------------|---------|---------|---------|---------|---------|
| Variable Charge (Coal) p/kwh | 300.738 | 300.738 | 300.738 | 300.738 | 300.738 |
| Variable Charge (Oil) p/kwh | 3.100 | 3.100 | 3.100 | 3.100 | 3.100 |
| Total p/kwh | 303.840 | 303.840 | 303.840 | 303.840 | 303.840 |

Price of fuel from Form-15/15A

| | | | | | |
|--------------------|----------|----------|----------|----------|----------|
| Coal Cost (Rs./MT) | 4296.44 | 4296.44 | 4296.44 | 4296.44 | 4296.44 |
| Oil Cost (Rs./KL) | 55907.07 | 55907.07 | 55907.07 | 55907.07 | 55907.07 |

Computation of Fuel Expenses for Calculation of IWC:

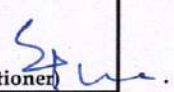
| | | | | | |
|--|----------|----------|----------|----------|----------|
| ESO in a year (MUs) | 2828.57 | 2820.84 | 2820.84 | 2820.84 | 2828.57 |
| ESO for 50 days (MUs) | 386.417 | 386.417 | 386.42 | 386.42 | 386.417 |
| Cost of coal for 45 Days (Rs. Lakh) | 11621.03 | 11621.03 | 11621.03 | 11621.03 | 11621.03 |
| Cost of oil for 2 months (Rs. Lakh) | 146.14 | 145.74 | 145.74 | 145.74 | 146.14 |
| Energy Expenses for 45 days (Rs. Lakh) | 10566.80 | 10566.80 | 10566.80 | 10566.80 | 10566.80 |

| Coal | Oct'18 | Nov'18 | Dec'18 | Wtd. Avg. |
|---|----------|----------|----------|----------------|
| Wtd. Avg. Price of Coal Rs./MT | 4402.36 | 4417.41 | 4154.85 | 4296.44 |
| Wtd. Avg. GCV of Coal as received kCal/Kg | 4120 | 3952 | 3794 | 3926.09 |
| Wtd. Avg. GCV of Coal as received after adjustment of 85 kcal/kg | | | | 3841.09 |
| Sec. Oil | | | | |
| Wtd. Avg. Price of Secondary Fuel Rs/KL | 46235.40 | 57937.42 | 55629.67 | 55907.07 |
| Wtd. Avg. GCV of Secondary Fuel kCal/L | 9488 | 9626 | 9720 | 9676.91 |

PETITIONER

| | | | | |
|--|---|--|---------------------------|-------------|
| Name of the Petitioner | | NTPC Ltd | | |
| Name of the Generating Station | | Feroze Gandhi Unchahar Thermal Power Station, Stg-II | | |
| Statement of Capital cost (To be given for relevant dates and year wise) | | | | |
| (Amount in Rs. Lakh) | | | | |
| S. No. | Particulars | as on 31.03.2019 | | |
| | | Accrual Basis | Un-discharged Liabilities | Cash Basis |
| A | a) Opening Gross Block Amount as per books | 1,37,189.77 | 74.52 | 1,37,115.25 |
| | b) Amount of IDC in A(a) above | | 123.91 | |
| | c) Amount of FC in A(a) above | | | - |
| | d) Amount of FERV in A(a) above | | 264.7 | |
| | 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) | | | |
| | 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 | | | |

To be filed at the time of truing-up


(Petitioner)

Name of the Petitioner NTPC Ltd

Name of the Generating Station Feroze Gandhi Unchahar Thermal Power Station, Stg-II

Statement of Capital Woks in Progress

(To be given for relevant dates and year wise)

(Amount in Rs. Lakh)

| S. No. | Particulars | as on 31.03.2019 | | |
|--------|--|------------------|---------------------------|------------|
| | | Accrual Basis | Un-discharged Liabilities | Cash Basis |
| A | a) Opening CWIP as per books | 3,633.71 | 633.21 | 3,000.50 |
| | 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 | | | |
| | 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 | | | |

To be filed at the time of truing-up.


 (Petitioner)

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Calculation of Interest on Normative Loan

| Name of the Company : | | NTPC Limited | | | | | | | |
|-----------------------------|--|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Name of the Power Station : | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | | | | |
| S. No. | Particulars | (Amount in Rs Lakh) | | | | | | | |
| | | Existing 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | 2022-23 | 2023-24 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 7 | 8 |
| 1 | Gross Normative loan – Opening | 91,490.31 | 92,085.91 | 94,774.94 | 95,285.43 | 95,706.13 | 95,706.13 | 95,706.13 | 95,706.13 |
| 2 | Cumulative repayment of Normative loan up to previous year | 91,490.31 | 92,085.91 | 95,910.60 | 1,00,121.19 | 1,04,470.02 | 1,08,900.08 | 1,04,470.02 | 1,08,900.08 |
| 2A | Adjustment due to liability discharge | | | | | | | | |
| 2B | Adjustment due to decapitalization | 41.31 | | | | | | | |
| 3 | Net Normative loan – Opening | - | - | - | - | - | - | - | - |
| 4 | Add: Increase due to addition during the year / period | 631.15 | 2,689.02 | 510.50 | 420.70 | - | - | - | - |
| 5 | Less: Decrease due to de-capitalisation during the year / period | 41.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | Less: Decrease due to reversal during the year / period | | | | | | | | |
| 7 | Add: Increase due to discharges during the year / period | 5.77 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | Less: Repayment of Loan | 636.91 | 3,824.69 | 4,210.59 | 4,348.84 | 4,430.05 | 4,430.05 | 4,430.05 | 4,430.05 |
| 9 | Net Normative loan - Closing | - | - | - | - | - | - | - | - |
| 10 | Average Normative loan | - | - | - | - | - | - | - | - |
| 11 | Weighted average rate of interest | 8.0138 | 8.2575 | 8.2575 | 8.2575 | 8.2575 | 8.2575 | 8.2575 | 8.2575 |
| 12 | Interest on Loan | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

S. Anand
(Petitioner)

Calculation of Interest on Working Capital

| Name of the Company : | | NTPC Limited | | | | | | | |
|-----------------------------|------------------------------------|---|----------------|----------------|----------------|----------------|----------------|--|--|
| Name of the Power Station : | | Feroze Gandhi Unchahar Thermal Power Station Stage-II | | | | | | | |
| | | (Amount in Rs Lakh) | | | | | | | |
| S. No. | Particulars | Existing 2018-19 | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| 1 | Cost of Coal | 13,501.08 | 11621.03 | 11621.03 | 11621.03 | 11621.03 | 11621.03 | | |
| 2 | Cost of Main Secondary Fuel Oil | 147.04 | 146.14 | 145.74 | 145.74 | 145.74 | 146.14 | | |
| 3 | Fuel Cost | | | | | | | | |
| 4 | Liquid Fuel Stock | | | | | | | | |
| 5 | O & M Expenses | 1,449.86 | 1249.76 | 1298.85 | 1349.83 | 1403.84 | 1459.92 | | |
| 6 | Maintenance Spares | 3,479.67 | 2999.41 | 3117.23 | 3239.59 | 3369.22 | 3503.81 | | |
| 7 | Receivables | 19,468.64 | 14253.84 | 14404.44 | 14505.56 | 14601.73 | 14677.40 | | |
| 8 | Total Working Capital | 38046.28 | 30270.19 | 30587.29 | 30861.76 | 31141.56 | 31408.30 | | |
| 9 | Rate of Interest | 13.5000 | 12.0500 | 12.0500 | 12.0500 | 12.0500 | 12.0500 | | |
| 10 | Interest on Working Capital | 5136.25 | 3647.56 | 3685.77 | 3718.84 | 3752.56 | 3784.70 | | |


Petitioner

PART-I
FORM-S

Statement of Liability Flow

Name of the Petitioner

NTPC Limited

Name of the Generating Station :

Feroze Gandhi Unchahar Thermal Power Station Stage-II

| Sl | Name of The party | 2 | 3 | Year of actual capitalisation | Liabilities as on 31.03.2019 | Liability addition during FY 2019-20 | Liability Discharged during FY 2019-20 | | Undischarge liabilities as on 31.03.2020 | Remarks |
|--|---------------------------|---|---|-------------------------------|------------------------------|--------------------------------------|--|-------|--|------------|
| | | | | | | | Liability Discharged during FY 2019-20 by Reversal | Total | | |
| a) For assets eligible for normal RoE | | | | | | | | | | |
| 1 | Minimax GmbH & Co KG | | | 2014-15 | 24,58,715 | 6 | 7 | 8 | 10=5+6-9 | allowed |
| 2 | THERMAX LTD | | | 2014-15 | 2,20,000 | | | 9=7+8 | | disallowed |
| 3 | BHEL | | | 2014-15 | 12,35,000 | | | | | disallowed |
| 4 | SHEBU CONSTRUCTION CO | | | 2017-18 | 3,975 | | | | | disallowed |
| 5 | MANISH AUTO & ELECTRICALS | | | 2017-18 | 1,54,720 | | | | | disallowed |
| 6 | various parties | | | 2018-19 | 33,79,870 | | | | | disallowed |
| | | | | | 74,52,280 | | | | | |
| b) For assets eligible for RoE at weightage average rate of interest on loan | | | | | | | | | | |
| 1 | | | | | Sub Total (a) | | | | | |
| | | | | | Sub Total (b) | | | | | |
| | | | | | Grand Total (a) + (b) | | | | | |
| | | | | | 74,52,280 | | | | | |

To be filed at the time of truing-up

Petitioner

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**PART 1
FORM-I**

Summary of issue involved in the petition

| | | |
|------------------------------------|---------------------------------------|--|
| Name of the Company : | | NTPC Limited |
| Name of the Power Station : | | Feroze Gandhi Unchahar Thermal Power Station Stage-II |
| 1 | Petitioner: | NTPC Limited |
| 2 | Subject Prayer: | Determination of Tariff for 2019-24 period |
| 3 | | <p>i) Approve tariff of Feroze Gandhi Unchahar Thermal Power Station Stage-II for the tariff period 01.04.2019 to 31.03.2024.</p> <p>ii) Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries.</p> <p>iii) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries quarterly on net basis.</p> |
| 4 | Respondents | |
| | Name of Respondents | |
| | a. Uttar Pradesh Power Corp. Ltd. | g. Punjab State Power Corporation Ltd. |
| | b. Rajasthan Urja Vikas Nigam Limited | h. Himachal Pradesh State Electricity Board Ltd |
| | c. Tata Power Delhi Distribution Ltd | i. Power Development Department (PDD-J&K) |
| | d. BSES Rajdhani Power Ltd. (BRPL) | j. Electricity Department (Chandigarh) |
| | e. BSES Yamuna Power Ltd. | k. Uttarakhand Power Corporation Ltd. |
| | f. Haryana Power Purchase Centre | |
| 5 | Project Scope | |
| | Capita Cost as on 01.04.2019 | 131551.31 |
| | COD | 01-01-2001 |
| | Claim | |
| | AFC (2019-20) (Rs Lakhs) | 29987.96 |
| | Capital Cost as on 01.04.2019 | 131551.31 |
| | Initial spare | N/A |
| | NAPAF (Gen) | 85% |
| | Any Specific | |


Petitioner

GOVERNMENT OF KARNATAKA

DEPARTMENT OF FACTORIES, BOILERS, INDUSTRIAL SAFETY & HEALTH

CSMC/TFC/CR-13/2013-14

Phone No : 080-26531200
Fax No : 080-26531202

Directorate of Factories, Boilers, Industrial Safety & Health, "Karmika Bhavana" 2nd floor, Near Bengaluru Dairy, I.T.I.compound, Bannerghatta road, Bengaluru-29, Dated 23.09.2013.

To,
General Manager,
M/s NTPC Limited,
Kudgi Super Thermal Power Project,
Plot No. 9, Mallikarjun Nagar,
Managuli Road, Bijapur-586 109

[Handwritten signature]
01/10/13

[Handwritten notes and signatures]
GC (2013) 100
AUM (PKS)
Date 17/10/2013

Sir,

Subject: Site Clearance for setting up of super thermal power project-reg

- Reference: 1. Your letter dated 03.05.2013
2. Proceedings of Task force committee meeting held on 12.09.2013
3. Your reply mail dated 19.09.2013.

* * *

We are pleased to inform you that the Task Force Committee in its meeting held on 12.09.2013 has reviewed the presentation, documents, details of the safety systems adopted, etc and has concurred in principle to issue the Site Clearance for the initial location for the establishment of super thermal power project for generating electrical power of 3 X 800 MW at Near Kudugji village, Basavana bagewadi Taluk, Bijapur District.

The site clearance is issued subject to the following conditions;

1. The replacing of highly hazardous chlorine with available less hazardous alternative chemicals like chlorine dioxide, sodium hypo chlorite shall be considered.
2. The mobile hydrogen cylinder bank with manifold system shall be adopted in place of loose Hydrogen Cylinders.
3. The safety check shall be prepared in storing, handling and usage of Hydrazine and its holding capacity shall be limited to a minimum required quantity
4. The exclusive safety, health and environment (SHE) department shall be formed under the direct control & supervision of the occupier. This department shall be supported by the senior level qualified and competent executives with adequate field staff.
5. The effective online monitoring system shall be adopted to ensure the safe and healthy work environment with special trust to fugitive emission, it radiation, noise level etc.
6. No building of structure shall be constructed with obtaining a prior approval of plans by Director, Department of Factories, Boilers, Industrial Safety and Health.
7. The pre and periodical medical examination shall be carried out to all the category of employees including contract and casual. The medical surveillance shall be carried out by creating a base line health data and shall have the provision for up-dating the same and continuous basis.

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8. The mitigation measures as submitted by the presentation and as suggested by committee shall be incorporated in the on-site emergency plan. The same shall be submitted for scrutiny and approval.
9. The provisions of rule 50 to 251 of Building and Other Construction Workers (Regulation of Employment and condition of service) (Karnataka) Rules 2006 shall be complied to ensure occupational safety and health of the construction workers involved project. The compliance shall be furnished regularly to jurisdiction officers of our department and to the Director of Factories, Boilers, Industrial Safety and Health.

Suggestions:

1. The industry shall adopt the rain - harvesting system to harvest atleast 80% of the rain water.
2. The industry shall adopt solar energy system at least catering to street lighting and in other suitable areas like water heating in the canteen, etc.

All the above conditions and suggestions shall be complied and a report shall be submitted. The department reserves all the rights to modify or withdraw clearance issued at any point of time.

Your's Faithfully,


Chairman
Task Force Committee
and Director of Factories, Boilers,
Industrial Safety and Health, Bangalore.

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True copy

GOVERNMENT OF KARNATAKA
DEPARTMENT OF FACTORIES, BOILDERS INDUSTRIAL SAFETY & HEALTH

CSMS/TFC/CR—13/2013-14

Directorate of Factories, Boilers, Industrial Safety &
Health, Karmika Bhavana 2nd floor, Near Bengaluru
Dairy, ITI Compound Bannerhatta Road
Bengaluru -29 Date 23.09.2013

Phone No. 080-26531200

Fax No. 080-26531202

To
General Manager
M/s NTPC Limited
Kudgi Super Thermal Power Project

Sir,

Subject: Site Clearance setting up of super thermal power project-reg

- Reference: 1. Your letter dtd. 03.05.2013
2. Proceedings of Task Force Committee Meeting held on 12.09.2013
3. Your reply mail dated 19.09.2013

We are pleased to inform that the Task Force Committee in its meeting held on 12.09.2013 has reviewed the presentation documents details of the safety systems adopted etc and has concurred in principle to issue the Site Clearance for the initial location for the establishment of super thermal power project for generating electricity of 3x500 MW at New Kudgi village, Basavana Bagewadi, Bijapur District

The Site clearance is issued subject to the following conditions:

1. The replacing of highly hazardous chlorine with available less hazardous alternative chemicals like chlorine dioxide, sodium hypochlorite shall be considered.
2. The mobile hydrogen cylinder bank with manifold system shall be adopted in place of loose hydrogen cylinders.
3. The Safety check shall be prepared in storing, handling and usage of hydrazine and its handling capacity shall be limited to a minimum required quantity.
4. The exclusive safety health and environment (SHE) department shall be formed under the direct control and supervision of the occupy. This department shall be supported by he senior level qualified and competent executive with adequate field staff.

5. The effective online monitoring system shall be adopted to ensure the safe and healthy work environment with special trust to fugitive emission, its radiation noise level etc. No building of structure shall be constructed with obtaining a prior approval of plans by Director, Department of Factories, Boilers, Industrial Safety & Health.
6. No building of structure shall be constructed with obtaining a prior approval of plans by Director, Deptt of factories, boilers, industrial safety and health.
7. The pre and periodical medical examination shall be carried out to all the category of employees including contract and casual. The medical surveillance shall be carried out by creating a base line health data and shall have the provision for updating the same and continuous basis.
8. The mitigation measures as submitted in the presentation and as suggested by committee shall be incorporated in the on site emergency plan. The same shall be submitted for scrutiny and approval.
9. The provision of rule no. 251 of Building and Other Construction Workers (Regulation for employment and condition of service) (Karnataka) Rules 2006 shall be complied to ensure occupational safety and health of construction workers involved in the project. The compliance shall be regularly to jurisdiction officer of our department and to the director of factories, boilers, industrial safety and health.

SUGGESTIONS:

1. The industry shall adopt the rain-harvesting system to harvest at least 80% of the rain water.
2. The industry shall adopt solar energy system at least catering to street lighting to street light and in other suitable areas like water heating in the canteen, etc.

Yours faithfully

Chairman
Task Force Committee
And Director of Factories Boilers,
Industrial safety and Health, Bangalore



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Indira Paryavaran Bhawan,
Jor Bagh Road,
New Delhi-110003
Dated 26th August, 2015

Office Memorandum

Subject: Protocol for sampling, analysis of coal and reporting of compliance in respect of implementation of the Gazette notification on use & supply of raw or blended or beneficiated coal with ash content not exceeding 34% ash content in coal based thermal power plants

1.0 Purpose:

This protocol presents the protocol for sampling, analysis of coal and reporting of compliance on quarterly basis with respect to ash content in coal to be supplied and used by the thermal power plants covered under the provisions of the Gazette notification GSR 02 (E) dated January 02, 2014 on supply and use of raw or blended or beneficiated coal in thermal power plants. The objective is to ensure compliance of the quality of coal with respect to ash content, supplied and used by thermal power plants in keeping with applicable extant Notification of the Ministry in this regard. The data generated shall help in evaluation of compliance level of the notification.

2.0 The Notification:

In exercise of the powers conferred by Section 3, Section 6 and Section 25 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 5 of the Environment (Protection) Rules, 1986, the Ministry of Environment, Forest & Climate Change, Government of India made the following rules vide notification No GSR 2 (E) dated January 02, 2014 under the Environment (Protection) Rules, 1986, namely:—

With effect from the date specified hereunder, the following coal based thermal power plants shall be supplied with, and shall use, raw or blended or beneficiated coal with ash content not exceeding thirty-four per cent, on quarterly average basis, namely:—

- (a) a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located beyond 1000 kilometres from the pit-head or, in an urban area or an ecologically sensitive area or a critically polluted industrial area, irrespective of its distance from the pit-head, except a pit-head power plant, with immediate effect;
- (b) a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located between 750 – 1000 kilometres from the pit-head, with effect from the 1st day of January, 2015;

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(c) a stand-alone thermal power plant (of any capacity), or a captive thermal power plant of installed capacity of 100 MW or above, located between 500-749 kilometres from the pit-head, with effect from the 5th day of June, 2016:

Provided that in respect of a thermal power plant using Circulating Fluidised Bed Combustion or Atmosphere Fluidised Bed Combustion or Pressurized Fluidised Bed Combustion or Integrated Gasification Combined Cycle technologies or any other clean technologies as may be notified by the Central Government in the Official Gazette, the provisions of clauses (a), (b) and (c) shall not be applicable.

3.0 Statutory Compliance Requirement and Reporting:

As per the notification, power plants located 750 kilometres from pit head (500 kilometres from June 05, 2016) shall be supplied with, and shall use, raw or blended or beneficiated coal with ash content not exceeding thirty-four per cent, on quarterly average basis. Hence, coal mine or company, as applicable, supplying coal to thermal power plants as well as thermal power plants covered under provisions of the notification shall require to submit compliance report for each quarter with respect to average ash content in coal used by them to respective State Pollution Control Boards (SPCBs), Regional office of the Ministry of Environment, Forest & Climate Change (MoEF&CC) and Central Pollution Control Board (CPCB).

4.0 Amendment in Consent under Air (Prevention and Control of Pollution) Act, 1981 & conditions in Environmental Clearance issued under Environment (Protection) Act, 1986:

In order to implement the provisions made in the notification, the State Pollution Control Board concerned and Ministry of Environment, Forest & Climate Change shall include a condition with respect to specifying ash content in raw or blended or beneficiated coal to be supplied by the coal mine or company, as applicable, and used by thermal power plants, in the existing consent orders issued under Air (Prevention and control of pollution) Act, 1981 and in Environmental Clearance issued under Environment (Protection) Act, 1986 to thermal power plant and coal mine or company, as applicable, under the purview of the notification on supply and use of raw or blended or beneficiated coal and shall invariably prescribe to all new thermal power plant and coal mine or company, as applicable, which may otherwise fall under the purview of the said notification.

5.0 Ash content monitoring (sampling and analysis) technique of coal:

Coal is highly heterogeneous in nature consisting of particles of various shapes and sizes each having different physical characteristics, chemical properties and residual ash content. Sampling is further complicated by the sampling equipment available, the quantity to be represented by the sample mass, and the degree of precision required. In addition, the coal to be sampled may be a blend of different coal types and how the coal is blended has a profound effect on the way a representative sample is obtained. National and international standards have been developed to provide guidelines for coal sampling procedures under different conditions, sample preparation and bias test procedures for the purpose of obtaining unbiased samples.

Real Time monitoring using auto mechanical sampling (online) from moving streams shall be used for sampling fuels. This shall be effective from a date not later

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than 01 September, 2016 in order to enable the Coal Companies and thermal power plants to install and operationalise the real time monitoring system. Manual sampling and analysis may be done so as to verify the online monitoring results.

In case of manual monitoring, coal samples may be taken from a moving conveyor belt since sampling from stationary coal such as a coal storage pile or railcars may be problematic. The analysis of samples shall be carried out by third party appointed by the respective thermal power plant/coal mine or company, as applicable, as per the guidelines of Coal Controller.

6.0 Calibration of auto-mechanical sampler:

It should be ensured that the online ash monitoring instrument is properly calibrated. Measurements should be accepted as valid only if the calibration level shows variation in ash content is 1.0-2%. The online monitor and calibrator will hold a current calibration certificate traceable to national standards.

7.0 Location of Real-Time monitor:

The best location of real-time monitor for sampling from a moving stream is at the coal discharge point of a conveyor belt to bunker where the complete stream can be intersected at regular intervals.

8.0 Sampling frequency:

The continuous sampling of ash content in coal shall be carried out using real-time coal quality monitoring devices. In case of manual monitoring, minimum one sample from moving conveyor belt leading to bunker at each filling shall be collected. The data generated shall be computed and average for each quarter shall be calculated for reporting to concerned agencies as specified in the para 3.0 of this Office Memorandum.

9.0 Monitoring:

The following criteria will be observed when undertaking the sampling and analysis of coal samples with respect to ash content:

9.1 In case of manual monitoring:

- i. Collection of coal samples shall strictly be collected as per the guidelines of Coal Controller/ Bureau of Indian Standards (BIS).
- ii. Coal samples shall be collected by the third party appointed by the respective thermal power plant, coal mine or company, as applicable. However, in case of legal sampling a representative of concerned SPCB, thermal power plant, coal mine or company, as applicable shall also be present during sampling.
- iii. Preparation of samples and analysis shall be carried out by using standard methodology as given by Coal Controller/ Bureau of Indian Standards (BIS) at the NABL accredited laboratory of either coal company/power plant or third party engaged.

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Signature

9.2 In case of Real Time monitoring:

Data generated through real time online monitors shall be computed on daily basis an average of 3 months shall be calculated for reporting of compliance.

10.0 Monitoring records:

All power plants and coal mine or company, as applicable shall maintain records of the data generated and reported to SPCBs concerned, CPCB & Regional Office of MoEF&CC in compliance to the provisions of the notification for every quarter.

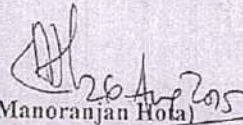
11.0 Compliance Reporting:

All thermal power plants covered under provisions of the notification shall submit compliance Report for each quarter with respect to average ash content in coal used by them to respective SPCBs. Regional office of the MoEF&CC and CPCB on or before 10th day of next month of each quarter ending on 31st day of March, 30th day of June, 30th day of September and 31st day of December every year. Similarly, all coal mine or company, as applicable, supplying coal to power plants shall also submit the same to agencies as mentioned in para 3 of this Office Memorandum.

In order to improve compliance reporting, the thermal power plants and connected coal mine or company, as applicable, should explore possibility of reporting of compliance on continuous basis (online) by making suitable arrangements with respect to ash content in coal being supplied and used by thermal power plants.

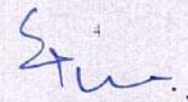
12.0 Verification of data & Compliance:

The SPCB concerned shall verify the sampling and analysis process and calibration of real time monitoring devices at least once a year at each thermal power plant and coal mine. Besides, random sampling and analysis of coal used by the power plant and supplied by coal mine shall also be conducted once in a year to ensure compliance and quality of data reporting by the thermal power plants and coal mines.


(Dr. Manoranjan Hota)
Director

To

- 1 PS to MEF&CC
- 2 PPS to Secretary (EF&CC)
- 3 Secretary, Ministry of Coal, Shastri Bhawan, New Delhi
- 4 Secretary, Ministry of Power, Shram Shakti Bhawan New Delhi
- 5 Secretary, Ministry of Steel, Udyog Bhawan, New Delhi
- 6 PPS to Addl. Secretary (HKP)/AS (SK)/AS (MMK);
- 7 JS (MKS), JS (BS)
- 8 Chairman, CPCB/Member Secretary, CPCB
- 9 Member Secretary, All the SPCBs/PCCs
- ✓ 10 IT Division, MoEF&CC to upload into the website



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**NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION**

New Delhi, the 18th November, 2009

No.B-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No. 14 of 1981), and in super session of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

| S. No. | Pollutant | Time Weighted average | Concentration in Ambient Air | | Methods of Measurement |
|--------|--|-----------------------|---|---|--|
| | | | Industrial, Residential, Rural and Other Area | Ecologically sensitive area (notified by Central Govt.) | |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 1 | Sulphur Dioxide (SO ₂), µg/m ³ | Annual* | 50 | 20 | <ul style="list-style-type: none"> • Improved West and Geake • Ultraviolet fluorescence |
| | | 24 hours** | 80 | 80 | |
| 2 | Nitrogen Dioxide (NO ₂), µg/m ³ | Annual* | 40 | 30 | <ul style="list-style-type: none"> • Modified Jacob & Hochheiser (Na-Arsenite) • Chemiluminescence |
| | | 24 hours** | 80 | 80 | |
| 3 | Particulate Matter (size less than 10 µm) or PM ₁₀ µg/m ³ | Annual* | 60 | 60 | <ul style="list-style-type: none"> • Gravimetric • TOEM • Beta attenuation |
| | | 24 hours** | 100 | 100 | |
| 4 | Particulate Matter (size less than 2.5 microns) or PM _{2.5} µg/m ³ | Annual* | 40 | 40 | <ul style="list-style-type: none"> • Gravimetric • TOEM • Beta attenuation |
| | | 24 hours** | 60 | 60 | |
| 5 | Ozone (O ₃) µg/m ³ | 8 hours ** | 100 | 100 | <ul style="list-style-type: none"> • UV photometric • Chemiluminescence • Chemical method |
| | | 1 hour ** | 180 | 180 | |
| 6 | Lead (Pb) µg/m ³ | Annual* | 0.5 | 0.5 | <ul style="list-style-type: none"> • ASS / ICP method after sampling on EPM 2000 or equivalent filter paper • ED - XRF using Teflon filter |
| | | 24 hours** | 1.0 | 1.0 | |

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| (1) | (2) | (3) | (4) | (5) | (6) |
|-----|---|------------|-----|-----|---|
| 7 | Carbon Monoxide (CO) mg/m ³ | 8 hours** | 2 | 2 | Non Dispersive Infra RED (NDIR) Spectroscopy |
| | | 1 hour** | 4 | 4 | |
| 8 | Ammonia (NH ₃) µg/m ³ | Annual* | 100 | 100 | <ul style="list-style-type: none"> • Chemiluminescence • Indophenol blue method |
| | | 24 hours** | 400 | 400 | |
| 9 | Benzene (C ₆ H ₆) µg/m ³ | Annual* | 5 | 5 | <ul style="list-style-type: none"> • Gas chromatography based continuous analyser • Adsorption and desorption followed by GC analysis |
| 10 | Benzo (a) Pyrene (BaP) – particulate phase only ng/m ³ | Annual* | 1 | 1 | Solvent extraction followed by HPLC / GC analysis |
| 11 | Arsenic (As) ng/m ³ | Annual* | 6 | 6 | AAS / ICP method after sampling on EPM 2000 or equivalent filter paper |
| 12 | Nickel (Ni) ng/m ³ | Annual* | 20 | 20 | AAS / ICP method after sampling on EPM 2000 or equivalent filter paper |

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

Signature