BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO……

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

IN THE MATTER OF : Determination of Supplementary Tariff for ECS(De NOx) system in Talcher STPS-II

INDEX

Summary of Issues: Talcher Super Thermal Power Station-II (4x 500 MW)

(In compliance with CERC notice dated 07.06.2024)

The major highlights of the Talcher STPS-II (2000 MW) Truing up petition are as follows:-

The present petition is being filed under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9(2) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for revision of tariff of Talcher Super Thermal Power Station, Stage-II (2000 MW) for the period from 01.04.2024 to 31.03.2029 after the truing up exercise based on actual expenditures as on 31.03.2024.

Talcher STPS-II is located at Angul, Odisha and comprises of four units of 500 MW each with their respective COD's as 01.08.2003 & 01.03.2004, 01.11.2004 and 01.08.2005. The power generated from TSTPS-II is being supplied to various discoms as per MoP allocation and respective PPAs. The respondents include:-

1) Andhra Pradesh Eastern Power Distribution Company Limited
2) Andhra Pradesh Southern Power Distribution Company Limited
3) Telangana State Northern Power Distribution Company Limited
4) Telangana State Southern Power Distribution Company Limited
5) Tamil Nadu Generation & Distribution Corporation Limited
6) Bangalore Electricity Supply Company Limited
7) Mangalore Electricity Supply Company Limited
8) Chamundeshwari Electricity Supply Corporation Limited

9) Gulbarga Electricity Supply Company Limited

10) Hubli Electricity Supply Company Limited

11) Kerala State Electricity Board Limited

12) Electricity Department, Puducherry

13) Grid Corporation of Orissa Limited

14) Andhra Pradesh Central Power Distribution Corporation

The tariff of Talcher STPS-II for the tariff period 2024-29 based on projected expenditures as on 31.03.2024 is annexed with the petition as per provisions of Regulation 9(2) of CERC Tariff Regulations 2024.

The projected Additional Capital Expenditure on cash basis for the FY 2024-25, 2025-26, 2026-27, 2027-28 and 2028-29 are Rs 57.84 cr, Rs 162.00 cr, Rs 123.61 cr, Rs 93.08 cr and Rs 0.00 cr respectively amounting to total of Rs 436.53 crores during the 2024-29 period. The same has been depicted year wise in Form 9A of the Appendix-I along with applicable regulations and justification for the claims. It is humbly requested to approve the actual Additional Capital expenditure during the period of 2024-29.

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

It is humbly submitted to allow reimbursement of Ash Transportation Charges directly from the beneficiaries on monthly basis, subject to true up. The ash transportation expenses claim has been depicted in Form 3A of Appendix-I.

Hon'ble Commission may please allow the claims of water charges and security expenses for the instant station as per the claimed projections by the Petitioner in Form 3A of Appendix-I. The break up of water charges is depicted in Form 19 of the petition.

- It is mentionable that the bipartite water agreement between NTPC Talcher STPS and Govt of Odisha directs NTPC to pay water charges on basis of water allocated or drawn whichever is higher. It is submitted that water is subject matter under the control of State Government and NTPC has no control over it. It is also an essential input for generation of electricity for a thermal power plant. NTPC is bound to pay the water charges as per the agreement with the State Government. The detailed calculation for the water charges claim as per the agreement is submitted in Form 3A. Hon'ble Commission may please allow the claim of water charges paid on allocation basis. Copy of water agreement between NTPC Talcher STPS and Govt of Odisha is enclosed along with the petition.
- It is further mentioned that the Talcher STPS-II is a central government owned thermal power station which is of national importance. Safety and security of these nationally important infrastructure projects against any threat perception is a prime concern. The main security of these central government owned thermal power station is provided by the Central Industrial Security Force (CISF). CISF is a statutory body set up under an Act of the Parliament of India and a central armed police force in India under the Ministry of Home Affairs (MHA) whose primary mission is to provide security to large institutions like TSPTS-I. Deployment of the CISF is done as per the security threat perception, survey and as per the guidelines of MHA. In addition to the CISF, certain

security is provided by other local and national agencies for critically less sensitive locations as per the plant specific needs. In view of this Hon'ble Commission may please allow the projected claims of security expenses as submitted in Form 3A. The actual claims will be submitted at the time of truing up.

- It is humbly submitted that the capital spares on store issuance basis for the instant station will be claimed by the Petitioner at the time of truing up in Form 3A of Appendix-I.
- It is humbly submitted that the statutory charges for the period 2024-29 as levied by the Odisha state government will be submitted in Form-20 of Appendix-I at the time of truing up of petition. Hon'ble Commission may please allow the same under Regulation 77 of Tariff regulations 2024.

The Talcher STPS-II has induced draft cooling tower and accordingly, the normative APC has been computed as 5.75%. Hon'ble Commission may please allow the same as per Regulation 70(E) of the Tariff Regulation 2024.

Further, Appendix-IA Tariff forms for ECS-De NOx (Combustion Modification forms) for 2024-29 period is attached. The combustion modification system in Unit #5 and Unit #6 of Talcher STPS-II were commissioned in 2019-24 period. Hon'ble commission may please allow the supplementary tariff of ECS(De NOx) for controlling NOx emissions.

It is submitted that inline with the directions of State Pollution Control Board, Odisha, Talcher Super Thermal Power Station is filling ash in Jagannath mines Quarry-08 (mine void filling) which is about 25 KM from Talcher Super Thermal Power Station. For water evacuation, NTPC has set up dewatering pump house at quarry-08. Power supply to quarry-08 pump house for dewatering purpose is presently arranged from

TPCODL (TP Centra Odisha Distribution Limited), a joint venture of Odisha Government and M/s Tata Power.

Hence with regards to the above, the petitioner has projected a sum of Rs 7.20 crores per year, amounting to total of Rs 36.00 crores in the 2024-29 period and is claimed in Form 3A of the instant petition. The actual expenses will be submitted at the time of truing up. Hon'ble commission may please allow the same.

It is further submitted that NTPC is required to pay the ash filling charges in Quarry No VIII of Jagannath OCP to M/s MCL as per the MOU signed between NTPC and MCL. Hence the Ash filling charges of Rs 7.50 crores is projected for the 2024-29 period. The MOU dated 18.09.2020 between M/s NTPC and M/s MCL and the supporting documents is attached as Annexure- A/8.

Further it is mentioned that vide demand invoice dated 05.09.2024, M/s MCL has also raised demand for the 2020-2024 period for Rs 3.52 crores. The demand note is attached as Annexure- A/9 and the amount is likely to be disbursed in FY 2024-25. Since the amount will be paid in 2024-29 period, NTPC seeks liberty to claim Rs 3.52 crores amount at the time of truing up of 2024-29.

In the light of above submissions and as per the Petition being filed by the Petitioner for revision of tariff of Talcher Super Thermal Power Station, Stage-II (2000 MW), The Hon'ble Commission may please approve revised tariff for the tariff period 2024-29 as per provision of Regulation 9(2) of Tariff Regulations 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-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of **Talcher STPS-II for the period from 01.04.2024 to 31.03.2029**.

AND IN THE MATTER OF : Determination of Supplementary Tariff for ECS (De NOx) system in Talcher STPS-II

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

Respondents

1) Andhra Pradesh Eastern Power Distribution Company Limited,
Corporate Office,
P&T Colony,
Seethammadhara,

Visakhapatnam – 530 013 - (AP)

2) Andhra Pradesh Southern Power Distribution Company Limited,
   Corporate Office,
   Back Side Srinivasa Kalyana Mandapam Tiruchhanur Road,
   Kesavayana Gunta,
   Tirupathi- 517 503 (AP)

3) Telangana State Northern Power Distribution Company Limited,
   H.No. 2-5-31/2,
   Vidyut Bhavan,
   Nakkalagutta,
   Hanamkonda Warangal – 506 001 (AP)

4) Telangana State Southern Power Distribution Company Limited,
   Mint Compound,
   Corporate Office
   Hyderabad (AP) – 500 063

5) Tamil Nadu Generation & Distribution Corporation Limited,
   144,
   Anna Salai,
   Chennai – 600002

6) Bangalore Electricity Supply Company Limited,
   Krishna Rajendra Circle,
   Bangalore - 560 009

7) Mangalore Electricity Supply Company Limited, MESCOM Bhavana,
Corporate Office,
Bejai, Kavoor Cross Road,
Mangaluru-575004,
Karnataka

8) Chamundeshwari Electricity Supply Corporation Limited,
Corporate Office,
No. 29,
Vijayanagar,
2nd Stage,
Hinkal,
Mysore-570017

9) Gulbarga Electricity Supply Company Limited, Main Road,
Gulbarga,
Karnataka,
Gulbarga-585 102

10) Hubli Electricity Supply Company Limited,
Corporate office, P. B. Road,
Navanagar, Hubli – 580 025

11) Kerala State Electricity Board Limited,
Vaidyuthi Bhavanam,
Pattom Thiruvananthapuram 695 004

12) Electricity Department,
Puducherry 137,
NSC Bose Salai Puducherry- 605001

13) Grid Corporation of Orissa Limited,
Vidyut Bhavan,

Janpath,
Bhubaneswar- 751022

14) AP Central Power Distribution Corporation
Corporate Office,
Beside Polytechnic College ITI Road,
Vijayawada - 520 008

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. Talcher Super Thermal Power Station -II (hereinafter referred to as TSTPS-II is one such station located in the State of Odisha. The power generated from TSTPS-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, 2024 (hereinafter

'Tariff Regulations 2024') which came into force from 01.04.2024, specifying the terms & conditions and methodology of tariff determination for the period 01.04.2024 to 31.03.2029.

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

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

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

6) The tariff of the TSTPS-II for the tariff period 1.4.2019 to 31.3.2024 was determined by the Hon'ble Commission vide its order dated 27.04.2023 in Petition No.441/GT/2020 in accordance with the CERC (Terms & Conditions of Tariff) Regulations 2019. The petitioner vide affidavit dated 23.11.2024 had filed a separate true up petition for the period 01.04.2019 to 31.03.2024 for revision of tariff in line with the applicable provisions of Tariff Regulations 2019.

7) It is submitted that Hon'ble Commission vide order dated 27.04.2023 in Petition no 441/GT/2023 has allowed a capital cost of Rs 5769.01 Cr as on 31.03.2024 based on the admitted projected capital expenditure for the 2019-24 period. However, the actual closing capital cost as on 31.03.2024 has been worked out in the foresaid true-up petition as Rs. 6065.33 Crs based on the actual expenditure after truing up exercise for the period 2019-24. Accordingly, the Petitioner has adjusted an amount of Rs.296.32 Cr from the admitted capital cost as on 31.03.2024 and accordingly the opening capital cost as on 01.04.2024 has been considered as Rs 6065.33 Cr. in the instant petition. The

Hon'ble Commission may be pleased to accordingly adopt this adjustment in the admitted capital cost as on 31.3.2024 and determine the tariff in the present petition for the period 2024-29.

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

9) The Petitioner further respectfully submits that as per Regulation 36(1)(6) of the Tariff Regulations 2024, the water charges, security expenses, ash transportation expenses and capital spares consumed for thermal generating stations are to be allowed separately. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2023-24 have been furnished below. Water charges claimed is escalated @10% year on year on the original rate i.e. Rs 5.60 per cu.m. based on the letter dated 26.03.2019 from Orissa irrigation department. The letter is marked and annexed as Annexure A/7. Hon'ble commission may allow the water charges in tariff for the 2024-29 period. In accordance with provision of the Regulations, the petitioner shall be furnishing the details of actual for the relevant year at the time of truing up and the same shall be subject to retrospective adjustment.

Description	**Remarks**
Type of Plant	Coal based station
Type of cooling water system	IDCT, Closed Ckt Cooling
Consumption of Water	105 Cusec
Rate of Water charges	Rs 9.52 per Cum in FY 2023-24
Total Water Charges	Rs 350.25 Cr projected for 2024-29 period

10) Similarly, the Petitioner is claiming the security & ash transportation expenses based on the estimated expenses for the period 2024-29, the same shall be subject to retrospective adjustment based on actuals at the time of truing up. In

respect of capital spares consumption, it is submitted that the same shall be claimed at the time of true-up in terms of the proviso to the Regulation 36(1)(6) based on actual consumption of spares during the period 2024-29.

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

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

13) The Petitioner further respectfully submits that the wage/ salary revision of the employees of the Petitioner will be due with effect from 1.1.2027. As per Regulation 36(1)(8) of the Tariff Regulations 2024, the impact on account of implementation of wage/ pay revision shall be allowed at the time of truing up of tariff. The Petitioner therefore craves liberty to approach the Hon'ble Commission for allowing the impact on account of implementation of wage/ pay revision of the employees of the Petitioner with effect from 1.1.2027, based on the actual payments whenever paid by it.

14) The present petition is filed on the basis of norms specified in the Tariff Regulations 2024. 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 MOEF vide notification dated 07.12.2015. 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 be also affected due to shutdown of the units for installation of ECS. The petitioner would be filing the details of the same in terms of the Regulation 29 of CERC (Terms& Conditions of Tariff) Regulations 2024.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25) The filing fee for the instant Petition has been paid for FY 2024-25 vide Payment Reference No **UTR No. 37c568eba62158b7b321** dated 24.04.2024 as per Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012, as amended from time to time. For subsequent years, it shall be paid as per the provisions of CERC (Payment of Fee) Regulations 2012. Further, the proof of payment of fees is being submitted in Form I specified under Regulation

12 of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012, as amended from time to time. Hon'ble Commission may be pleased to take the above into consideration and allow the recovery of filing fee for the instant station as per Regulation-94 of CERC Tariff Regulations 2024.

26) It is submitted that the petitioner is filing this tariff petition subject to the outcome of its various appeals/ petitions pending before different courts. Besides, the petitions filed by NTPC for determination of capital base as on 31.3.2024 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 Talcher STPS-II for the tariff period 01.04.2024 to 31.03.2029.

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

iii) Approve supplementary tariff of Emission Control System for controlling NOx emissions.

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

v) Allow the recovery of pay/wage revision as additional O&M over and above the normative O&M.

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

Petitioner

Place: Noida

Date: 23.11.2024

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-III of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024 for approval of tariff of Talcher **Super Thermal Power Station STPS-II (4 x 500 MW) for the period from 01.04.2024 to 31.03.2029**.

AND

IN THE MATTER OF

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

2) Respondents: AP Eastern Power Distribution Company Ltd & Ors

AFFIDAVIT

I, Umasankar Mohanty, son of B.K. Mohanty aged about 58 years, resident of D-109, Shaurya NTPC Township, Noida do solemnly affirm and state as follows:-

6) That the deponent is the Additional General Manager of Petitioner/Applicant/Respondent, and is well conversant with the facts and the circumstances of the case and therefore competent to swear this affidavit.

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

8) That the contents as mentioned in the Petition are true and correct based on the my personal knowledge, belief and records maintained in the office.

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

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

NOTARY PUBLIC BALKRISHNA DIXIT G.B. NAGAR (U.P.) NOTARIAL Regd. No. 7167 GOVT. OF INDIA

(Deponent)
उमाशंकर मोहंती / Umasankar Mohanty
अपर महाप्रबंधक (वाणिज्यिक)
Addl. General Manager (Commercial)
एनटीपीसी लिमिटेड / NTPC Limited

VERIFICATION

Verified at Noida on 23rd day of November, 2024, that the contents of my above noted affidavit are true and correct to my knowledge and no part of it is false and nothing material has been concealed therefrom.

NOTARY PUBLIC BALKRISHNA DIXIT G.B. NAGAR (U.P.) Regd. No. 7167 GOVT. OF INDIA

ATTESTED
BALKRISHNA DIXIT
Advocate (Notary)
R. No. 7167
GAUTAM BUDH NAGAR (U.P.)
23 NOV 2024

(Deponent)
उमाशंकर मोहंती / Umasankar Mohanty
अपर महाप्रबंधक (वाणिज्यिक)
Addl. General Manager (Commercial)
एनटीपीसी लिमिटेड / NTPC Limited

TARIFF FILING FORMS (THERMAL)

FOR DETERMINATION OF TARIFF

FOR

TALCHER SUPER THERMAL POWER STATION, ST-II

(From 01.04.2024 to 31.03.2029)

PART-I

APPENDIX-I

Checklist of 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-3B**	Statement of Special Allowance	NA
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	NA
FORM- 6	Financial Package upto COD	NA
FORM- 7	Details of Project Specific Loans	NA
FORM- 8	Details of Allocation of corporate loans to various projects	✓
FORM-9A**	Summary of Statement of Additional Capitalisation claimed during the period	✓
FORM-9 ##	Statement of Additional Capitalisation after COD	✓
FORM- 10	Financing of Additional Capitalisation	✓
FORM- 11	Calculation of Depreciation on original project cost	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 Seconday Fuel for Computation of Energy Charges	✓
FORM- 15B	Computation of Energy Charges	✓
FORM- 16	Details of Limestone for Computation of Energy Charge Rate	NA
FORM-17	Details of Capital Spares	***
FORM- 18	Non-Tariff Income	***
FORM-19	Details of Water Charges	✓
FORM-20	Details of Statutory Charges	***

PART-I

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

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

**** Additional Forms**

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

PART-I
FORM- 1

Summary of Tariff

Name of the Petitioner:	NTPC Limited
Name of the Generating Station:	TALCHER SUPER THERMAL POWER STATION, ST-II
Place (Region/District/State):	ODISHA

Amount in Rs. Lakhs

S. No.	Particulars	Unit	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8	9
1.1	Depreciation	Rs Lakh	15,728.01	16,529.94	17,646.81	18,613.90	19,407.32	19,778.32
1.2	Interest on Loan	Rs Lakh	0.00	-	-	-	-	-
1.3	Return on Equity	Rs Lakh	34,119.69	34,337.94	34,957.31	35,759.52	36,367.54	36,629.77
1.4	Interest on Working Capital	Rs Lakh	11,173.31	11,924.76	12,226.89	12,548.24	12,879.21	13,232.57
1.5	O&M Expenses	Rs Lakh	80,444.56	85668.21	91293.99	97301.33	103753.75	110619.51
1.6	Special Allowance (If applicable)	Rs Lakh						
1.7	Compensation Allowance (If applicable –	Rs. Lakh						
	Total	Rs Lakh	**1,41,465.57**	**1,48,460.85**	**1,56,125.00**	**1,64,223.00**	**1,72,407.82**	**1,80,260.17**
2.1	Landed Fuel Cost (coal/gas/RLNG/ liquid) as per FSA	Rs/Ton	2364.78	2204.51	2204.51	2204.51	2204.51	2204.51
	(%) of Fuel Quantity	(%)						
2.2	Landed Fuel Cost Imported Coal		NA					
	(%) of Fuel Quantity							
2.3	Landed Fuel Cost (coal/gas /RLNG/liquid) other than FSA	Rs/Ton						
	(%) of Fuel Quantity	(%)						
2.4	Landed Fuel Cost Imported Coal other than FSA							
	(%) of Fuel Quantity							
2.5	Secondary fuel oil cost	Rs/Unit	0.03	0.03	0.03	0.03	0.03	0.03
	Energy Charge Rate ex-bus (Paise/kWh) 2A, 2B, 2C, 2D	Rs/Unit	1.811	1.755	1.755	1.755	1.755	1.755

PART-I
FORM- 1(I)

Name of the Petitioner:	NTPC Limited
Name of the Generating Station:	TALCHER SUPER THERMAL POWER STATION, ST-II

Amount in Rs. Lakhs

Statement showing claimed capital cost – (A+B)

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	6,06,533.24	6,12,317.24	6,28,517.73	6,40,878.73	6,50,186.73
2	Add: Addition during the year/period	5,784.00	16,200.49	12,361.00	9,308.00	-
3	Less: De-capitalisation during the year/period	-	-	-	-	-
4	Less: Reversal during the year / period	-	-	-	-	-
5	Add: Discharges during the year/ period	-	-	-	-	-
6	Closing Capital Cost	6,12,317.24	6,28,517.73	6,40,878.73	6,50,186.73	6,50,186.73
7	**Average Capital Cost**	**6,09,425.24**	**6,20,417.48**	**6,34,698.23**	**6,45,532.73**	**6,50,186.73**

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

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	606473.29	612257.29	628457.78	640414.78	649722.78
2	Add: Addition during the year / period	5784.00	16200.49	11957.00	9308.00	0.00
3	Less: De-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00
4	Less: Reversal during the year / period	0.00	0.00	0.00	0.00	0.00
5	Add: Discharges during the year / period	0.00	0.00	0.00	0.00	0.00
6	Closing Capital Cost	612257.29	628457.78	640414.78	649722.78	649722.78
7	**Average Capital Cost**	**609365.29**	**620357.54**	**634436.28**	**645068.78**	**649722.78**

Statement showing claimed capital cost eligible for RoE at one year MCLR + 350 bps subject to ceiling of 14.00% (B)

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
1	Opening Capital Cost	59.94	59.94	59.94	463.94	463.94
2	Add: Addition during the year / period	0.00	0.00	404.00	0.00	0.00
3	Less: De-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00
4	Less: Reversal during the year / period	0.00	0.00	0.00	0.00	0.00
5	Add: Discharges during the year / period	0.00	0.00	0.00	0.00	0.00
6	Closing Capital Cost	59.94	59.94	463.94	463.94	463.94
7	**Average Capital Cost**	**59.94**	**59.94**	**261.94**	**463.94**	**463.94**

PART-I

FORM- 1(IIA)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**TALCHER SUPER THERMAL POWER STATION, ST-II**

Statement showing Return on Equity at Normal Rate

Amount in Rs. Lakhs

S. No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7
	Return on Equity					
1	Gross Opening Equity (Normal)	1,81,941.98	1,83,677.18	1,88,537.33	1,92,124.43	1,94,916.83
2	Less: Adjustment in Opening Equity	-				
3	Adjustment during the year		-	-	-	-
4	Net Opening Equity (Normal)	1,81,941.98	1,83,677.18	1,88,537.33	1,92,124.43	1,94,916.83
5	Add: Increase in equity due to addition during the year / period	1735.20	4860.15	3587.10	2792.40	0.00
7	Less: Decrease due to De-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00
8	Less: Decrease due to reversal during the year / period	0.00	0.00	0.00	0.00	0.00
9	Add: Increase due to discharges during the year / period	0.00	0.00	0.00	0.00	0.00
10	Net closing Equity (Normal)	1,83,677.18	1,88,537.33	1,92,124.43	1,94,916.83	1,94,916.83
11	Average Equity (Normal)	1,82,809.58	1,86,107.26	1,90,330.88	1,93,520.63	1,94,916.83
12	Rate of ROE (%)	18.782	18.782	18.782	18.782	18.782
13	Total ROE	**34,335.30**	**34,954.66**	**35,747.95**	**36,347.04**	**36,609.28**

PART-I

FORM- 1(IIB)

	Name of the Petitioner:	**NTPC Limited**				
	Name of the Generating Station:	**TALCHER SUPER THERMAL POWER STATION, ST**				
	Statement showing Return on Equity at Weighted average rate					
						Amount in Rs. Lakhs
S. No.	**Particulars**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**	**3**	**4**	**5**	**6**	**7**
	Return on Equity (Return on Equity (beyond the original scope of work including additional capitalization due to Change in Law, Force Majeure)					
1	Gross Opening Equity	17.98	17.98	17.98	139.18	139.18
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	17.98	17.98	17.98	139.18	139.18
5	Add: Increase in equity due to addition during the year / period	0.00	0.00	121.20	0.00	0.00
7	Less: Decrease due to De-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00
8	Less: Decrease due to reversal during the year / period	0.00	0.00	0.00	0.00	0.00
9	Add: Increase due to discharges during the year / period	0.00	0.00	0.00	0.00	0.00
10	Net closing Equity	17.98	17.98	139.18	139.18	139.18
11	Average Equity	17.98	17.98	78.58	139.18	139.18
12A	Rate of ROE- Post Tax (%)	12.15%	12.15%	12.15%	12.15%	12.15%
12B	Effective Tax Rate (%)	17.47	17.47	17.47	17.47	17.47
12C	Rate of ROE – Pre Tax (%)	14.72%	14.72%	14.72%	14.72%	14.72%
13	Total ROE	**2.6474**	**2.6474**	**11.5691**	**20.4908**	**20.4908**

PART-I
FORM- 2

Plant Characteristics

Name of the Petitioner	**NTPC Ltd.**			
Name of the Generating Station :	**Talcher Super Thermal power Station Stage-II**			
Particulars	**Unit-I**	**Unit-II**	**Unit-III**	**Unit-IV**
Installed Capacity (MW)	500	500	500	500
Schedule COD as per Investment Approval				
Actual COD /Date of Taken Over (as applicable)	01-08-2003	01-03-2004	01-11-2004	01-08-2005
Pit Head or Non Pit Head or Integrated Mine	Pit Head			
Name of the Boiler Manufacture	CE Design, BHEL Supplied			
Name of Turbine Generator Manufacture	KWU, Germany			
Main Steams Pressure at Turbine inlet (kg/Cm^2) abs[1.]	**Not Applicable**			
Main Steam Temperature at Turbine inlet (^{o}C) [1]				
Reheat Steam Pressure at Turbine inlet (kg/Cm^2) [1]				
Reheat Steam Temperature at Turbine inlet (^{o}C) [1]				
Main Steam flow at Turbine inlet under MCR condition (tons /hr)[2]				
Main Steam flow at Turbine inlet under VWO condition (tons /hr)[2]				
Unit Gross electrical output under MCR /Ratedcondition (MW)[2]				
Unit Gross electrical output under VWOcondition (MW)[2]				
Guaranteed Design Gross Turbine Cycle Heat Rate (kCal/kWh)[3]				
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 (^{0}C)				
Back Pressure				
Steam flow at super heater outlet under BMCRcondition (tons/hr)				
Steam Pressure at super heater outlet underBMCR condition) **(kg/Cm^2)**				
Steam Temperature at super heater outlet underBMCR condition (^{0}C)				
Steam Temperature at Reheater outlet at BMCRcondition (^{0}C)				
Design / Guaranteed Boiler Efficiency (%)[4]				
Design Fuel with and without Blending of domestic/imported coal				
Type of Cooling Tower	IDCT			
Type of cooling system[5]	Closed Ckt cooling			
Type of Boiler Feed Pump[6]	2 Nos Turbine driven and one no motor driven			
Type of Boiler (Wall Fired/Tangential Fired)	Tangential Fired			
Fuel Details[7]				
- Primary Fuel	Coal			
- Secondary Fuel	HFO			
- Alternate Fuels	NA			
Special Features/Site Specific Features[8]				
Special Technological Features[9]				
Environmental Regulation related features[10]	ESP			
Any other special features				

1: At Turbine MCR condition.

2: with 0% (Nil) make up and design Cooling water temperature

3: at TMCR output based on gross generation, 0% (Nil) makeup and design Cooling water temperature.

4: With Performance coal based on Higher Heating Value (HHV) of fuel and at BMCR) out put

5: Closed circuit cooling, once through cooling, sea cooling, natural draft cooling, induced draft cooling etc.

6: Motor driven, Steam turbine driven etc.

7: Coal or natural gas or Naptha or lignite etc.

8: Any site specific feature such as Merry-Go-Round, Vicinity to sea, Intake /makeup water systems etc. scrubbers etc. Specify all such features

9: Any Special Technological feature like Advanced class FA technology in Gas Turbines, etc.

10: Environmental Regulation related features like FGD, ESP etc.,

PART-I
FORM- 3

Normative parameters considered for tariff computations

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**TALCHER SUPER THERMAL POWER STATION, ST-II**

(Year Ending March)

Particulars	Unit	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
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
Rate of Return on Add - cap beyond the original scope of work including additional capitalization due to Change in Law, Force Majeure	%	7.56%	12.15%	12.15%	12.15%	12.15%	12.15%
Effective Tax Rate	%	17.4720	17.4720	17.4720	17.4720	17.4720	17.4720
Target Availability	%	85.00	85.00	85.00	85.00	85.00	85.00
Peak Hours	%	85	85.00	85.00	85.00	85.00	85.00
Off-Peak Hours	%	85	85.00	85.00	85.00	85.00	85.00
ß- Average Monthly Frequency Response Performance	0-1	NA	Will be provided at the time of truing up				
Auxiliary Energy Consumption	%	6.25	5.75	5.75	5.75	5.75	5.75
Gross Station Heat Rate	kCal/kWh	2390.00	2375.00	2375.00	2375.00	2375.00	2375.00
Specific Fuel Oil Consumption	ml/kWh	0.50	0.50	0.50	0.50	0.50	0.50
Cost of Coal/Lignite for WC	in Days	40	40	40	40	40	40
Cost of Main Secondary Fuel Oil for WC	in Months	2	2	2	2	2	2
Fuel Cost for WC2	in Months	NA	NA	NA	NA	NA	NA
Liquid Fuel Stock for WC	in Months	NA	NA	NA	NA	NA	NA
O&M Expenses	Rs lakh/MW	25.84	27.17	28.60	30.10	31.68	33.34
Maintenance Spares for WC	% of O&M	20.00	20.00	20.00	20.00	20.00	20.00
Receivables for WC	in Days	45	45	45	45	45	45
Storage capacity of Primary fuel	MT	533333					
SBI 1 Year MCLR plus 325 basis point	%	12.00	11.90	11.90	11.90	11.90	11.90
Blending ratio of domestic coal/imported coal		NA	NA	NA	NA	NA	NA
Norms for consumption of reagent		FGD not commissioned					
ECS (De NOX)		Combustion modification system commissioned in Units #5 &Unit #6 in 2019-24 period					

Part-I
FORM-3A
ADDITIONAL FORM

Calculation of O&M Expenses

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**TALCHER SUPER THERMAL POWER STATION, ST-II**

Amount in Rs. Lakhs

S.No.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	7	8
1	**O&M expenses under Reg.36(1)**					
1a	Normative	54340.00	57200.00	60200.00	63360.00	66680.00
2	**O&M expenses under Reg.36(1)(6)**					
2a	Water Charges	6301.01	6651.07	7001.12	7371.32	7701.23
2b	Secutiry expenses	3357.20	3692.92	4062.21	4468.43	4915.28
2c	Capital Spares	0.00	0.00	0.00	0.00	0.00
3	O&M expenses-Ash Transportation	20800	22880	25168	27684	30453
4	Elec. Charges for mine dewatering *	720.00	720.00	720.00	720.00	720.00
5	MCL-Ash filing charges**	150.00	150.00	150.00	150.00	150.00
	Total O&M Expenses	**85668.21**	**91293.99**	**97301.33**	**103753.75**	**110619.51**

Note: The water agreement between M/s NTPC and the Govt of Odisha is marked as **Annexure A/7**. The Agreement directs NTPC to pay as per water allocated or drawn,**whichever is higher.**

*Electricity charges for mine dewatering: In mine void filling scheme of Talcher-STPS-II, ash is transported to Jagannath quarry mines in the form of ash slurry, which is approximately 25 Kms from the station. To manage the water influx from the ash slurry and rainwater, the mines need regular and continuous dewatering. Consequently, the pumping power required for the dewatering process is arranged from M/s TPCODL, (TP Central Odisha Distribution Limited),a joint venture of Odisha Government and M/s Tata Power. Hence the petitioner seeks liberty to claim the same at the time of truing up.

** MCL-Ash filling charges: NTPC is required to pay the ash filling charges in Quarry No VIII of Jagannath OCP to M/s MCL as per the MOU signed between NTPC and MCL. Hence the Ash filling charges of Rs 7.50 crores is projected for the 2024-29 period. The MOU dated 18.09.2020 between M/s NTPC and M/s MCL and the supporting documents is attached as **Annexure- A/8**

Further it is mentioned that vide demand invoice dated 05.09.2024, M/s MCL has also raised demand for the 2020-2024 period for Rs 3.52 crores. The demand note is attached as **Annexure- A/9** and the amount is likely to be disbursed in FY 2024-25. Since the amount will be paid in 2024-29 period, NTPC seeks liberty to claim Rs 3.52 crores at the time of truing up of 2024-29.

PART 1
FORM- 5A

Abstract of Claimed Capital Cost for the existing Projects

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Talcher Super Thermal Power Station- I**

Capital Cost as on 31.03.2024 as per 2019-24 (True Up petition)	**Rs. Lakhs**	6,06,533.24
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 01.04.2024	**(Rs. in lakh)***	6,06,533.24
Capital cost as on 31.03.2029		6,50,186.73
Amount of un-discharged liabilities as on 31.03.2024		3881.16
Gross Normative Debt		4,55,130.71
Cumulative Repayment		4,55,130.71
Net Normative Debt		0.00
Normative Equity		1,95,056.01
Cumulative Depreciation		5,51,916.26
Freehold land		1,301.86

Form 8- Domestic Bonds- Details of Allocation of corporate loans to		
Particulars	***XXI 7.7125%***	***XXVII 11.25%***
Source of Loan1	BONDS	BONDS
Currency2	INR	INR
Amount of Loan sanctioned	**100000**	**35000**
Interest Type6	Fixed	Fixed
Fixed Interest Rate, if applicable	7.7125%	11.250%
Base Rate, if Floating Interest7	N/A	N/A
Margin, if Floating Interest8	N/A	N/A
Are there any Caps/Floor9	No	No
If above is yes,specify caps/floor		
Moratorium Period10	4.5 yrs *	11 yrs
Moratorium effective from #	02.02.06	06.11.2008
Repayment Period11	9.5 yrs	5 yrs
Repayment effective from	02.08.10	06.11.19
Repayment Frequency12	Half Yearly	Yearly
Repayment Instalment13,14	5000	7000
Base Exchange Rate16		
Door to Door Maturity	14 yrs	15 yrs
Name of the Projects		
BARH I	3,000	-
Kahalgaon II Phase I	18,500	-
KOLDAM	2,000	-
NCTPP II	-	22,500
RAMAGUNDAM III	4,000	1,500
RIHAND II	25,000	-
Simhadari R & M		
Vidhyachal Hydro**		
SIPAT I	2,500	5,000
SIPAT II	-	3,000
TALCHER II	28,000	1,500
Unchahar III	4,500	1,500
Vindhyachal III	12,500	-
CC		
TOTAL	**1,00,000**	**35,000**

FORM-8

Name of the Company	NTPC Ltd
Name of the Power Station	TSTPS-II
Commercial Operation Date (COD)	01.08.2005

Particulars				
Source of Loan - Bonds Series	**54**	**57**	**61**	**66**
Currency	INR	INR	INR	INR
Amount of Loan sanctioned (In Lakh)	10,30,683.05	50,000.00	1,07,250.00	3,92,500.00
Amount of Gross Loan drawn upto COD (In Lakh)	10,30,683.05	50,000.00	1,07,250.00	3,92,500.00
Interest Type	Fixed	Fixed	Fixed	Fixed
Fixed Interest Rate, if applicable**	8.4900%	8.1900%	8.1000%	7.3700%
Base Rate, if Floating Interest	N/A	N/A	N/A	N/A
Margin, if Floating Interest	N/A	N/A	N/A	N/A
Are there any Caps/Floor	No	No	No	No
If above is yes,specify caps/floor	N/A	N/A	N/A	N/A
Moratorium Period (In Years)	8	10	5	15
Moratorium effective from*	25-03-2015	15-12-2015	27-05-2016	14-12-2016
Repayment Period	Installments Due on 25/03/2023, 25/03/2024 & 25/03/2025	Bullet Repayment	Installments Due on 27/05/2021, 27/05/2026 & 27/05/2031	Bullet Repayment
Repayment effective from	25-03-2023	15-12-2025	27-05-2021	14-12-2031
Repayment Frequency	Installments Due on 25/03/2023, 25/03/2024 & 25/03/2025	Bullet Repayment	Installments Due on 27/05/2021, 27/05/2026 & 27/05/2031	Bullet Repayment
Repayment Instalment (In Lakh)	Installments 1st - 206,136.61 2nd - 412,273.22 3rd - 412,273.22	50,000.00	Installments 1st - 35,750.00 2nd - 35,750.00 3rd - 35,750.00	3,92,500.00
Base Exchange Rate	N/A	N/A	N/A	N/A
Door to Door Maturity (In Years)	10	10	15	15

Name of the Projects	**54**	**57**	**61**	**66**
Talchar II	12,000.00	700.00	1,200.00	500.00

*Moratorium period has been taken as the period from Deemed Date of Allotment till the date of first
** Excluding Survillience fees of 0.03%

1. Source of loan means the agency from whom the loan has been taken such as WB, ADB, WMB,
2. Currency refers to currency of loan such as US$, DM, Yen,Indian Rupee etc.
3. Details are to be submitted as on 31.03.2004 for existing assets and as on COD for the remaining
4. Where the loan has been refinanced, details in the Form is to be given for the loan refinaced.
5. If the Tariff in the petition is claimed seperately for various units, details in the Form is to be given
6. Interest type means whether the interest is fixed or floating.
7. Base rate means the base as PLR, LIBOR etc. over which the margin is to be added. Applicable
8. Margin means the points over and above the floating rate.
9. At times caps/floor are put at which the floating rates are frozen. If such a condition exists, specify
10. Moratorium period refers to the period during which loan servicing liability is not required.
11. Repayment period means the repayment of loan such as 7 years, 10 years, 25 years etc.
12. Repayment frequency means the interval at which the debt servicing is to be done such as
13. Where there is more than one drawal/repayment for a loan, the date & amount of each
14. If the repayment instalment amount and repayment date can not be worked out from the data
15. In case of Foreign loan,date of each drawal & repayment alongwith exchange rate at that date
16. Base exchange rate means the exchange rate prevailing as on 31.03.2004 for existing assets and

FORM-8

Name of the Company	NTPC Ltd
Name of the Power Station	Talcher STPS-II
Commercial Operation Date (COD)	01.08.2005

Particulars	
Source of Loan - Bonds Series	**72**
Currency	INR
Amount of Loan sanctioned (In Lakh)	4,00,000
Amount of Gross Loan drawn upto COD (In Lakh)	4,00,000
Interest Type	Fixed
Fixed Interest Rate, if applicable	5.45%
Base Rate, if Floating Interest	N/A
Margin, if Floating Interest	N/A
Are there any Caps/Floor	No
If above is yes,specify caps/floor	N/A
Moratorium Period (In Years)	5
Moratorium effective from*	15-10-2020
Repayment Period	Bullet Repayment
Repayment effective from	15-10-2025
Repayment Frequency	Bullet Repayment
Repayment Instalment (In Lakh)	4,00,000
Base Exchange Rate	N/A
Door to Door Maturity (In Years)	5

Name of the Projects	**72**
TALCHER II	3,400.00
TOTAL	**4,00,000.00**

KFW ESP Loan

Particulars			
Source of Loan	KFW ESP I	KfW ESP II	KfW ESP IX
Drawal	50,00,000.00	70,00,000.00	1,00,00,000.00
Currency	EUR	EUR	EUR
Amount of loan sanctioned			
Amount of Gross Loan drawn upto 31.03.2019			
Interest Type	Fixed	Fixed	Fixed
Fixed Interest Rate, if applicable	3.19%	3.19%	3.19%
Base Rate, if floating interest	-	-	-
Margin, if floating interest rate	-	-	-
Are there any Caps / Floor	NO	NO	NO
If above is Yes, specify Caps / Floor	-	-	-
Moratorium Period	4 Years 2½ Months	4 Years 2½ Months	4 Years 2½ Months
Moratorium effective from			
Repayment period	Repayment in 8 Years (16 semi-annual instalments)	Repayment in 8 Years (16 semi-annual instalments)	Repayment in 8 Years (16 semi-annual instalments)
Repayment effective from	15.09.2017	15.09.2017	15.09.2017
Repayment frequency			
Repayment installment			
Base Exchange Rate (31.03.2019)			
Are foreign currency loan hedged			
If above is Yes, specify details	NO	NO	NO
Drawl Date	10.12.13	14.02.14	17.08.15
Drawl Exchange Rate	83.97569	85.01401	72.34003
Name of the Projects			
Anantpur Solar			
Farakka ESP			12.19552%
Korba STPS- ESP	76.00000%	37.34753%	10.57396%
Rihand-I ESP			22.65206%
Singrauli I & II ESP			41.60665%
Talcher STPP-ESP	24.00000%	18.91575%	2.82990%
TTPS -II ESP		5.49912%	0.49892%
Unchahar-I ESP			4.83787%
VSTPP I & II ESP		38.23760%	4.80512%
Total	**100.00000%**	**100.00000%**	**100.00000%**

	Name of the Petitioner				**NTPC Ltd.**				**PART-I**
	Name of the Generating Station				**TSTPS-II**				**FORM- 9A**
	COD				**1-Aug-05**				
	For Financial Year				**2019-24 (Summary)**				
									Rs. Lakhs
	Sl. No.	**Head of Work /Equipment**	ACE Claimed Cash Basis					Justification	Admitted Cost by the Commission, if
			2024-25	**2025-26**	**2026-27**	**2027-28**	**2028-29**		
	1	2	3	4	5	6	7	9	10
A		**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**							
	1	Ash dyke/ash handling related works	0.00	2962.49	0.00	3300.00	0.00	Refer to Form-9A of individual Financial Year	
	2	Upgradation against obsolescence of HMI of M/s Honeywell	0.00	3900.00	0.00	0.00	0.00		
	3	Mine Void filling	5784.00	9338.00	11957.00	6008.00	0.00		
		Sub total Additional Capitalization at normal ROE (A)	**5784.00**	**16200.49**	**11957.00**	**9308.00**	**0.00**		
B		**Return on Equity (@ SBI MCLR plus 350 BP)**							
	1	Cold fog dust supression (CFDS)			404.00				
		Sub Total(B)	0.0	0.0	404.00	0.0	0.0		
		Total Add Cap Claimed for Tariff	**5784.00**	**16200.49**	**12361.00**	**9308.00**	**0.00**		

Year wise Statement of Additional Capitalisation after COD

PART-I
FORM- 9A
Amt in Rs. Lakhs

Name of the Petitioner	NTPC Ltd
Name of the Generating Station	Talcher Super Thermal Power Station, Stage-II
COD	01.08.2005
For Financial Year	2024-25

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual for 2024-25)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis	Ind AS Adj.	Accrual basis as per IGAAP	Un-discharged Liability included in col. 3	Cash basis	IDC included in col. 3			
1	2	3	3A	3B = 3+3A	4	5= (3B–4)	6	7	8	9
A	**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**									
1	Mine Void filling	5784.00	0.00	5784.00	0.00	5784.00	0.00	26(1)(b) & 19(3)(d)	SPCB Odisha in their consent order no 480 dtd 13.01.2012 (**Annexure- A/1**) at clause no 15 of special conditions for water pollution control directed NTPC to expedite all works towards ash disposal in mine voids of Jagannath quarry. The same was again dircted by OSPCB through order dated 24.03.15. -Accordingly the station has prepared a comprehensive scheme for implementing the scheme for transportation of fly ash to mine void at Jagannath quarry. The delay in implementation of the scheme was due to delay in statutory clearnaces from MoEF. MoEF clearnce has been granted vide minutes of 4th Expert appraisal Committee(EAC) of MoEF held on 16.03.17 (Please refer Para 4.7 of the minutes attached at **Annex- A/2**) . Further the mine void filing activity was delayed due to much resistance from the villagers led by local leader. The letter from Minister of Power to Odisha CM is attached in this regard and the investment approval of the same is attached as **Annexure A/3**. The balance works of mine void filling is projected to be completed in 2024-29 period. Vide consent to operate order No 4121, 20.03.2023, and Ministry of coal office memorundum dated 22.04.2021 attached as **Annexure A/4,** State Pollution Control Board instructed under Serial No-D and Ministry of coal has permitted to fill ash to Jagannath Decoaled Open Cast Mines for ash utilisation. The work of Mine void filling for disposal of ash may please be allowed by Hon'ble Commission.	
	Sub Total (A)	**5,784.00**	**0.00**	**5,784.00**	**0.00**	**5,784.00**	**0.00**			
B	**Return on Equity (@ SBI MCLR plus 350 BP)**									
	Sub Total (B)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**			
	Total Add Cap claimed(A+B)	**5784.00**	**0.00**	**5784.00**	**0.00**	**5784.00**	**0.00**			

Year wise Statement of Additional Capitalisation after COD

	Name of the Petitioner			**NTPC Ltd**						
	Name of the Generating Station			**Talcher Super Thermal Power Station-II**						**PART-I**
	Station COD			**01.08.2005**						**FORM- 9A**
	For Financial Year			**2025-26**						**Amount in Rs. Lakhs**
Sl. No.	**Head of Work /Equipment**	**ACE Claimed (Actual for 2025-26)**						**Regulations under which claimed**	**Justification**	**Admitted Cost by the Commission, if any**
		Accrual basis as per Note 2	**Ind AS Adj.**	**Accrual basis as per IGAAP**	**Un-discharged Liability**	**Cash basis**	**IDC included in col. 3**			
1	2	3	3A	3B = 3+3A	4	5= (3B-4)	6			
A	**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**									
1	Ash dyke/ash handling related works	2962.49	0.00	2962.49		2962.49		25(1)(c) & 25(1)(b)	The expenditure incurred is for disposal of ash for sustained operation related to Ash dyke/ ash handling system, which are of continuous nature during the operational life of the generating station. The works planned during the period is the raising /strengthening of lagoons, peripheral filling of dykes etc. The raising of Ash Dyke is a continuous process and occurs throughout the life of the generating station. It is submitted that nine raisings of Lagoon 1 and Lagoon 2 is envisaged for augmentation of ash dyke capacity. These works are as per the approved scheme under original scope of work. The commission vide its order dated 27.04.2023 in 441/GT/2023 has allowed the ash dyke expenditure of Rs 163.85 crores during the 2019-24 period. The Ash dyke works were progressively executed and capitalised during the 2019-24. However during various reasons such as resistance from the villagers, non availability of dykes for raisings in a running station etc led to the delay. The balance work will be capitalised during the 2024-29 period. Further SPCB in its order no 4121 dated 20.03.2023 in section F2 Sl No 26, **(attached as Annexure A/4)** has directed to augment the capacity of ash dykes for future storage. With the increase in power demand across the country and increase in PLF over the years of the instant station, there is further likely of increase in ash generation of the instant station. Hon'ble Commission may please allow the same.	Hon'ble commission vide order dated 27.04.2023 in 441/GT/2023 has allowed the Ash dyke and Ash handling related works for Rs 163.85 crores.
2	Upgradation against obsolescence of HMI of M/s Honeywell	3900.00	0.00	3900.00		3900.00		25(2)(b) & (c)	The HMI system previously deployed at Station relied on the Windows XP operating system. Since Microsoft no longer supports Windows XP, this created significant cybersecurity risks. To address these concerns and ensure continued functionality of the system, an upgrade project was necessary. However, existing HMI software and hardware were not directly compatible with Windows 10. Therefore, the project scope encompassed a complete Replacement and Modernization (R&M) of the HMI system. Communication from the HMI OEM, Honeywell, regarding this incompatibility is attached as **Annexure-A/6.** Further, CEA, MOP in its cyber security 2021 has issued guidelines for the power sector. Section 2.1 highlights the objectives of the guideline while section 2.3 and 2.4 highlights the applicability and the scope. The same is marked and attached as **Annexure A/11.** Hon'ble Commission has allowed the similar additional capital expenditure incurred on HMI upgradation in Anta gas power station and Meja thermal power station vide its order dated 05.09.2023 (in petition no. 432-GT-2020) and order dated 27.04.2023 (in petition no. 568-GT-2020) respectively. Non-availability of support/security patches/updates from Microsoft and DCS OEM for these obsolete systems has rendered the system vulnerable to cyber threats. This has also made it difficult for the system to comply with latest CEA Guideline on Cyber Security in Power Sector. Therefore, for continued and efficient operation of the system, it is humbly requested that Hon'ble Commission may be pleased to allow the same under Regulation 25(2)(b) and 25(2)(c) of Tariff Regulations 2024 on account of replacement due to change in law and also due to obsolescence of Technology.	
3	Mine Void filling	9338.00	0.00	9338.00	0.00	9338.00	-	26(1)(b) & 19(3)(d)	Plz refer to justification in Sl No A1 in Form 9A (2024-25)	
	Sub Total(A)	16,200.49	-	16,200.49	-	16,200.49	-			
B	**Return on Equity (@ SBI MCLR plus 350 BP)**									
	Sub Total(B)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**				
	Total ADD Cap claimed(A+B)	**16,200.49**	**-**	**16,200.49**	**-**	**16,200.49**				

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner				**NTPC Ltd**						
Name of the Generating Station				**Talcher Super Thermal Power Station-II**						**PART-I**
Station COD				**01.08.2005**						**FORM- 9A**
For Financial Year				**2026-27**						**Amount in Rs. Lakhs**
Sl. No.	**Head of Work /Equipment**	**ACE Claimed (Projected for 2026-27)**						**Regulations under which**	**Justification**	**Admitted Cost by the Commission, if any**
		Accrual basis as per Note 2	**Ind AS Adj.**	**Accrual basis as per IGAAP**	**Un-discharged Liability**	**Cash basis**	**IDC included in col. 3**			
1	**2**	**3**	**3A**	**3B = 3+3A**	**4**	**5= (3B-4)**	**6**			
A	**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**									
1	Mine Void filling	11957.00	0.00	11957.00	0.00	11957.00		26(1)(b) & 19(3)(d)	Plz refer to justification in Sl No A1 in Form 9A (2024-25)	
	Sub Total (A)	**11957.00**	**0.00**	**11957.00**	**0.00**	**11957.00**				
B	**Return on Equity (@ SBI MCLR plus 350 BP)**									
1	Cold fog dust supression (CFDS)	404	0	404	0	404		26(1)(b)	Vide Consent order 4121, 20.03.2023 attached as Annexure A/4, under special condition F1-12, State Pollution Control Board directed to install water spary system in dust prone area. Hence installation of CFDS is to be done for control of fugitive dust inside Crusher House . This will help in providing a safe working environment to the personnels working in that area. It will also improve the healthiness of equipment thus reliability of system.	
	Sub Total(B)	404.00	0.00	404.00	0.00	404.00				
	Total ADD Cap claimed(A+B)	**12361.00**	**0.00**	**12361.00**	**0.00**	**12361.00**				

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner				NTPC Ltd						PART-I
Name of the Generating Station				Talcher Super Thermal Power Station-II						FORM- 9A
Station COD				01.08.2005						Amount in Rs. Lakhs
For Financial Year				2027-28						
Sl. No.	Head of Work /Equipment	ACE Claimed (Projected for 2027-28)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Note 2	Ind AS Adj.	Accrual basis as per IGAAP	Un-discharged Liability	Cash basis	IDC included in col. 3			
1	2	3	3A	3B = 3+3A	4	5= (3B-4)	6			
A	Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate									
1	Ash dyke/ash handling related works	3300.00	0.00	3300.00	0.00	3300.00		25(1)(c) & 25(1)(b)	Plz refer to justification in Sl No A1 in Form 9A (2025-26)	
2	Mine Void filling	6008.00	0.00	6008.00	0.00	6008.00		26(1)(b) & 19(3)(d)	Plz refer to justification in Sl No A1 in Form 9A (2024-25)	
	Sub Total (A)	9308.00	0.00	9308.00	0.00	9308.00				
B	Return on Equity (@ SBI MCLR plus 350 BP)									
	Sub Total (B)	0.00	0.00	0.00	0.00	0.00				
	Total ADD Cap claimed(A+B)	**9308.00**	**0.00**	**9308.00**	**0.00**	**9308.00**				

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner				NTPC Ltd						PART-I
Name of the Generating Station				Talcher Super Thermal Power Station-II						FORM- 9A
Station COD				01.08.2005						Amount in Rs. Lakhs
For Financial Year				2028-29						
Sl. No.	Head of Work /Equipment	ACE Claimed (Projected for 2028-29)						Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per Note 2	Ind AS Adj.	Accrual basis as per IGAAP	Un-discharged Liability	Cash basis	IDC included in col. 3			
1	2	3	3A	3B = 3+3A	4	5= (3B-4)	6			
A	Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate									
	Sub Total (A)	0.00	0.00	0.00	0.00	0.00				
B	Return on Equity (@ SBI MCLR plus 350 BP)									
	Sub Total (B)	0.00	0.00	0.00	0.00	0.00				
	Total ADD Cap claimed (A+B)	0.00	0.00	0.00	0.00	0.00				

PART-I
FORM- 10

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**TALCHER SUPER THERMAL POWER STATION, ST-II**
Date of Commercial Operation	**01-08-2005**

Amount in Rs Lakh

Financial Year (Starting from COD)1	Actual					Admitted				
	2024-25	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1		3	4	5	6	7	8	9	10	11
Amount capitalised in Work/ Equipment										
Financing Details	**Add cap is proposed to be finance in Debt:Equity ratio of 70:30**									
Loan-1										
Loan-2										
Loan-3 and so on										
Total Loan2										
Equity Internal Resources										
Others (Pl. specify)										
Total										

PART-I
FORM- 12

Statement of Depreciation

Name of the Company : NTPC Limited

Name of the Power Station : TALCHER SUPER THERMAL POWER STATION, ST-II

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1	Opening Capital Cost	6,04,599.04	6,06,533.24	6,12,317.24	6,12,317.24	6,12,317.24	6,12,317.24
2	Closing Capital Cost	6,06,533.24	6,12,317.24	6,12,317.24	6,12,317.24	6,12,317.24	6,12,317.24
3	Average Capital Cost	6,05,566.14	6,09,425.24	6,12,317.24	6,12,317.24	6,12,317.24	6,12,317.24
1a	*Cost of IT Equipments & Software included in (1) above	683.25	722.87	722.87	722.87	722.87	722.87
2a	*Cost of IT Equipments & Software included in (2) above	722.87	722.87	722.87	722.87	722.87	722.87
3a	*Average Cost of IT Equipments & Software	703.06	722.87	722.87	722.87	722.87	722.87
4	Freehold land	1,301.86	1,301.86	1,301.86	1,301.86	1,301.86	1,301.86
5	Rate of depreciation	-	-	-	-	-	-
6	Depreciable value	5,43,908.16	5,47,383.33	5,49,986.13	5,49,986.13	5,49,986.13	5,49,986.13
7	Balance useful life at the beginning of the period	6.29	5.29	4.29	3.29	2.29	1.29
8	Remaining depreciable value	98,929.18	87,443.36	73,516.22	56,379.57	39,242.92	22,106.28
9	Depreciation (for the period)	15,728.01	16,529.94	17,136.65	17,136.65	17,136.65	17,136.65
10	**Depreciation (annualised)**	**15,728.01**	**16,529.94**	**17,136.65**	**17,136.65**	**17,136.65**	**17,136.65**
11	Cumulative depreciation at the end of the period	4,60,706.99	4,76,469.91	4,93,606.55	5,10,743.20	5,27,879.85	5,45,016.50
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009	-		-	-	-	-
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	767.01					
15	Net Cumulative depreciation at the end of the period after adjustments	4,59,939.97	4,76,469.91	4,93,606.55	5,10,743.20	5,27,879.85	5,45,016.50

	B. For New Assets (proposed in 2024-29 period)						
16	Opening capital cost		-	-	16,200.49	28,561.49	37,869.49
17	Additional capital expenditure			16,200.49	12,361.00	9,308.00	-
18	Closing capital cost			16,200.49	28,561.49	37,869.49	37,869.49
19	Average capital cost			8,100.25	22,380.99	33,215.49	37,869.49
20	Freehold land						
21	Depreciable Value			7,290.22	20,142.89	29,893.94	34,082.54
22	Cumulative depreciation at the beginning of the year			-	510.16	1,987.42	4,258.09
23	Balance depreciable value			7,290.22	19,632.73	27,906.52	29,824.45
24	Balance life at the beginning of the year			14.29	13.29	12.29	11.29
25	Depreciation Rate						
26	**Depreciation for the year**			**510.16**	**1,477.26**	**2,270.67**	**2,641.67**
27	Cu. depreciation adjustment on account of de-capitalisation						
28	Cu. Depreciation at end of the year			510.16	1,987.42	4,258.09	6,899.76
	C. For total Assets (A+B)						
29	Opening capital cost		6,06,533.24	6,12,317.24	6,28,517.73	6,40,878.73	6,50,186.73
30	Additional capital expenditure		5,784.00	16,200.49	12,361.00	9,308.00	-
31	Closing capital cost		6,12,317.24	6,28,517.73	6,40,878.73	6,50,186.73	6,50,186.73
32	Average capital cost		6,09,425.24	6,20,417.48	6,34,698.23	6,45,532.73	6,50,186.73
33	Freehold land		1,301.86	1,301.86	1,301.86	1,301.86	1,301.86
34	Depreciable Value		5,47,383.33	5,57,276.35	5,70,129.02	5,79,880.07	5,84,068.67
35	Cumulative depreciation at the beginning of the year		4,59,939.97	4,76,469.91	4,94,116.72	5,12,730.62	5,32,137.94
36	Balance depreciable value		87,443.36	80,806.44	76,012.30	67,149.45	51,930.73
37	Balance operational life at the beginning of the year			14.29	13.29	12.29	11.29
38	Depreciation Rate						
39	**Depreciation for the year**		**16,529.94**	**17,646.81**	**18,613.90**	**19,407.32**	**19,778.32**
40	Cu. depreciation adjustment on account of de-capitalisation						
41	Cu. Depreciation at end of the year		4,76,469.91	4,94,116.72	5,12,730.62	5,32,137.94	5,51,916.26

Note: As per the filed Affidavit in CERC, the unrecovered depreciation for Talcher STPS-II at the end of useful life is Rs 3.29 crores

PART-I
FORM-13

Calculation of Interest on Actual Loans[1]

Name of the Company **NTPC LTD.**
Name of the Power Station **Talcher-II**

(Amount in lacs)

Sl. no.	Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
	Bonds LIV Series					
	Gross loan - Opening	12000	12000	12000	12000	12000
	Cumulative repayments of Loans upto previous year	7200	12000	12000	12000	12000
	Net loan - Opening	4800	0	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	4800	0	0	0	0
	Repayments of Loans during the year	4800	0	0	0	0
	Net loan - Closing	0	0	0	0	0
	Average Net Loan	2400	0	0	0	0
	Rate of Interest on Loan	8.5200%	8.5200%	8.5200%	8.5200%	8.5200%
	Interest on loan	204.48	0.00	0.00	0.00	0.00
	Bonds LVII Series					
	Gross loan - Opening	700	700	700	700	700
	Cumulative repayments of Loans upto previous year	0	0	700	700	700
	Net loan - Opening	700	700	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	700	700	0	0	0
	Repayments of Loans during the year	0	700	0	0	0
	Net loan - Closing	700	0	0	0	0
	Average Net Loan	700	350	0	0	0
	Rate of Interest on Loan	8.2200%	8.2200%	8.2200%	8.2200%	8.2200%
	Interest on loan	57.54	28.77	0.00	0.00	0.00
	Bonds LXI Series Rpayment on 27.5.2021/26/31					
	Gross loan - Opening	1200	1200	1200	1200	1200
	Cumulative repayments of Loans upto previous year	400	400	800	800	800
	Net loan - Opening	800	800	400	400	400
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	800	800	400	400	400
	Repayments of Loans during the year	0	400	0	0	0
	Net loan - Closing	800	400	400	400	400
	Average Net Loan	800	600	400	400	400
	Rate of Interest on Loan	8.1300%	8.1300%	8.1300%	8.1300%	8.1300%
	Interest on loan	65.04	48.78	32.52	32.52	32.52
	Bonds LXVI Series					
	Gross loan - Opening	500	500	500	500	500
	Cumulative repayments of Loans upto previous year	0	0	0	0	0
	Net loan - Opening	500	500	500	500	500
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	500	500	500	500	500
	Repayments of Loans during the year	0	0	0	0	0

	Net loan - Closing	500	500	500	500	500
	Average Net Loan	500	500	500	500	500
	Rate of Interest on Loan	7.4000%	7.4000%	8.5200%	7.4000%	7.4000%
	Interest on loan	37.00	37.00	42.60	37.00	37.00
	Bonds-72 (Refinancing of PFC V- D32)					
	Gross loan - Opening	1488	1488	1488	1488	1488
	Cumulative repayments of Loans upto previous year	0	0	1488	1488	1488
	Net loan - Opening	1488	1488	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	1488	1488	0	0	0
	Repayments of Loans during the year	0	1488	0	0	0
	Net loan - Closing	1488	0	0	0	0
	Average Net Loan	1488	744	0	0	0
	Rate of Interest on Loan	6.5950%	6.5950%	0.0000%	0.0000%	0.0000%
	Interest on loan	98.10	49.05	0.00	0.00	0.00
	Bonds-72 (others)					
	Gross loan - Opening	1913	1913	1913	1913	1913
	Cumulative repayments of Loans upto previous year	0	0	1913	1913	1913
	Net loan - Opening	1913	1913	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	1913	1913	0	0	0
	Repayments of Loans during the year	0	1913	0	0	0
	Net loan - Closing	1913	0	0	0	0
	Average Net Loan	1913	956	0	0	0
	Rate of Interest on Loan	5.4800%	5.4800%	0.0000%	0.0000%	0.0000%
	Interest on loan	104.81	52.40	0.00	0.00	0.00
	KFW ESP D1 Repayment in 16 Semi-Annual Installment from 15.09.2017					
	Gross loan - Opening	504	504	504	504	504
	Cumulative repayments of Loans upto previous year	441	504	504	504	504
	Net loan - Opening	63	0	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	63	0	0	0	0
	Less: Repayment (s) of Loans during the year	63	0	0	0	0
	Net loan - Closing	0	0	0	0	0
	Average Net Loan	31	0	0	0	0
	Rate of Interest on Loan	3.1900%	3.1900%	3.1900%	3.1900%	3.1900%
	Interest on loan	1.00	0.00	0.00	0.00	0.00
	KFW ESP D2 Repayment in 16 Semi-Annual Installment from 15.09.2017					
	Gross loan - Opening	563	563	563	563	563
	Cumulative repayments of Loans upto previous year	492	563	563	563	563
	Net loan - Opening	70	0	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	70	0	0	0	0
	Less: Repayment (s) of Loans during the year	70	0	0	0	0
	Net loan - Closing	0	0	0	0	0
	Average Net Loan	35	0	0	0	0
	Rate of Interest on Loan	3.1900%	3.1900%	3.1900%	3.1900%	3.1900%
	Interest on loan	1.12	0.00	0.00	0.00	0.00
	KFW ESP D9 Repayment in 16 Semi-Annual Installment from 15.09.2017					
	Gross loan - Opening	205	205	205	205	205
	Cumulative repayments of Loans upto previous year	179	205	205	205	205
	Net loan - Opening	26	0	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	26	0	0	0	0
	Less: Repayment (s) of Loans during the year	26	0	0	0	0
	Net loan - Closing	0	0	0	0	0
	Average Net Loan	13	0	0	0	0
	Rate of Interest on Loan	3.1900%	3.1900%	3.1900%	3.1900%	3.1900%
	Interest on loan	0.41	0.00	0.00	0.00	0.00
	TOTAL LOAN					
	Gross loan - Opening	57571	57571	57571	57571	57571
	Cumulative repayments of Loans upto previous year	47212	52171	56671	56671	56671
	Net loan - Opening	10359	5400	900	900	900
	Increase/ Decrease due to FERV	0	0	0	0	0
	Increase/ Decrease due to ACE	0	0	0	0	0
	Total	10359	5400	900	900	900
	Repayments of Loans during the year	4800	4500	0	0	0
	Net loan - Closing	5400	900	900	900	900
	Average Net Loan	7879	3150	900	900	900
	Rate of Interest on Loan	**7.2277%**	**6.8572%**	**8.3467%**	**7.7244%**	**7.7244%**
	Interest on loan	570	216	75	70	70

Computation of Energy Charges

Form-15B

ADDITIONAL FORM

Name of the Company	**NTPC Limited**
Name of the Power Station	**Talcher Super Thermal Power Station -II**

Computation of Energy Charges

1	Rate of Energy Charge from Sec. Fuel Oil/ Alternate Fuel (p/kwh)	$= (Q_s)_n \times P_s$	3.003
2	Heat Contribution from SFO / Alternate Fuel	$= (Qs)_n \times (GCV)_s$ / (H_s)	4.990
3	Heat Contribution from coal	$(H_p)_s = GHR - H_s$	2370.01
4	Specific Primary Fuel Consumption	$(Qp)_n = H_p / (GCV)_p$	0.737
5	Rate of Energy charge from Primary Fuel (p/kwh)	$(REC)_p$	162.443
6	Rate of Energy	$(REC) = ((REC)_s + (REC)_p$ / (1-(AUX))	175.540

		2024-25	2025-26	2026-27	2027-28	2028-29
No of Days in the year	Days	365	365	365	366	365
Sp. Oil consumption	ml/kwh	0.5	0.5	0.5	0.5	0.5
Auxiliary consumption	%	5.75	5.75	5.75	5.75	5.75
Heat Rate	Kcal/Kwh	2,375.00	2,375.00	2,375.00	2,375.00	2375
Computation of Variable Charges						
Variable Charge (Coal)	p/kwh	172.354	172.354	172.354	172.354	172.354
Variable Charge (Oil)	p/kwh	3.186	3.186	3.186	3.186	3.186
Total	p/kwh	175.540	175.540	175.540	175.540	175.540
Price of fuel from Form-15/15A						
Coal Cost	(Rs./MT)	2204.51	2204.51	2204.51	2204.51	2204.51
Oil Cost	(Rs./KL)	60062.30	60062.30	60062.30	60062.30	60062.30
Computation of Fuel Expenses for Calculation of IWC:						
ESO in a year	(MUs)	14035.71	14035.71	14035.71	14074.16	14035.710
ESO for 40 days	(MUs)	1538.160	1538.160	1538.16	1538.16	1538.160
Cost of coal for 40 Days	(Rs. Lakh)	26510.73	26510.73	26510.73	26510.73	26510.73
Cost of oil for 2 months	(Rs. Lakh)	745.37	745.37	745.37	747.42	745.37
Energy Expenses for 45 day	(Rs. Lakh)	30375.94	30375.94	30375.94	30375.94	30375.94

Coal		April '23	May'23	June'23	July'23	Aug'23	Sep'23	Oct'23	Nov'23	Dec'23	Jan'24	Feb'24	Mar'24	Wtd. Avg.
Wtd. Avg. Price of Coal	Rs./MT	2183.45	2095.47	2501.89	2634.23	2886.89	2155.15	2203.38	2023.84	1929.82	1927.29	1890.11	2022.33	**2204.51**
Wtd. Avg. GCV of Coal as received	kCal/Kg	3287	3232	3309	3205	3113	3164	3346	3490	3437	3433	3345	3255	**3,301.33**
Wtd. Avg. GCV of Coal as received after adjustement of 85 kcal/kg	kCal/Kg	3202	3147	3224	3120	3028	3079	3261	3405	3352	3348	3260	3170	**3,216.33**
Secondary Oil														
Wtd. Avg. Price of Secondary Fuel	Rs/KL	60062.27	60062.27	60062.27	60062.27	60062.27	60062.27	60062.27	60062.27	60062.27	60062.27	60062.44	60062.4	**60,062.30**
Wtd. Avg. GCV of Secondary Fuel	kCal/L	9995.00	9995.00	9995.00	9995.00	9995.00	9995.00	9995.00	9995.00	9995.00	9995.00	9899	9899.00	**9,979.00**

Details of Source wise Fuel for Computation of Energy Charges

Name of the Company :		**NTPC Limited**				
Name of the Power Station :		**Talcher Super Thermal Power Sation (Stage - II)**				
			Apr-23		**May-23**	
S. No.	**Month**	**Unit**	**Domestic (Other Sources)**	**Imported**	**Domestic (Other Sources)**	**Imported**
1	Opening quantity of coal	(MT)	578097.26	0.00	278429.4	0
2	Value of stock	(Rs)	1183240583	0.00	607340916.9	0
3	Quantity of Coal/Lignite supplied by Coal/Lignite Company	(MT)	1233862.54	223.4	1434983.45	11008.4
4	Adjustment (+/-) in quantity supplied made by Coal/Lignite Company	(MT)	-325.13	0.00	-523.03	0
5	Coal supplied by Coal/Lignite Company (3+/-4)	(MT)	1233537.41	223.40	1434460.42	11008.4
6	Normative Transit & Handling Losses (For coal/ Lignite based projects)	(MT)	6731.27	0.45	7981.76	22.02
7	Net coal / Lignite Supplied (5-6)	(MT)	**12,26,806.14**	**222.95**	**14,26,478.66**	**10,986.38**
8	Amount charged by the Coal /Lignite Company	(Rs.)	2,13,06,62,352.68	38,88,167.21	2,49,96,59,466.00	14,77,61,393.93
9	Adjustment (+/-) in amount charged made by Coal/Lignite Company	(Rs.)	45,64,85,595.89		14,44,66,513.99	-16,63,509.99
10	Handling Sampling and such other similar charges	(Rs.)	28,35,412.84	0.00	5,18,52,554.24	
11	**Total amount Charged (8+9+10)**	**(Rs.)**	**2,58,99,83,361.41**	**38,88,167.21**	**2,69,59,78,534.23**	**14,60,97,883.94**
12	Transportation charges by rail/ship/road transport	(Rs.)	13,70,87,780.95		16,42,07,754.99	
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)	0.00	0.00		0.00
14	Demurrage Charges, if any	(Rs.)	84,561.95	0.00	59,268.00	0.00
15	Cost of diesel in transporting coal through MGR system, if applicable	(Rs.)	2,68,26,754.07	0.00	2,91,69,053.61	
16	Total Transportation Charges (12+-13-14+15)	(	16,38,29,973.07	0.00	19,33,17,540.60	0.00
17	**Total amount Charged for coal/lignite supplied including Transportation (11+16)**	**(Rs.)**	**2,75,38,13,334.48**	**38,88,167.21**	**2,88,92,96,074.83**	**14,60,97,883.94**
18	Landed cost of coal/ Lignite (2+17)/(1+7)	Rs./ MT	**2,181.31**	**17,439.64**	**2,050.92**	**13,298.09**
19	Blending Ratio		99.986%	0.014%	99.604%	0.396%
20	**Weighted average cost of coal or lignite(including Biomass)**	Rs./ MT		**2183.45**		**2095.47**
20a	**Weighted average cost of coal or lignite(excluding Biomass)**	Rs./ MT		**2183.45**		**2095.47**
21	GCV of domestic coal of the opening coal stock as per Bill of coal company	(kCal /Kg)	3,757.00		3750.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal /Kg)	3747		3823.00	
23	GCV of Imported coal of the opening coal stock as per Bill of coal company	(kCal /Kg)		0		5948.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal /Kg)		5948.00		5922.00
25	Weighted average GCV of coal/ Lignite as Billed (including Biomass)	(kCal /Kg)		**3750.00**	**3819.00**	
25a	Weighted average GCV of coal/ Lignite as Billed (excluding Biomass)	(kCal /Kg)		**3750.00**	**3819.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal /Kg)	3305.00		3287.00	
27	GCV of Domestic Coal Supplied / Biomass as received at Station	(kCal /Kg)	3279.00		3213.00	
28	GCV of Imported Coal of the opening stock as received at Station	(kCal /Kg)		0.00		4947.00
29	GCV of Imported Coal supplied as received at Station	(kCal /Kg)		4947.00		4874.00
30	Weighted average GCV of coal as Received (including Biomass)	(kCal /Kg)	**3287.00**		**3232.00**	
30a	Weighted average GCV of coal as Received (excluding Biomass)	(kCal /Kg)	**3287.00**		**3232.00**	

Note: Form 15/15A for the FY 2023-24 is attached as Annexure A/10

Jun-23		Jul-23		Aug-23	
Domestic (Other Sources)	Imported	Domestic (Other Sources)	Imported	Domestic (Other Sources)	Imported
142957.06	4686.38	263772.72	26237.82	379172.98	25073.28
293194199	62319931.83	556469069.26	342533156.62	770639489.60	325774711.77
1320433.62	65883.2	1294409.93	67570.60	1277748.79	63439.00
-437.08	0	-472.76	0.00	0.00	0.00
1319996.54	65883.2	1293937.17	67570.60	1277748.79	63439.00
7153.87	131.77	6490.91	135.14	6579.65	126.88
13,12,842.67	**65,751.43**	**12,87,446.26**	**67,435.46**	**12,71,169.14**	**63,312.12**
2,26,29,88,898.89	87,34,27,491.08	2,21,71,65,118.69	87,45,54,889.21	2,18,80,14,351.14	80,16,28,068.80
18,42,37,565.00	-1,61,85,867.82	20,78,10,860.99		24,50,00,000.00	39,42,798.00
15,70,66,143.59		3,74,86,341.07		2,33,20,743.29	
2,60,42,92,607.48	**85,72,41,623.26**	**2,46,24,62,320.75**	**87,45,54,889.21**	**2,45,63,35,094.43**	**80,55,70,866.80**
14,33,68,241.00		12,22,29,692.74		13,07,25,046.76	
	0.00				
66,483.00	0.00	0.00		36542.00	
3,04,43,841.44	0.00	1,15,71,654.30		2,18,74,481.83	
17,37,45,599.44	0.00	13,38,01,347.04	0.00	15,25,62,986.59	0.00
2,77,80,38,206.92	**85,72,41,623.26**	**2,59,62,63,667.79**	**87,45,54,889.21**	**2,60,88,98,081.02**	**80,55,70,866.80**
2,109.65	**13,054.94**	**2,032.42**	**12,992.91**	**2,047.78**	**12,800.14**
96.416%	3.584%	94.509%	5.491%	92.196%	7.804%
	2501.89		**2634.23**		**2886.89**
	2501.89		**2634.23**		**2886.89**
3811.00		3733.00		3516.00	
3724.00		3734.00		3517.00	
	5922.00		5950.00		5877.00
	5952.00		5905.00		5873.00
3812.00		**3854.00**			**3701.00**
3812.00		**3854.00**			**3701.00**
3225.00		3249.00		3084.00	
3252.00		3075.00		2918.00	
	4874.00		4923.00		4937.00
	4926.00		4937.00		4973.00
3309.00		**3205.00**		**3113.00**	
3309.00		**3205.00**		**3113.00**	

Sep-23		Oct-23		Nov-23	
Domestic (Other Sources)	Imported	Domestic (Other Sources)	Imported	Domestic (Other Sources)	Imported
604751.12	2643.40	514375.98	3958.18	314255.41	0.00
1238397232.64	33835867.77	999341171.55	50809949.93	674319468.38	0.00
1195525.79	26568.92	1345957.26	7747.99	1513482.74	0.00
-633.70	0.00	0.00	0.00	-214.38	0.00
1194892.09	26568.92	1345957.26	7747.99	1513268.36	0.00
6160.23	53.14	7171.83	15.50	8313.31	0.00
11,88,731.86	**26,515.78**	**13,38,785.43**	**7,732.49**	**15,04,955.05**	**-**
2,04,16,20,925.00	34,04,71,636.15	2,29,15,16,082.65	10,52,01,485.00	2,60,08,70,073.95	0.00
-4,59,19,283.00		50,52,42,926.75	-4,41,70,058.00	15,00,00,000.00	0.00
11,53,07,964.72		1,31,49,985.57		3,78,59,262.22	0.00
2,11,10,09,606.72	**34,04,71,636.15**	**2,80,99,08,994.97**	**6,10,31,427.00**	**2,78,87,29,336.17**	0.00
11,68,19,527.95		14,42,81,353.85		19,10,02,802.20	0.00
					0.00
42681.00		0.00		0.00	0.00
1,82,35,984.31		2,29,24,479.11		2,77,30,239.52	0.00
13,50,12,831.26	0.00	16,72,05,832.96	0.00	21,87,33,041.72	0.00
2,24,60,22,437.98	**34,04,71,636.15**	**2,97,71,14,827.93**	**6,10,31,427.00**	**3,00,74,62,377.89**	**-**
1,942.82	**12,836.70**	**2,145.77**	**9,566.72**	**2,023.84**	**0**
98.051%	1.949%	99.224%	0.776%	100.000%	0.000%
	2155.15		**2203.38**		**2023.84**
	2155.15		**2203.38**		**2023.84**
3517.00		3512.00		3508.00	
3510.00		3507.00		3544.00	
	5874.00		5918.00		5950.00
	5922.00		5966.00		0.00
	3559.00		**3527.00**		**3538.00**
	3559.00		**3527.00**		**3538.00**
2956.00		3128.00		3333.00	
3216.00		3412.00		3523.00	
	4963.00		4994.00		4998.00
	4994.00		5000.00		0.00
3164.00		**3346.00**		**3490.00**	
3164.00		**3346.00**		**3490.00**	

Dec-23		Jan-24		Feb-24		Mar-24	
Domestic (Other Sources)	Imported	Domestic (Other Sources)	Imported	Domestic (Other Sources)	Imported	Domestic (Other Sources)	Imported
416416.46	0.00	563394.95	0.00	710984.21	0.00	759455.41	460.28
842758216.71	0.00	1087249806.71	0.00	1370272512.32	0.00	1435457491.45	5916513.00
1639739.22	0.00	1418642.56	0.00	1354494.50	461.20	1445228.76	
-212.08	0.00	0.00	0.00			-1822.21	
1639527.14	0.00	1418642.56	0.00	1354494.50	461.20	1443406.55	0.00
9334.65	0.00	8411.30	0.00	7343.31	0.92	7436.78	0.00
16,30,192.49	**-**	**14,10,231.26**	0.00	**13,47,151.19**	**460.28**	**14,35,969.77**	**-**
2,82,38,68,909.00		2447772679.80	0.00	2330497245.84	5916513.00	2607376486.84	0.00
		0.00	0.00	0.00	0.00	-3709203.82	0.00
8,87,44,775.58		66306337.99	0.00	45347960.81	0.00	212261919.01	0.00
2,91,26,13,684.58	**-**	**2,51,40,79,017.79**	0.00	**2,37,58,45,206.65**	**59,16,513.00**	**2,81,59,29,202.03**	**-**
16,53,84,809.00		202420988.00	0.00	143993022.00	0.00	155443897.50	0.00
		0.00	0.00	0.00	0.00	0.00	0.00
-9578.00		0.00	0.00	0.00	0.00	863910.00	0.00
2,88,15,347.09		0.00	0.00	0.00	0.00	24993049.34	0.00
19,42,09,734.09	0.00	20,24,20,988.00	0.00	14,39,93,022.00	0.00	17,95,73,036.84	0.00
3,10,68,23,418.67	**-**	**2,71,65,00,005.79**	**-**	**2,51,98,38,228.65**	**59,16,513.00**	**2,99,55,02,238.87**	**-**
1,929.82	**-**	**1,927.29**	**-**	**1,890.11**	**12,854.16**	**2,018.27**	**12,854.16**
100.0000%	0.0000%	100.0000%	0.0000%	100.0000%	0.0000%	99.96%	0.04%
1929.82		**1927.29**		**1890.11**		**2022.33**	
1929.82		**1927.29**		**1890.11**		**2022.33**	
3538.00		3553	0	3567	0	3556	0
3557.00		3572	0	3550	0	3566	0
	0.00	0	5950	0	5950	0	5950
	0.00	0	0	0	5950	0	5950
3553.00		**3567**		**3556**		**3563**	
3553.00		**3567**		**3556**		**3563**	
3490.00		3437	0	3433	0	3345	0
3423.00		3432	0	3299	0	3207	0
	0.00	0	4998	0	4998	0	4998
	0.00	0	0	0	4998	0	4998
3437.00		**3433**		**3345**		**3255**	
3437.00		**3433**		**3345**		**3255**	

Details of Secondary Fuel for Computation of Energy Charges

Name of the Company :	**NTPC LIMITED**
Name of the Power Station :	**Talcher Super Thermal Power Sation (Stage - II)**

Sl.No.	Month	Unit	Apr-23		May-23		Jun
			HFO	LDO	HFO	LDO	HFO
1	Opening Stock of Oil	KL	2931.07	4706.28	2931.07	4605.28	2931.07
2	Value of Opening Stock	(Rs)	17,60,46,912.48	39,38,14,834.97	17,60,46,912.48	38,53,63,298.23	17,60,46,912.48
3	Quantity of Oil supplied by Oil Company	KL	0	0	0	0.00	0
4	Adjustment(+/-) in quantity supplied made by Oil Company	KL	0	0	0	0.00	0
5	Oil supplied by Oil Company (3+4)	KL	0	0	0	0.00	0
6	Normative Transit & Handling Losses	KL	0	0	0	0.00	0
7	Net Oil Supplied (5-6)	KL	0	0	0	0.00	0
8	Amount charged by the Oil Company	(Rs)	0	0	0	0.00	0
9	Adjustment(+/-) in amount charged made by Oil Company	(Rs)	0	0	0	0.00	0
10	Handling, Sampling and such other similar charges		0	0	0	0.00	0
11	Total amount charged (8+9+10)	(Rs)	0	0	0	0.00	0
12	Transportation charges by rail / ship / road transport	(Rs)	0	0	0	0.00	0
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs)	0	0	0	0.00	0
14	Demurrage Charges, if any	(Rs)	0	0	0	0.00	0
15	Total Transportation Charges (12+13+14+15)	(Rs)	0	0	0	0.00	0
16	Other Charges		0	0	0	0.00	0
17	Total amount Charged for fuel supplied including Transportation (11+15+16)	(Rs)	0	0.00	0	0.00	0
18	Weighted average cost of Oil	Rs/KL	60062.27	83678.58	60062.27	83678.58	60062.27
19	Blending Ratio(Quantity)		0.00	3.00	0.00	46	0.00
20	Weighted Average Cost of Secondary Fuel/ For the month	Rs/KL	83678.58		83678.58		8367
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Comp	Kcal/KL	9995.00	9902.00	9995.00	9902.00	9995
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	0	0.00	NA	NA	NA
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Comp	Kcal/KL	NA	NA	NA	NA	NA
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	NA	NA	NA	NA	NA
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	9902		9902		99
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	9995.00	9902.00	9995.00	9902.00	9995.00
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	0	0	0	0	0
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	NA	NA	NA	NA	NA
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	NA	NA	NA	NA	NA
30	Weighted average GCV of Secondary Fuel/ as Received	Kcal/KL	9902		9902		99

ı-23	**Jul-23**		**Aug-23**		**Sep-23**		**Oct-23**		**Nov-23**	
LDO	**HFO**	**LDO**	**HFO**	**LDO**	**HFO**	**LDO**	**HFO**	**LDO**	**HFO**	**LDO**
3909.28	2931.07	3840.28	2040.07	3488.28	2040.07	2793.28	1187.07	5754.91	1187.07	5589.91
32,71,23,005.44	17,60,46,912.48	321349183.3	122531425.5	291894322.6	122531425.5	233737708.39	71298304.93	497509331.51	71298304.93	483245157.15
0.00	0	0	0	0	0	2970.63	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		2970.63	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		2970.63	0	0	0	0
0.00	0	0	0	0		264549669	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		264549669	0	0	0	0
0.00	0	0	0	0	0	0	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		0	0	0	0	0
0.00	0	0	0	0		264549669	0	0	0	0
83678.58	60062.27	83678.58	60062.27	83678.58	60062.27	86449.54	60062.27	86449.54	60062.27	86449.54
5.00	891	20	0	163	853	5	0	45	0	4
78.58	60580.74		83678.58		60216.05		86449.54		86449.54	
9902	9995	9902	9995	9902	9995	9902	9995	9899	9995	9899
NA	0	0	0	0	0	9987	0	0	0	0
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
)02	9902		9902		9994		9899		9899	
9894.00	9995	9902	9995	9902	9995	9902	9995	9899	9995	9899
0	0	0	0	0		9987	0	0	0	0
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
)02	9993.00		9902		9994		9899		9899	

Dec-23		**Jan-24**		**Feb-24**		**Mar-24**	
HFO	**LDO**	**HFO**	**LDO**	**HFO**	**LDO**	**HFO**	**LDO**
1187.07	5367.91	1187.07	5047.91	1067.07	5029.91	0	4905.91
71298304.93	464053358.9	71298304.93	436389505.59	64090831.94	434833413.8		424113670.68
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
0	0	0	0				
60062.27	86449.54	60062.27	86449.54	60062.44	86449.54	60062.44	86449.54
0	147	120	0	0	1		1
86449.54		60062.27		86449.54		86449.54	
9995	9899	9995	9899				
0	0	0	0				
NA	NA	NA	NA				
NA	NA	NA	NA				
9899		9899					
9995	9899	9995	9899				
0	0	0	0	9899	9995	9899	9899
NA	NA	NA	NA				
NA	NA	NA	NA				
9899		9995		9899		9899	

Name of the Petitioner **NTPC Ltd**

Name of the Generating Station **TALCHER SUPER THERMAL POWER STATION, ST-II**

Statement of Capital cost

(To be given for relevant dates and year wise)

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01.04.2024		
		Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening Gross Block Amount as per	6,82,156.07	3,881.16	6,78,274.91
	b) Amount of IDC in A(a) above	173.51		
	c) Amount of FC in A(a) above			
	d) Amount of FERV in A(a) above	-1,266.10		
	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			
	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			
	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			
	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			

PART 1

FORM- M

Name of the Petitioner: NTPC Ltd — Rs. In Lakh

Name of the Generating Station: CHER SUPER THERMAL POWER STATION,

Statement of Capital Woks in Progress

(To be given for relevant dates and year wise)

S. No.	Particulars	As on 01.04.2024		
		Accrual Basis	Un-discharged	Cash Basis
A	a) Opening CWIP as per books	175270.16	24163.17	151106.99
	b) Amount of IDC in A(a) above	5019.50		5019.50
	c) Amount of FC in A(a) above			
	d) Amount of FERV in A(a) above	27.39		27.39
	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			

PART-I
FORM- N

Calculation of Interest on Normative Loan

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**TALCHER SUPER THERMAL POWER STATION, ST-II**

(Amount in Rs Lakh)

S. No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4	5	6	7	8
1	Gross Normative loan – Opening	4,23,219.33	4,24,573.27	4,28,622.07	4,39,962.41	4,48,615.11	4,55,130.71
2	Cumulative repayment of Normative loan up to previous year	4,23,219.33	4,24,573.27	4,28,622.07	4,39,962.41	4,48,615.11	4,55,130.71
3	**Net Normative loan – Opening**	-	-	-	-	-	-
4	Add: Increase due to addition during the year / period	1,779.33	4,048.80	11,340.34	8,652.70	6,515.60	-
5	Less: Decrease due to de-capitalisation during the year / period	-749.87	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	324.48	0.00	0.00	0.00	0.00	0.00
8	Net addition during the period *	**1353.94**	**4048.80**	**11340.34**	**8652.70**	**6515.60**	**0.00**
9	Addition in Loan due to Net add cap *	1353.94	4048.80	11340.34	8652.70	6515.60	0.00
10	Less: Repayment of Loan	2120.95	4048.80	11340.34	8652.70	6515.60	0.00
11	Repayment adjustment on account of de capitalisation	767.01					
12	Repayment adjustment on account of discharges/reversals corresponding to un discharged liabilities deducted as on 1.4.2009						
13	Net Normative loan - Closing	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
14	**Average Normative loan**	-	-	-	-	-	-
15	Weighted average rate of interest	7.564%	7.228%	6.857%	8.347%	7.724%	7.724%
16	**Interest on Loan**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

PART 1
FORM- O

Calculation of Interest on Working Capital

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**TALCHER SUPER THERMAL POWER STATION, ST-II**

(Amount in Rs Lakh)

S. No.	Particulars	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2						
1	Cost of Coal/Lignite	27219.18	26510.73	26510.73	26510.73	26510.73	26510.73
2	Cost of Main Secondary Fuel Oil	747.42	745.37	745.37	745.37	747.42	745.37
3	Fuel Cost						
4	Liquid Fuel Stock						
5	O & M Expenses	5429.04	7139.02	7607.83	8108.44	8646.15	9218.29
6	Maintenance Spares	13029.70	17133.64	18258.80	19460.27	20750.75	22123.90
7	Receivables	46685.96	48679.34	49624.23	50622.62	51573.64	52599.81
8	Total Working Capital	93111.29	100208.10	102746.96	105447.43	108228.68	111198.11
9	Rate of Interest	12.0000	11.9000	11.9000	11.9000	11.9000	11.9000
10	**Interest on Working Capital**	**11173.35**	**11924.76**	**12226.89**	**12548.24**	**12879.21**	**13232.57**

PART 1

Non Tariff Income

Name of the Petitioner: NTPC Ltd

Name of the Generating Station: Talcher STPS-II

Amount in Lakhs

Particulars	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
Income from sale of scrap	Will be submitted at truing up				
Income from rent of land buildings					
Non Tariff Income for Talcher STPS-II					

(Petitioner)

PART 1

Details of Projected Water Charges

Name of the Petitioner:	**NTPC Ltd**
Name of the Generating Station:	Talcher Super Thermal Power Station (Stage-2)

For Fin Year -2019-20/2020-21/2021-22/2022-23/2023-24

S. No.	Details of Water charges (excluding water cess)		Quantity allocated	Actual Drawl	Normative consumption at 100% PLF	Rate specified (as per govt. notification or agreement)	Spillage of water (in percentage)	Amount Claimed (Rs Lakhs)	
	Name of source and quantity: **Up Stream of River Brahmani, 105 CuSec**	Amount (Rs Lakhs)	CuM	(CuM)	(CuM)	Rs/CuM			
1	2024-25	6301.01	62510013	Will be submitted at truing up	61320000	10.08	NA	6301.01	
2	2025-26	6651.07	62510013		61320000	10.64		6651.07	
3	2026-27	7001.12	62510013		61320000	11.20		7001.12	
4	2027-28	7371.32	62681273		61488000	11.76		7371.32	
5	2028-29	7701.23	62510013		61320000	12.32		7701.23	

Note:- The water agreement signed between NTPC and Department of water resources, Govt of Odisha provides for payment to Govt of Odisha on allocation basis or actual basis, whichever is higher. (attached as Annexure A/7)

PART 1

FORM- 20

Name of the Petitioner:	NTPC Ltd														
Name of the Generating Station:	Talcher Super Thermal Power Station (Stage-2)														
	2024-25			2025-26			2026-27			2027-28			2028-29		
Particulars	Unit Rate	No of Units	Amount Claimed (Rs)	Unit Rate	No of Units	Amount Claimed (Rs)	Unit Rate	No of Units	Amount Claimed (Rs)	Unit Rate	No of Units	Amount Claimed (Rs)	Unit Rate	No of Units	Amount Claimed (Rs)
Electricity Duty	Will be submitted at the time of truing up														
Water Cess															
…															

(Petitioner)

Summary of issue involved in the petition

Name of the Company :		**NTPC Limited**	
Name of the Power Station :		**TALCHER STPS-II**	
1	**Petitioner:**	**NTPC Limited**	
2	**Subject**	**DETERMINATION OF TARIFF FOR THE PERIOD 2019-24**	
3	i) Approve tariff of Talcher STPS-II for the tariff period 01.04.2024 to 31.03.2029. ii) Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries. iii) Approve supplementary tariff of Emission Control System for controlling NOx emissions. iv) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries on monthly basis, subject to true up. v) Allow the recovery of pay/wage revision as additional O&M over and above the normative O&M. vi) Pass any other order as it may deem fit in the circumstances mentioned above.		
4	**Respondents: 14**		
	Name of Respondents :		
	AP Eastern Power Distribution Company Limited		
	AP Southern Power Distribution Company Limited		
	AP Central Power Distribution Corporation Limited		
	Telangana State Northern Power Distribution Company Limited		
	Telangana State Southern Power Distribution Company Limited		
	Tamil Nadu Generation & Distribution Corporation Limited		
	Bangalore Electricity Supply Company Limited,		
	Mangalore Electricity Supply Company Limited		
	Chamundeshwari Electricity Supply Corporation Limited		
	Gulbarga Electricity Supply Company Limited		
	Hubli Electricity Supply Company Limited		
	Kerala State Electricity Board Limited		
	Electricity Department, Puducherry		
	Grid Corporation of Orissa Limited		
5	**Project Scope**	**(4x500) MW Super Thermal Power Station**	
	COD	**01.08.2005**	
		(Rs Cr)	
	Claim		
	2024-25		**Refer Form 9A**
	2025-26		
	2026-27		
	2027-28		
	2028-29		
	AFC	**Refer Form-1**	
	Capital cost as on 01.04.2024	**Refer Form-1(1)**	
	NAPAF (Gen)	**85%**	
	Any Specific		

APPENDIX-IA

SUPPLEMENTARY TARIFF FILING FORMS (THERMAL)

FOR DETERMINATION OF SUPPLEMENTARY TARIFF OF

TALCHER SUPER THERMAL POWER STATION-II

(For ECS- DeNOx System for 2024-29 Period)

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

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

PART-I

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

Form No.	Title of Tariff Filing Forms (Thermal)	Tick
FORM-A	Abstract of Capital Cost Estimates	✓
FORM-B	Break-up of Capital Cost for Coal/Lignite based projects	✓
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	NA
FORM –J	Reconciliation of Capitalisation claimed vis-à-vis books of accounts	NA
FORM –K	Statement showing details of items/assets/works claimed under Exclusions	NA
FORM-L	Statement of Capital cost	NA
FORM-M	Statement of Capital Woks in Progress	NA
FORM-N	Calculation of Interest on Normative Loan	✓
FORM-O	Calculation of Interest on Working Capital	✓
FORM-Oi	Additional Form	NA
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	Will be submitted at Truing Up
FORM-T	Summary of issues involved in the petition	✓

PART-I

FORM- 1

Summary of Supplementary Tariff (DeNOx System)

	Name of the Petitioner:	**NTPC Limited**
	Name of the Generating Station:	**TALCHER STPS - II**

Amount in Rs. Lakhs

S. No.	Particulars	Unit	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4			5	6
1.1	Depreciation	Rs Lakh	88.37	88.37	88.37	88.37	88.37
1.2	Interest on Loan	Rs Lakh	66.48	78.58	71.90	65.22	58.53
1.3	Return on Equity	Rs Lakh	73.92	73.92	73.92	73.92	73.92
1.4	Interest on Working Capital	Rs Lakh	5.31	5.59	5.59	5.59	5.61
1.5	O&M Expenses	Rs Lakh	38.71	40.74	42.88	45.13	47.50
	Total	Rs Lakh	**272.78**	**287.19**	**282.65**	**278.22**	**273.92**

(Petitioner)

PART-I
FORM- 1(I)

Name of the Petitioner:	NTPC Limited
Name of the Generating Station:	TALCHER STPS - II

Amount in Rs. Lakhs

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

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2		3			4	5
1	Opening Capital Cost	1616.72	1,673.61	1,673.61	1,673.61	1,673.61	1,673.61
2	Add: Addition during the year / period		-				
3	Less: De-capitalisation during the year / period						
4	Less: Reversal during the year / period						
5	Add: Discharges during the year / period	56.89					
6	Closing Capital Cost	1673.61	1673.61	1673.61	1673.61	1673.61	1673.61
7	**Average Capital Cost**	**1645.16**	**1673.61**	**1673.61**	**1673.61**	**1673.61**	**1673.61**

PART-I
FORM- 1(IIA)

Name of the Petitioner:		NTPC Limited
Name of the Generating Station:		TALCHER STPS - II

Statement showing Return on Equity at Normal Rate

Amount in Rs. Lakhs

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2		3		4		5
	Return on Equity						
1	Gross Opening Equity (Normal)	485.02	502.08	502.08	502.08	502.08	502.08
2	Less: Adjustment in Opening Equity						
3	Adjustment during the year						
4	Net Opening Equity (Normal)	485.02	502.08	502.08	502.08	502.08	502.08
5	Add: Increase in equity due to addition during the year / period	-	-	-	-	-	-
7	Less: Decrease due to De-capitalisation during the year / period	-	-	-	-		-
8	Less: Decrease due to reversal during the year / period	-	-	-	-		-
9	Add: Increase due to discharges during the year / period	17.07	-	-	-	-	-
10	Net closing Equity (Normal)	502.08	502.08	502.08	502.08	502.08	502.08
11	Average Equity (Normal)	493.55	502.08	502.08	502.08	502.08	502.08
12	Rate of ROE (%)	13.632	14.72%	14.72%	14.72%	14.72%	14.72%
13	Total ROE	**67.28**	**73.92**	**73.92**	**73.92**	**73.92**	**73.92**

PART-I

FORM-2

Plant Characteristics

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**TALCHER STPS - II**

Unit(s)/Block(s)/Parameters	**Unit-5**	**Unit-6**
Installed Capacity (MW)	500	500
Environmental Regulation related features	Combustion Modification	
Reagent	NA	
Date of commissioning	25-03-2021	30-12-2020
Auxiliary Energy Consumption for emission control system (Design) (kW)*	NA	

(PETITIONER)

PART-I
FORM-3

Normative parameters considered for supplementary tariff computations

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**TALCHER STPS - II**

(Year Ending March)

Particulars	Unit	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2		4	5	6	7	4
Base Rate of Return on Equity	%	12.00	12.15%	12.15%	12.15%	12.15%	12.15%
Effective Tax Rate	%	17.472	17.47%	17.47%	17.47%	17.47%	17.47%
Rate of ROE		13.632	14.72%	14.72%	14.72%	14.72%	14.72%
Target Availability				85.00%			
In High Demand Season	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Peak Hours	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Off-Peak Hours	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
In Low Demand Season(Off-Peak)	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Peak Hours	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Off-Peak Hours	%	85.00%	85.00%	85.00%	85.00%	85.00%	85.00%
Auxiliary Energy Consumption	%	6.25	6.25	6.25	6.25	6.25	6.25
Auxiliary Energy Consumption for emission control system (Design)	%		Nil				
Rate of Interest on Working Capital	%	12.00	11.90	11.90	11.90	11.90	11.90
O&M Expenses	% of Capital Cost		2				
Maintenance Spares for WC	% of O&M		20.00%				
Receivables for WC	in Days		45				

Units	Commissioned
Unit-5	25-03-2021
Unit-6	30-12-2020

Petitioner

Part-I
FORM-3A
ADDITIONAL FORM

Calculation of O&M Expenses

Name of the Company : NTPC Limited

Name of the Power Station : TALCHER STPS - II

Amount in Rs. Lakhs

S.No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2		3			4	5
1	**O&M expenses under Reg.36(1)(9)**						
1a	Normative O&M expenses- ECS	36.78	38.71	40.74	42.88	45.13	47.50
	Total O&M Expenses	**36.78**	**38.71**	**40.74**	**42.88**	**45.13**	**47.50**

(Petitioner)

PART-I
FORM- 9A
Additional Form

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**			
Name of the Generating Station	**TALCHER STPS - II**			
For Financial Year	**2019-24 Summary**			

Amount in Rs Lakh

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

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited.
Name of the Generating Station	TALCHER STPS - II
For Financial Year	2024-25

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per 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
1	Combustion Modification System Units 5 & 6							
2	**Discharge of liabilities**							
	Total	-	-	-	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	TALCHER STPS - II
For Financial Year	2025-26

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per 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
1	Combustion Modification System Units 5 & 6							
2	**Discharge of liabilities**							
	Total	-	-	-	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	TALCHER STPS - II
For Financial Year	2026-27

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per 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
1	Combustion Modification System for Units 5 & 6							
2	**Discharge of liabilities**							
	Total	-	-	-	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	TALCHER STPS - II
For Financial Year	2027-28

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual)				Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per 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
1	Combustion Modification System Units # 5 & 6							
2	**Discharge of liabilities**							
	Total	-	-	-	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	TALCHER STPS - II
For Financial Year	2028-29

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment		ACE Claimed (Actual)			Regulations under which claimed	Justification	Admitted Cost by the Commission, if any
		Accrual basis as per 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
1	Combustion Modification System Units # 5 & 6							
2	**Discharge of liabilities**							
	Total	-	-	-	-			

PART-I
FORM- 10

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**TALCHER STPS - II**
Date of Commercial Operation	**01.12.1995**

Amount in Rs Lakh

Financial Year (Starting from COD)1	Actual					Admitted				
	2024-25	**2025-26**	**2026-27**	**2027-28**	**2028-29**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1		3	4	5	6	7	8	9	10	11
Amount capitalised in Work/ Equipment										
Financing Details	**Debt Equity ratio is in 70:30**									
Loan-1										
Loan-2										
Loan-3 and so on										
Total Loan2										
Equity Internal Resources										
Others (Pl. specify)										
Total										

Note:
1. Year 1 refers to Financial Year of COD and Year 2, Year 3 etc. are the subsequent financial years respectively.
2. Loan details for meeting the additional capitalisation requirement should be given as per FORM-7 or 8 whichever is relevant.

PART-I
FORM- 12

Statement of Depreciation

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**TALCHER STPS - II**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	4			5	6
	No of Days in the period	366.00	365	365	365	366	365
	No of Days in the year	366.00	365	365	365	366	365
1	Opening Capital Cost	1,616.72	1,673.61	1,673.61	1,673.61	1,673.61	1,673.61
2	Closing Capital Cost	1673.61	1,673.61	1,673.61	1,673.61	1,673.61	1,673.61
3	Average Capital Cost	1,645.16	1,673.61	1,673.61	1,673.61	1,673.61	1,673.61
1a	Cost of IT Equipments & Software included in (1) above*						
2a	Cost of IT Equipments & Software included in (2) above*						
3a	Average Cost of IT Equipments & Software*						
4	Freehold land						
5	Rate of depreciation (%)	5.28%	5.28%	5.28%	5.28%	5.28%	5.28%
6	Depreciable value	1,480.65	1,506.24	1,506.24	1,506.24	1,506.24	1,506.24
8	Remaining depreciable value	1,397.80	1,419.38	1,417.88	1,417.88	1,417.88	1,417.88
9	Depreciation (for the period)	86.86	88.37	88.37	88.37	88.37	88.37
10	Depreciation (annualised)	**86.86**	**88.37**	**88.37**	**88.37**	**88.37**	**88.37**
11	Cumulative depreciation at the end of the period	248.39	88.37	176.73	265.10	353.47	441.83
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	0.00					
12	Net Cumulative depreciation at the end of the period after adjustments	248.39	88.37	176.73	265.10	353.47	441.83

PART-I
FORM-N

Calculation of Interest on Normative Loan

Name of the Company :	NTPC Limited
Name of the Power Station :	TALCHER STPS - II

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2023-24	2024-25	2025-26	2026-27	2027-28	2028-29
1	2	3	3	4	5	6	7
1	Gross Normative loan – Opening	1,131.70	1,171.52	1,171.52	1,171.52	1,171.52	1,171.52
2	Cumulative repayment of Normative loan up to previous year	161.52	248.39	88.37	176.73	265.10	353.47
3	**Net Normative loan – Opening**	970.18	923.14	1,083.16	994.79	906.42	818.06
4	Add: Increase due to addition during the year / period		-	-	-	-	-
5	Less: Decrease due to de-capitalisation during the year / period		-	-	-	-	-
6	Less: Decrease due to reversal during the year / period		-	-	-	-	-
7	Add: Increase due to discharges during the year / period	39.82	-	-	-	-	-
8	Less: Repayment of Loan	86.86	88.37	88.37	88.37	88.37	88.37
9	**Net Normative loan - Closing**	923.14	834.77	994.79	906.42	818.06	729.69
10	**Average Normative loan**	946.66	878.95	1,038.97	950.61	862.24	773.88
11	Weighted average rate of interest %	7.5637	7.5637	7.5637	7.5637	7.5637	7.5637
12	**Interest on Loan**	**71.60**	**66.48**	**78.58**	**71.90**	**65.22**	**58.53**

PART 1
FORM- O

Calculation of Interest on Working Capital

Name of the Company :			**NTPC Limited**					
Name of the Power Station :			**TALCHER STPS - II**					
								(Amount in Rs Lakh)
S. No.	**Particulars**		**Existing 2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**	**2028-29**
1	**2**			**4**	**5**	**6**	**7**	**8**
	No of days		**366**	365	365	365	366	365
1	Cost of Limestone/Reagent toward stock	**20 days**	NA	NA				
2	Cost of Limestone/Reagent toward generation	**30 days**						
3	Receivables	**45 days**	32.92	33.63	35.41	34.85	34.21	33.68
4	O & M Expenses	**1 month**	3.06	3.23	3.39	3.57	3.76	3.96
5	Maintenance Spares	**@20%**	7.36	7.74	8.15	8.58	9.03	9.50
6	Total Working Capital	**Rs. Lakh**	43.34	44.60	46.95	47.00	46.99	47.14
7	Rate of Interest	**%**	12.00%	11.90%	11.90%	11.90%	11.90%	11.90%
8	**Interest on Working Capital**	**Rs. Lakh**	**5.20**	**5.31**	**5.59**	**5.59**	**5.59**	**5.61**

PART 1
FORM-T

Summary of issue involved in the petition

Name of the Company :		**NTPC Limited**
Name of the Power Station :		**TALCHER STPS - II**
1	**Petitioner:**	**NTPC Ltd**
2	**Subject**	**Determination of Supplementary Tariff (for DeNOx System) for 2024-29 period**
3	**Prayer:** i)Approve Supplementary Tariff of Talcher Stage-II for the tariff period from the date of capitalization of the DeNOx scheme till 31.03.2024. ii) Allow the Petitioner to bill provisional supplementary tariff in the instant station till the Supplementary tariff is finally determined & approved by the Hon'ble Commission to mitigate the future interest burden. iii)Pass any other order as it may deem fit in the circumstances mentioned above.	
4	**Respondents**	
	Name of Respondents	
	AP Eastern Power Distribution Company Limited	
	AP Southern Power Distribution Company Limited	
	Telangana State Northern Power Distribution Company Limited	
	Telangana State Southern Power Distribution Company Limited	
	Tamil Nadu Generation & Distribution Corporation Limited	
	Bangalore Electricity Supply Company Limited,	
	Mangalore Electricity Supply Company Limited	
	Chamundeshwari Electricity Supply Corporation Limited	
	Gulbarga Electricity Supply Company Limited	
	Hubli Electricity Supply Company Limited	
	Kerala State Electricity Board Limited	
	Electricity Department, Puducherry	
	Grid Corporation of Orissa Limited	
	AP Central Power Distribution Corporation Limited	
5	**Project Scope**	
	Cost	**Refer Form 9A**
	Commissioning	
	Claim	**Refer Form I**
	AFC (2023-24)	**Refer Form I**
	Capital cost	**Refer Form I(I)**
	Initial spare	**-**
	NAPAF (Gen)	**85%**
	Any Specific	**-**

(Petitioner)

ANNEX - IX

ANNEXURE - C

Tel : 0674-2564033
FAX : 0674-2564033/2564573
EPABX : 2561909/2562847
E-mail: paribesh@dataone.in
Website: www.spcbboard.org

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit – VIII
Bhubaneswar – 751 012, INDIA

CONSENT ORDER

Speed Post

No. 613 / IND-I-CON-105 Dt. 13.01.2012

CONSENT ORDER NO. 460
Sub : Consent for discharge of sewage and trade effluent under section 25/26 of Water(P&CP) Act, 1974 and for existing/new operation of the plant under section 21 of Air(P&CP) Act, 1981.

Ref : Your application No.2501/EMG/1061, dtd.29.11.2010.

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry M/s. Talcher Super Thermal Power Station, NTPC Limited
Name of the Occupier & Designation Mr.R. Venkateswaran, Executive Director
Address:- At-Kaniha, Po- Deopsikha, Dist-Angul-769 147

This consent order is valid for the period up to 31.03.2012.

This consent order is valid for the product quantity, specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

A. Details of Products Manufactured

Sl.No.	Product	Quantity
01	Electricity (6X500 MW)	3,000 MW

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B. Discharge permitted through the following outlet subject to the standard

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KLD or KL/hr	Pre-scribed Standard				
01.	Industrial drain effluent	To be recycled completely						
02.	Seepage and overflow effluent of ash pond	To be recycled completely						
03	Domestic water	Used for horticulture and plantation after treatment in STP						

C. Emission permitted through the following stack subject to the prescribed standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission (m^3/sec)	Prescribed Standard		
				PM	SO_2	NO_x
1	Stack attached to ESPs of Unit-1 &2	275	683	100 mg/Nm^3 for all stacks		
2	Stack attached to ESPs of Unit-3 & 4	275	574			
3	Stack attached to ESPs of Unit-5 & 6	275	574			

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A [illegible]

11. The [illegible]

12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the people in the surrounding areas as a result of discharge of sewage or trade effluent if any.

13. Proper house keeping shall be maintained by a dedicated team.

14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of those persons with their contact telephone numbers shall be intimated to the concerned Regional Officer and Head Office of the Board and in case of any change in the name it shall be reported to the Board immediately.

F. **SPECIAL CONDITIONS- (Air Pollution Control)**

1. The unit shall comply with all the commitments made during the technical presentation on 19/12/2011 at SPCB, Odisha Bhubaneswar.
2. The unit shall comply with all the conditions stipulated by Board vide Board's letter No.15615, dt. 19/09/2011.
3. The unit shall comply with the conditions imposed in the action plan Prepared by Board for abatement of pollution in the critically polluted industrial clusters of Angul-Talcher area.
4. Steps shall be taken to maintain the particulate matter emission within the prescribed standard of 100 mg/Nm³ for all the ESP stacks and take steps to achieve an emission standard of 50 mg/Nm³ as per CEPI action plan.
5. The up-gradation of existing ammonia dosing system of stage-I units and up-gradation of the ESP controllers of stage-I units shall be completed by March 2012.
6. The unit shall separate the hoppers of the boiler economiser and air pre-heater to reduce the emission level from the boilers of stage-I shall be completed by December 2012.
7. The unit shall complete the installation of ammonia dosing system in unit-3 & 4 of stage-II by January 2012.
8. The industry shall install continuous online monitoring at all major stacks to measure gases and particulate matter and AAQ monitoring system (at least 4 stations) of USEPA approved technique for parameters like PM_{10}, $PM_{2.5}$, SO_2, NOx, CO etc. and install digital display system at main gate for public information by March 2012.
9. The unit shall install data logger at all online monitoring stations supported with multi-port connectivity for transmission of real time data of stack monitoring and AAQ

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monitoring stations through GPRS modem/ link to the server of SPCB, Bhubaneswar in consultation with Board by March 2012.

10. All air pollution control devices shall be operated and maintained properly so that, the particulate matter emission from stack attached to ESPs of the Boiler shall not exceed 100 mg/Nm^3.

11. Air pollution control measures installed at different potential dust generating points shall be operated continuously and effectively to control fugitive dust emission.

12. The flyash shall be pneumatically conveyed to a silo. The unit shall provide adequate dust extraction system to control dust emission in the transfer points for collection of ash to silo.

13. The industry shall provide water sprinkling arrangement (fixed type) to prevent fugitive emission at dry surface of ash disposal area.

14. Adequate dust extraction system such as cyclone/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.

15. All raw material, product and waste material shall be transferred through covered vehicles without any spillage or leakages on the way, in case any accidental spillage on the road, waste shall be lifted by the industry and suitably disposed off and to be lifted by the industry and suitably disposed off in designated solid waste dumping area.

16. Ambient air quality shall conform to the National Ambient Air Quality standards as prescribed under E.P. Rules, 1986.

17. The unit shall submit fly ash utilization status to the Board annually to the Board and shall comply to the provisions of fly ash Notification No.SO.2804(E),dt. 03/11/2009 of MOEF, Govt. of India.

18. All Pollution control equipment may be provided with separate energy meter and totalizer for continuous recording of power consumption. The amperage of the ID fan may also be recorded continuously. Non-functioning of Pollution control equipment should be recorded in the same logbook along with reasons for not running the Pollution Control Equipment.

19. Unloading of coal by trucks or wagons should be carried out with proper care to minimize generation of fugitive dust. Coal shall be made to moist by sprinkling water while unloading to prevent generation of fugitive dust.

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20. Good house keeping practices shall be followed to improve the work environment. All roads and shop floors shall be cleaned regularly.
21. Air compressor, DG set and turbine house should be acoustically designed and should be housed in appropriate acoustic enclosures so that the noise level outside it shall conform to the prescribed norms.
22. The industry shall comply with all the conditions stipulated under Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines.
23. Care shall be taken so that ambient noise level shall conform to the standards prescribed under E(P) Act ,1986.
24. Periodical maintenance of all equipment, plant piping (including pollution control system) shall be carried out including calibration and testing.
25. A separate environmental management cell shall be formed with adequate laboratory facility and suitably qualified people to carry out various functions relating to environmental management effectively
26. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
27. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.

F-2 SPECIAL CONDITIONS- (Water Pollution Control)

1. The unit shall expedite the dyke raising work of Lagoon-1 of stage-I and make it ready for service by February 2012.
2. The unit shall expedite the dyke raising work of Lagoon-2 of stage-II and make it ready for service by March 2012.
3. The unit shall submit the ash dykes stability study report to Board by immediately.

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4. Replacement of ash slurry pipeline by cast-basalt pipes of series C of Stage –I shall be completed by December 2012 and series B, C, E & F of Stage –II shall be completed by 2013.
5. The height of the earthen bunds on both sides of the entire pipe line corridor shall be appropriately fixed to ensure no spillage of ash slurry beyond the corridor way. Appropriate provision shall be made to collect the slurry, if any leaked/discharged from the pipe line and lift the accumulated ash at once.
6. The seepage from all the toe drains of entire ash pond area shall be systematically collected in settling ponds and re-circulated.
7. Construction of coal settling pit No.2 shall be completed and put into operation immediately.
8. Study of ash content in Tikira river bed shall be completed by 31/3/2012 and the unit shall start physical work at the earliest.
9. The slurry pipe lines shall be planned and laid suitably in the lagoon of ash pond, so that the ash is distributed uniformly, throughout it's surface area.
10. Complete removal of deposited ash from the overflow lagoon of ash pond system shall be completed by May 2012.
11. The unit shall complete the construction of new pump house having three pumps of capacity 300 m^3/hr each by 30/6/2012 for complete recycling of effluent of new coal settling pits.
12. The unit shall take all necessary steps for complete recycling the ash pond overflow effluent of both stage-I and stage-II to ensure complete use of the ash pond effluent.
13. The unit shall conduct a detailed surface run off study of the whole plant and submit the report to the Board by 30/11/2012.
14. The unit shall complete the ash dyke stability study and submit the report to the Board by December 2011.
15. The unit shall expedite all the study and survey required for transportation of flyash to the mine void at Jagannath quarry so that physical work can be started by Dec, 2012.

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16. The unit shall constitute a team consisting of experienced personnel of adequate strength to look out the operation and maintenance of ash handling system i.e, regular rotation of ash slurry pipelines/ installation of new pipe lines, garlanding of ash slurry pipe lines all around the ash dyke for ensuring uniform discharge/distribution of slurry all over the pond area.
17. The unit shall submit a report on feasibility of transportation of ash in high concentrated slurry disposal mode to ash pond area by June, 2012.
18. Adequate numbers of piezometers shall be installed at suitable locations to examine the saturation level inside the dyke sections.
19. Under no circumstances there shall be any discharge of effluent to outside the factory premises.
20. The blow down of power plant shall meet the following standards before it is discharged to the common monitoring basin and shall be reused for ash handling, dust suppression and green belt.

<u>Boiler blow down</u>		
Suspended solids	-	100.0 mg/l(Max)
Oil & Grease	-	20.0 mg/l(Max)
Copper (Total)	-	1.0 mg/l(Max)
Iron (Total)	-	1.0 mg/l(Max)
<u>Cooling Tower Blow down</u>		
Free available Chlorine	-	0.5 mg/l(Max)
Zinc	-	1.0 mg/l(Max)
Chromium (Total)	-	2.0 mg/l(Max)
Phosphate	-	0.2 mg/l(Max)

21. The wastewater generated from leakages, blow downs and DM plant shall be treated individually to meet the prescribed standard of effluent discharge to inland surface water and shall be reused dust suppression, ash handling and green belt purpose inside the factory premises.
22. Oil catch pits shall be provided in oil handling area of power plant for collection of spillage.
23. The storm water drains shall be maintained separately without being mixed up with the industrial effluent or sewage effluent.

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24. The domestic effluent from the plant premises as well as the colony shall be treated in proper sewage treatment plant to meet the prescribed BIS standards (SS-30 mg/l, BOD <20 mg/l) before it is utilized for plantation / gardening.
25. The overflow effluent from the ash ponds as well as the seepage water shall be completely recycled and in no case shall be allowed to be discharged to outside.
26. The proponent shall provide garland drains around coal storage area followed by series of settling tanks to retain the solids, if any, in order to prevent contamination of the surrounding land and water bodies.
27. The unit shall submit fly ash utilization status to the Board annually to the Board and shall comply to the provisions of fly ash Notification No.SO.2804(E),dt. 03/11/2009 of MOEF, Govt. of India.
28. The industry shall comply with all the conditions stipulated under Chairer on Corporate Responsibility for Environmental Protection (CREP) guidelines.
29. The unit shall obtain authorization from the Board under Hazardous Waste (Management Handling& Transboundary Movement) Rules, 2008.
30. The industry shall abide by E(P) Act, 1986 and Rules framed there-under.
31. The industry is required to submit a water balance diagram, affix seperate water meters at the intake points/for different purposes of consumption, furnishes monthly returns in prescribed format every month and make up-to-date payment against the assessment made by the Board.
32. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
33. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/stipulate additional conditions as deemed appropriate.

P.T.O

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The occupier must comply with the conditions stipulated in section A,B,C,D,E and F to keep this consent order valid.

To

The Executive Director
M/s. Talcher Super Thermal Power Stations , NTPC Ltd.
At – Kaniha, PO-Deepsikha,
Dist-Angul 759 147

Member Secretary
State Pollution Control Board, Odisha

Memo No._____ /Dt.

i) Regional Officer, State Pollution Control Board, Angul
ii) District Collector, Angul
iii) D.F.O. Angul
iii) EE, Coss (Head Office)
iv) Consent Register
vi Sr. Env. Scientist (L)

Sr. Env. Engineer (C)
State Pollution Control Board, Odisha

P.T.O.

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Annexure A/2

ANNEX - X

MINUTES OF THE 4th MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS

The 4thMeeting of the re-constituted EAC (Thermal Power) was held on 16thMarch, 2017in the Ministry of Environment, Forest& Climate Change at Teesta Meeting Hall, Vayu Wing, First Floor, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi under the Chairmanship of Dr.Navin Chandra. The following members were present:

1.	Dr.Navin Chandra	-	Chairman
2.	Dr. Narmada Prasad Shukla	-	Member
3.	Shri N. Mohan Karnat	-	Member
4.	Dr.Sharachchandra Lele	-	Member
5.	Shri P. D. Siwal	-	Member (Representative of CEA)
6.	Dr. R. K. Giri	-	Member (Representative of IMD)
7.	Dr. S. Kerketta	-	Member Secretary

Dr. Rajesh P.Gunaga, Dr.S. K. Paliwal (Representative of CPCB) and Professor D. C. Panigrahi (Representative of ISM Dhanbad) could not be present.

Item No.4.0:CONFIRMATION OF THE MINUTES OF THE 3rdEAC MEETING.

The Minutes of the 3rdEAC (Thermal Power) Meeting held on 14th February, 2017 were confirmed.

Item No. 4: CONSIDERATION OF PROJECTS

4.1 Expansion of 2x363.3 MW Gas based Power Project at Palatana, Tehsil Kakraban, Dist. Gomati, Tripura by M/s ONGC Tripura Power Company Limited- reg. consideration for ToR.

(4.1.1) PP submitted online application for grant of ToR on 13.2.2017. Project Proponent along with Environment Consultant M/s ERM India Pvt. Ltd. made presentation and inter-alia submitted the following:

i. Proposed expansion of Combined Cycle Gas Turbine Power Project with a capacity of 2x363.3 MW (Unit-3&4) will be set up at Village Palatana, Tehsil Kakraban, Tripura in the premises of existing power plant 2x363.3 MW (Unit-1&2) which is under operation.

ii. Additional land requirement of approximately 33 acres is required for the proposed expansion project. The total land of 197.15 acres is available at the project site which is inclusive of 33 acres. Thus, no additional land acquisition is involved for the proposed project.Out of 197.15 acres, 193.66 acres is forest land for which diversion approval has already been obtained.

iii. The project site is surrounded by Reserved Forests. Trishna Wildlife Sanctuary is at 20 km South and Sepahijhala Wildlife Sanctuary is at 18 km from the proposed site. The site falls in Seismic Zone V. Design of the proposed structures shall be earthquake resistant.

iv. Water requirement for the proposed project is 18,650 m^3/day which will be sourced from River Ghumti located at 2 km from project site. Government of Tripura allocated for drawl of 125 MLD vide letter dated 12.5.2005.

v. 2.70-2.90 MMSCD natural gas at 85% PLF with calorific value of 8,250 kcal/Sm^3 shall be required for the proposed unit. For Unit-3, Natural gas will be supplied by ONGC from their gas wells at Agartala/Dome, Baramura, Konaban, Sonamura, Tichana, and Gojalia. For Unit-4, Fuel gas may be sourced from either Jubilant fields in Tripura or ONGC's fields in Tripura. Estimated Project Cost is Rs. 4210.74 Crores. Estimated manpower for proposed project is 110 (both permanent and contractual).

(4.1.1) Committee after detailed deliberations, **recommended for *the following additional ToR*** *in addition to the standard TORs (as applicable) at* ***Annexure-A1*** *for undertaking detailed EIA study and preparation of EMP.*

i. *Authenticated map showing project site vis-a-vis location of TrishnaWildlife Sanctuary and Sepahijhala Wildlife Sanctuary along with distance of proposed project from the boundaries of Wildlife Sanctuaries and their associated ESZby Wildlife Department.*

ii. *Bio-diversity and ecology impact assessment study for six months shall be conducted with the involvement of experts specifically familiar with the biota of Tripura/north-east India.*

iii. *Details of composition of gas and quantification of emission details shall be submitted.*

iv. Eco-hydrology study assessing the impact of proposed water withdrawal from River Ghumti on downstream biota, agriculture and domestic users shall be carried out by an Institute of National Repute.

v. Need based assessment study shall be conducted by an Institute of National Reputefor implementing CSR activities.

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4.2 Expansion by addition of 2x660 MW (Stage-II) Unit-5 & 6 Coal based Thermal Power Plant at village Chowki- Motipara, in Chhabra, in Baran Dist., Rajasthan by M/s Rajasthan Rajya Vidyut Utpadan Nigam Ltd.- reg. amendment in EC.

(4.2.1) PP could not attend the meeting. Member Secretary briefed the Committee that PP applied vide their online application dated 6.2.2017 for amendment in condition No.4A(v) of EC dated 23.5.2012. The condition No.4A(v) of the said EC is "*Stack of 275 m height shall be installed and provided with continuous online monitoring equipments for SOx, NOx and $PM_{2.5}$& PM_{10}. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also monitored on periodic basis.*" PP in their application submitted they have approached various vendors such as M/s L&T Ltd., M/s Forbes Marshall, M/s Durag India and M/s Chemtrols Industries Ltd. for continuous online monitoring of $PM_{2.5}$ and PM_{10} from the stack emissions. All the vendors have expressed the technical constraint in monitoring $PM_{2.5}$ and PM_{10} in the stack emissions.

(4.2.2) EAC decided to appraise the proposal. After deliberations, **EAC recommended** for amendment of the said EC condition for monitoring PM emissions as below:

i. Stack of 275 m height shall be installed and provided with continuous online monitoring equipments for SOx, NOx and PM. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also be monitored on periodic basis. Emission monitoring shall be carried out preferably during winter (December to February) and pre-monsoon (March to May) period where impacts will be more prominent and effective.

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activities.Surface and ground water quality along with existing piezometric wells shall be monitored quarterly and the reports shall be submitted to the Ministry annually.

vi. Current state of flyash utilisation shall be incompliance with Flyash Notification and its amendments issued time to time.

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4.7 Disposal of fly ash generated from Talcher Super Thermal Power Station (Stage-I:2x500 MW & Stage-II: 4x500 MW) into abandoned mine voids of Jagannath OPC of Mahanadi Coalfields Limited in Talcher, Dist. Angul, Odisha by M/s NTPC Limited- reg. re-consideration for permission.

(4.7.1)Project Proponent (PP) submitted the online application on 2.1.2017. The proposal for ash filling in Jagannath Opencast Mines generated from Talcher Super Thermal Power Station. M/s Bhushan Steel Ltd. has already been disposing flyash in the same mines for last three years. The proposal was earlier considered by the EAC on 29.4.2015 and deferred as the studies conducted by M/s Bhushan Steel Ltd. regarding leachate tests, radio tracer studies were still under completion. Also, the existing ash pond of M/s NTPC could accommodate flyash for four years at that time. Accordingly, EAC suggested to submit the scientific and engineering plan for backfilling of the mines after consulting National and International Experts for exploring various geo-technical and engineering solutions. Simultaneously, alternate avenues for flyash utilisation shall be explored by the PP.

(4.7.2) PP along with NEERI and CMPDI made presentation inter-alia submitted the following:

i. NTPC Talcher Super Thermal Power Station (TSTPS), Kaniha, Dist. Angul, Odisha has a total power generation installed capacity of 3010 MW. Coal to TSTPS is being supplied by Talcher coalfields (Lingaraj block) of Mahanadi Coalfields Ltd and source of water is Samal Barrage Reservoir on river Brahmani. Coal is transported to NTPC-TSTPS from Lingaraj coal mines of MCL through a 39 km MGR railway transportation system. The station generates approximately 6.5 MTPA of total ash (flyash and bottom ash) and could utilised only 38-43%.

ii. Unutilised ash is being disposed into tow ash disposal areas (Stage-I: 750 acres and Stage-II: 840 acres) located at about 7 km N-W of the plant. Stage-I ash pond is nearly full in capacity and Stage-II ash pond is critical capacity and will last up to 2020.

iii. MCL has allotted Quarry no.8 of Jagannath OCP to NTPC for backfilling ash from TSTPS.

iv. NTPC conducted Hydro-geological studies, characterisation and leachate studies conducted by NEERI.

v. As suggested by EAC, market survey to assess ash utilisation potential for various uses in the vicinity of power plant has been conducted. Analysis of scientific and engineering alternatives for disposal of ash from Talcher STPP has been conducted by CMPDI.

vi. Transportation modes of flyash from the power plant to Jagannath mines have been analysed. Slurry pumping through pipeline is recommended for the distance of approximately 20 km.

vii. Ground water levels have been monitored. The results show that during pre-monsoon season, maximum depth of groundwater is observed at 12.95 metres below ground level (bgl) at Village Ekdal to minimum depth at 2.10 mbgl at village Jagnnathpur. During post monsoon season, maximum depth of groundwater is found at 5.98 m bgl and minimum depth found at 1.21 m bgl at village Deulbara.

(4.7.3)Committee noted that the proposal of NTPC for flyash filling in Quarry no.8 of Jagannath Opencast mine is adjacent to the Quarry no.4 of Jaggannath opencast mine in which M/s Bhushan Steel Ltd has already been disposing flyash for the last three years. The studies conducted by NEERI are conclusive and recommend for flyash disposal in these quarries.

(4.7.4) Committee after detailed deliberations, **recommended for grant of temporary permission for a period of five years** for disposal of flyash subject to the following conditions:

i. A pilot project shall be explored for implementation for Cenosphere extraction from flyash and manufacturing of by-products in consultation with organizations like CSIR, ISM (IIT) Dhanbad.

ii. As recommended by NEERI, Ash characterisation, hydro-geological studies, leachability of trace metals, monitoring of trace elements in the supernatant, pH of the water and the piezometers on a quarterly basis and reports shall be submitted to the Ministry and it's regional office annually.

iii. Radio tracer studies shall be continued once in six months and the findings of the study shall be submitted to the Ministry and its Regional office annually.

iv. Bioaccumulation and bio-magnification tests shall be conducted on surrounding flora and fauna (tree leaves, vegetation, crop yields and cattle population etc) during pre-monsoon and post monsoon to find out any trace metals escaped through groundwater or runoff.

v. Surface water and runoff from the mine void/flyash shall not be let out into the nearby stream/drainage and shall be reused for the ash filling and power plant activities. Surface and ground water quality along with existing piezometric wells shall be monitored quarterly and the reports shall be submitted to the Ministry annually.

vi. Current state of flyash utilisation shall be incompliance with Flyash Notification and its amendments issued time to time.

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4.8 ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR.

(4.8.1) 2x800 MW Coal based Lara Super Thermal Power Project at villages Armuda, Chhapora, Bodajharia, Devalpura, Mahloi, Riyapalli, Lara, Jhilgitar and Kandagarh in TalukPussore, in District Raigarh, in Chhattisgarh by M/s NTPC Ltd. – reg amendment of EC.

(4.8.1.1) Project Proponent (PP) submitted online application on 16.2.2017 for transportation of 7777 MT/day coal through road till November, 2019. The proposal was earlier considered in 2nd Re-constituted EAC meeting held on 20.1.2017 and was rejected as 15,554 MT of coal per day will be transported by 2074 truck trips per day through road network of 115 km. The present proposal is for one unit and the quantity of coal to be transported will be reduced to half.

(4.8.1.2) Project Proponent (PP) along with M/s Min Mec Consultancy Pvt. Ltd made the presentation and, *inter-alia* submitted the following:

i. As per the Hon'ble Supreme Court's order, the coal block was de-allocated on 24.9.2014 and later it was re-allocated on 8.9.2015 which has delayed its production plan of Talaipalli Coal Mine. Coal production is expected to commence by November, 2019.

ii. As the Unit-1:1x800 MW is expected to be commissioned by April, 2017 and the Talaipalli Coal block is expected to start its production by November, 2019, Coal India Limited (CIL) vide their letter dated 2.6.2016, granted Bridge Coal Linkage for the said project and the coal will be sourced from two places i.e.

आर. के. सिंह
R. K. SINGH

विद्युत मंत्री एवं
नवीन और नवीकरणीय ऊर्जा मंत्री
भारत सरकार
Minister of Power and
Minister of New & Renewable Energy
Government of India

DO No 14/01/2022-Th.I

06 NOV 2023

Dear Shri Patnaik,

As you may be aware NTPC, a CPSE under the administrative control of Ministry of Power, has 4610 MW of operational power capacity in the State of Odisha [3010 MW at Talcher Super Thermal Power Station, TSTPS, Angul and 1600 MW at Darlipalli Super Thermal Power Station, DSTPS, Sundargarh]. NTPC is also in the process of development of Talcher Thermal Power Project-TTPP (2x660 MW) Stage-III in Angul district of Odisha.

It has been informed by NTPC that they are facing critical issues at TSTPS and at TTPP, which are creating operational constraints in TSTPS and hindrances in project implementation in TTPP. NTPC has been continuously pursuing these issues with District Administration of Angul and State Government of Odisha at various levels but could not succeed in getting them resolved. The list of issues is enclosed as **Annexure**.

Secretary (Power) vide DO letter dated 26.06.2023 (copy enclosed) has also taken up these issues with Chief Secretary, Government of Odisha. However, the issues are yet to be resolved.

Considering the ever-increasing power demand scenario in our country, may I request intervention at your level for speedy resolution of the issues faced by NTPC at Talcher Thermal Power Project and Talcher Super Thermal Power Station.

With regards,

Yours sincerely,

(R. K. Singh)

Encl: As above

Shri Naveen Patnaik,
Chief Minister of Odisha,
Lok Seva Bhawan, Sachivalaya Marg,
Bhubaneswar, Odisha.

Shram Shakti Bhawan, New Delhi-110 001 Phone : +91-11-23717474, 23710411
Fax : +91-11-23710065, E-mail : raj.ksingh@gov.in

Annexure

List of issues faced by NTPC Ltd at Talcher Thermal Power Project (TTPP) and Talcher Super Thermal Power Station (TSTPS)

I. Closure of Anand Bazar-Jagannathpur Road passing through TTPP

This road, being used by the locals, is passing through the proposed Boiler and TG (Turbine-Generator) area. NTPC has already made a bypass road for the use of the local people, but this road could not be closed for the past 12 months (since award of EPC Contract of the Project to BHEL in Sep'22). Any further delay in resolution of this issue will delay the commissioning schedule of the project.

II. Relocation of bi-weekly Ananda Bazar Haat (market) near TTPP

This is a bi-weekly market located on NTPC land near the entrance gate of TTPP. This haat is a security concern, hinders safe movement of construction material and also poses threat to the safety of general public. Delay in implementation of TTPP will affect the State Government of Odisha, who will be the single major buyer of electricity from this power station when commissioned.

III. TSTPS - Completion of Ash Slurry Pipeline for Mine Void Filling

Ash disposal from this station is very crucial. With lots of persuasion from Ministry of Power and NTPC, one mine void could be received from MCL (CIL subsidiary) to NTPC TSTPS for ash slurry filling. Though NTPC started the laying of this ash slurry pipeline in the month of November'2022 but it could not progress because of resistance by the villagers led by the local MLA.

Delay in resolution of this issue may create a compelling situation of closure of the units of TSTPS because of the ash dyke space limitations and no taker of ash by the cement industries in that remote area.

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EXTRACTS FROM THE MINUTES OF 506TH MEETING OF THE BOARD OF DIRECTORS HELD ON TUESDAY, 30TH NOVEMBER 2021

Item no. 506.2.6 **Revised Investment Approval for Back-filling of Ash from TSTPS, Kaniha Stage-II (4x500MW) into the abandoned Mine Void of Quarry No. 8 of Jagannath OCP through Lean Slurry System as capital addition scheme**

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The Board, after discussion, passed the following resolution:

Resolved that the proposal for revised investment approval for capital addition in respect of Back-filling of Ash from TSTPS, Kaniha Stage-II (4x500MW) into the Mine Void of Quarry No. 8 of Jagannath OCP through Lean Slurry System at an estimated cost of Rs. 325.51 Crore (Works cost including GST of Rs. 297.53 Crore and PMC, Contingency, IDC & Financing charges of Rs. 27.98 Crore), as of 2nd Qtr 2021 price level as per the memorandum submitted before the Board, be and is hereby approved.

*****

Nandini Sarkar

STATE POLLUTION CONTROL BOARD, ODISHA

[Department of Forest, Environment & Climate Change, Govt. of Odisha]
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955
E-mail: paribesh1@ospcboard.org/ Website: www.ospcboard.org

No. 4121 / IND-I-CON-105 Dt. 20-03-2023

CONSENT ORDER

Sub : **Consent to operate under section 21 of Air (P&CP) Act, 1981, under section 25 of Water (P&CP) Act, 1974.**

Ref : Your online application **ID No. 4590338, dtd. 24.12.2022**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry **M/s. Talcher Super Thermal Power Station, NTPC Limited**

Name of the Occupier & Designation **Sri K S Sundaram, Executive Director**

Address **At-Deepsikha, Dist- Angul- 759147**

This consent order is valid for the period from **01.04.2023 to 31.03.2025**

This consent order is valid for the product quantity, specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

A. Details of Products Manufactured

Sl.No.	Product	Quantity
01.	Electricity (Unit-I&II of Stage-I, Unit- III, IV, V, VI of Stage - II)	2x500 MW 4x500 MW

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B. Discharge permitted through the following outlet subject to the standard

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KLD or KL/hr	Pre-scribed Standard
01.	Industrial drain effluent	To be recycled completely		
02.	Seepage and overflow effluent of ash pond	To be recycled completely		
03.	Domestic water	Used for horticulture and plantation after treatment in STP		pH: 6.5-9.0 BOD: less than 30mg/l TSS: less than 100mg/l Fecal Coliform (FC) (most probable number per 100 millilitre, MPN/100ml): less than 1000

C. Emission permitted through the following stack subject to the prescribed standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission (m^3/sec)	Prescribed Standard (mg/Nm^3)			
				PM	SO_2	NO_x	Hg
Emission standards applicable up to 31.12.2024							
1)	Stack attached to ESPs of Unit-1 & 2	275	583	100	--	--	0.03
2)	Stack attached to ESPs of Unit- 3 & 4	275	574	100	--	--	0.03
3)	Stack attached to ESPs of Unit- 5 & 6	275	574	100	--	--	0.03
Emission standards applicable w.e.f. 01.01.2025							
1)	Stack attached to ESPs of Unit-1 & 2	275	583	100	--	600	0.03
2)	Stack attached to ESPs of Unit- 3 & 4	275	574	100	--	600	0.03
3)	Stack attached to ESPs of Unit- 5 & 6	275	574	50	--	450	0.03

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D. Disposal of solid waste permitted in the following manner

Sl. No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site.
1)	Fly Ash	19,600	--	--	--	Utilization as per Fly Ash Notification. Rest to be disposed through lean slurry to own ash ponds and to de-coaled mine void of Quarry No 8, Jagannath OCP of MCL.

E. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / and products / manufacturing process or quantity /quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. . In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during their visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been taped by the consumer for utilization for any purposes whatsoever.
12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:
    a) Industrial cooling, spraying in mine pits or boiler feed,
    b) Domestic purpose
    c) Process
13. The applicant shall display suitable caution board at the face where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.

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18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.
21. The sludge generated from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank of treatment plant.
22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.
23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.
24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.
25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.
27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner to the meet the prescribed standards by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).
28. The stack and ambient monitoring system installed by the applicant shall be opened for inspection to this Board at any time.
29. There shall not be any fugitive or episodal discharge from the premises.
30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.
31. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.
32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax / speed post within 24 hours of its occurence.
33. The industry has to ensure that minimum three varieties of indigenous species of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
34. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as no to cause fugitive emission, dust problems through leaching etc., of any kind.
35. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :
    i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
    ii) Controlled incineration, wherever possible in case of combustible organic material.
    iii) Composting, in case of bio-degradable material.
36. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.
37. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.
38. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
40 Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.
41. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.
42. The industry shall comply to all the conditions stipulated under Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines in a time bound manner as envisaged there in. (if applicable)
43. The industry shall comply to the conditions stipulated in CTE order issued by ODISHA State Pollution Control Board .
44. The industry shall abide by E(P) Act, 1986 and Rules framed there-under
45. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the adequate amount within the period stipulated by the Board the consent order will be revoked without prior notice.
46. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.

P.T.O

GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs 50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).

1. The applicant shall analyse the effluent / emissions and Ambient Air Quality every month through approved laboratory for the parameters indicated in TABLE- 'B', 'C' & 'Part -B' as mentioned in this order and shall furnish the report thereof to the Board on monthly basis.
2. The following information shall be forwarded to the Member Secretary on or before 10th of every month.
   a) Performance / progress of the treatment plant.
   b) Monthly statement of daily discharge of domestic and/or trade effluent.
3. Non-compliance with effluent limitations
a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.
   i) Causes of non-compliance
   ii) A description of the non-compliance discharge including its impact on the receiving waters.
   iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.
   iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and
   v) Steps to be taken by the applicant too prevent the condition of non-compliance.

b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.
c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.
4. Proper housekeeping shall be maintained inside the factory premises including process areas by a dedicated team.
5. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.
6. The industry shall engage dedicated qualified manpower to ensure continuous and effective operation of online stack / Ambient Air Quality / Effluent monitoring stations for maintenance of database, real time data transfer to SPCB server, data analysis and co-ordination with concerned personnel of process units for taking corrective measures in case of non-compliances and to respond to the instructions of SPCB in this matter.
7. All employees of the industry including officers, staff, workers, contract workers involved in operation/maintenance/ supervision of process area, pollution control areas, raw material and waste handling areas shall undergo short term training at least twice in a year in the field of pollution control and environment protection to create awareness and develop green skill. This shall be conducted by 3rd party expert agency and report on the activities along with details and photographs shall be submitted to the Board on annual basis by end of June for previous financial year.
8. ISO auditing reports of the industry in the field of environment shall be submitted to the Board every year on annual basis.
9. The environmental cell shall be established and upgraded effectively to guide, monitor the pollution control and environmental protection activities inside the industries on day to day basis to ensure that the conditions stipulated in the consent to establish/operate order of the SPCB and conditions imposed in EC and provisions of various environmental acts and rules are complied with and the report returns, compliances are submitted to the Board in due time.
10. Adequate numbers of scientific / technical persons having qualification in environmental engineering/ environmental science from recognized institution/ university must be engaged or appointed along with other interdisciplinary qualified persons to effectively implement and monitor different areas of environment management and regulatory compliances including air pollution control, water pollution control, online monitoring, real time data transmission, management of solid waste, hazardous waste, E-waste, plastic waste etc. The Head of the environmental cell should be a senior level official, who will directly report to the plant head to ensure that environmental management is performed effectively to ensure compliance to the environmental norms on priority basis.
11. Energy consumption data of different pollution control devices like ESP/ Bag filter/ Scrubber/ Cyclone/ Gas cleaning plant/ Fume treatment plant/ ETP/STP/Flow meters (treated effluent recycling) shall be collected online on real time centralized platform/ dashboard with data storage facility and generate tamperproof monthly / periodic reports, which shall be analysed by Energy Auditor, certified by Bureau of Energy Efficiency and accordingly the Energy Management / preventive maintenance of Pollution Control equipment shall be adopted. The energy management of process and pollution control devices shall be practiced to record the progressive achievements to minimize energy consumption in order to reduce greenhouse gas emission
12. The post EIA monitoring schedule should be strictly followed for different parameters around the plant for the units is covered under EIA notification. The industry shall also conduct noise level study in the core zone and buffer zone of the industry and submit 6 monthly report to the Board.

P.T.O

F. SPECIAL CONDITIONS

F1. Air Pollution Control

1. Air pollution control measures installed at different potential dust generating points shall be operated continuously and effectively to control fugitive dust emission.
2. All the online continuous stack emission monitoring systems (CEMS) for measurement of particulate matter and gaseous pollutants shall be operated effectively & uninterruptedly and real time monitoring data so generated shall be transmitted directly to RT-DAS server of the Board without passing through any local PC or server.
3. All the online continuous ambient air quality monitoring stations (CAAQMS) shall be operated effectively and uninterruptedly and real time monitoring data so generated shall be transmitted directly to RT-DAS server of the Board without passing through any local PC or server.
4. Online monitoring system for PM, SO_2, NO_X for thermal power plants as per CPCB guideline for OCEMS August, 2018 and Standards prescribed for these parameters by MoEF & CC Dt 7.12.2015 shall be complied.
5. The industry shall ensure tampered proof real time transmission of online monitoring data to the server of CPCB and SPCB and maintain the health of the analyzers and data connectivity through valid AMC.
6. Steps shall be taken for regular monitoring of Mercury (Hg) in the stack of boilers and submit data to the Board.
7. The unit shall strictly abide to confirm the MoEF & CC Notification dtd. 05.09.20222 vide GSR 682(E) regarding extension of timeline for Emission Norms.
8. The unit shall provide low NO_x burners to reduce NO_x emission to keep the level within the prescribed standard by MoEF & CC vide Notification dtd. 07.12.2015.
9. The unit shall complete installation of Flue Gas Desulpurisation (FGD) system in prescribed time frame to keep the SO_2 level within 200 mg/Nm^3 to confirm the MoEF & CC Notification dtd. 07.12.2015. This shall also include management and disposal of effluent / solid waste to be generated from FGD system.
10. The fly ash shall be pneumatically conveyed to a silo. The unit shall provide adequate dust extraction system to control dust emission in the transfer points for collection of ash to silo.
11. Appropriate measures like provision of water sprinkling or soil covering shall be made over the exposed dry surface of the ash ponds to prevent dust nuisance due to wind action. Dust suppression measures shall also be provided where construction activities are undertaken at ash pond area to prevent dust nuisance.
12. Adequate dust extraction system such as cyclone/bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.

13. All raw material, product and waste material shall be transferred through covered vehicles without any spillage or leakages on the way, in case any accidental spillage on the road, waste shall be lifted by the industry and suitably disposed off and to be lifted by the industry and suitably disposed off in designated solid waste dumping area.
14. Ambient air quality shall conform to the National Ambient Air Quality standards as prescribed under E (P) Rules, 1986.
15. The unit shall submit fly ash utilization status to the Board annually and shall comply to the provisions of revised fly ash Notification No. SO.5481(E),dt. 31.12.2021 of MoEF & CC, Govt. of India and amendment thereof.
16. The performance evaluation of ESP, bag filter, air pollution control devices, online CEMS, AAQMS & surveillance cameras shall be conducted by an institution of National Repute (like NIT/ IIT) and annual report shall be submitted to the Board by end of June for previous financial year.
17. The digital display board installed at the main gate shall be of minimum size of 6ft x 4ft as stipulated by CPCB with provision of display of real time data online analysers (CEMS, CAAQMS & CEQMS), so that the public can visualize the actual emission and the values of parameters displayed at the gate. Outdoor LED video screens should be preferred for digital display of environmental parameters, CTO and authorization conditions and awareness clippings on environment at the main gate, colony area and process area.
18. Online analysers for measuring flow, temperature and velocity of flue gas shall be installed at the stacks and integrated with online CEMS data.
19. Online CO / Ammonia/ Chlorine and such other gas monitoring system shall be installed in every process area where such toxic gas are expected to be generated and in the plant premises along with alarm system to avoid accidental hazards due to gas leakage.
20. All Pollution control equipment may be provided with separate electricity meter and totalizer for continuous recording of power consumption. The amperage of the ID fan may also be recorded continuously. Non-functioning of Pollution control equipment should be recorded in the same logbook along with reasons for not running the Pollution Control Equipment.
21. Unloading of coal by trucks or wagons should be carried out with proper care avoiding dropping of the materials from height. It is advisable to moist the material by sprinkling water while unloading.
22. The industry shall maintain an Environmental Engineering Department in terms of manpower and infrastructure to cope with the increased workload and improved results for compliance to statutory norms. This shall be taken up on top priority. The head of the environment management cell should report to the unit Head.
23. Good housekeeping practices shall be followed to improve the work environment. All roads and shop floors shall be cleaned regularly.

24. Air compressor, DG set and turbine house should be acoustically designed and should be housed in appropriate acoustic enclosures so that the noise level outside it shall conform to the prescribed norms.
25. Care shall be taken so that ambient noise level shall conform to the standards prescribed under E(P) Act ,1986.
26. Periodical maintenance of all equipment, plant piping (including pollution control system) shall be carried out including calibration and testing.
27. A separate environmental management cell shall be formed with adequate laboratory facility and suitably qualified people to carry out various functions relating to environmental management effectively
28. The green belt of adequate width and density preferably with the local species along the periphery of the plant shall be raised so as to provide protection against particulates and noise. It must be ensured that at least 33% of the total land area shall be under permanent green cover. The proponent shall ensure the maintenance of green belt throughout the year and for all time to come. It is advised that, they may engaged professionals in this field for creation and maintenance of the green belt.
29. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
30. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.

F2 (Water Pollution Control)

1. Specific water consumption shall be limited within 3.5m^3/MWh as per MoEF & CC vide Notification dtd. 07.12.2015.
2. Under no circumstances there shall be any discharge of effluent to outside the factory premises.
3. The blow down of power plant shall meet the following standards before it is discharged to the common monitoring basin and shall be reused for ash handling, dust suppression and green belt.

Boiler blow down

Suspended solids	-	100.0 mg/l(Max)
Oil & Grease	-	20.0 mg/l(Max)
Copper (Total)	-	1.0 mg/l(Max)
Iron (Total)	-	1.0 mg/l(Max)

Cooling Tower Blow down

Free available Chlorine	-	0.5 mg/l(Max)
Zinc	-	1.0 mg/l(Max)
Chromium (Total)	-	2.0 mg/l(Max)
Phosphate	-	5.0 mg/l(Max)

4. The industry shall explore to adopt chemical free automated self -maintained electrolysis system for removal of scale, corrosion, bio-film from cooling towers and

automated tube cleaning system for heat exchangers and condensers with remote access and alarm system wherever applicable for conservation of water and energy to reduce wastewater generation and increase plant efficiency.

5. The recirculation system of ash pond shall be operated to achieve towards ZLD to prevent degradation of water quality of the nearby nallah and river Brahmani.
6. De-siltation of settling pits and drains of the entire plant shall be carried out periodically.
7. The performance evaluation of ETP, STP, online CEQMS & Web cameras, flow meter shall be conducted by an institution of National Repute (like NIT/ IIT) and annual report shall be submitted to the Board by end of June for previous financial year.
8. Flow meter and level sensors with telemetry system should be installed in the bore wells as stipulated by Central Ground Water Authority/ Water Resources Department.
9. The industry shall conduct surface run off management study and develop rain water harvesting structures and surface runoff treatment systems inside the premises.
10. Surface runoff treatment system consisting of sedimentation through settling tanks/ ponds followed by high rate clarification through clari-floculator/ tube settlers shall be operated effectively to meet the discharge norms and shall be completely recycled during dry season/ partly discharged specially during monsoon if unavoidable.
11. The domestic solid waste generated from colony, canteen, office complex etc. shall be processed through mechanically operated waste convertors with facility for recovery of useful products like oil/ gas/ carbon/ metal/ compost etc. The products to be used by the industry or sold and the *inorganic* residues is to be used for captive consumption/ sold/ disposed in sanitary landfill developed inside the premises.
12. Fixed type wheel washing system shall be operated effectively in ash silo area, coal stock yard and for the material transport vehicles at the exit gates to avoid carrying dust / ash along the wheels to the nearby public roads. The wash effluent shall be treated in settling pits and clear water shall be reused.
13. Concrete drains shall be constructed along the pipeline corridor to prevent any discharge of ash slurry to any natural stream.
14. The pipeline corridor from the plant side up to the ash pond area shall be cleared regularly of vegetation growth.
15. The online continuous effluent quality monitoring system (EQMS) shall be operated effectively and uninterruptedly and real time monitoring data so generated shall be transmitted directly to RT-DAS server of the Board without passing through any local PC or server.
16. The industry shall strictly follow the guideline of CPCB for Online Continuous Effluent Monitoring Systems (OCEMS) and Guidelines for Continuous Emission Monitoring Systems for the parameters and amended from time to time.

17. The Effluent Treatment Plant (ETP) shall be operated effectively and continuously through a dedicated in house team or through continued AMC so as to confirm to the prescribed norms.
18. The seepage from all the toe drains of entire ash pond area shall be collected in settling pond of adequate capacity and entire water shall be recirculated back to the plant for ash slurry making. There shall be no direct discharge to any water body.
19. The coal settling pits shall be cleaned and made operational alternatively all the time so that no waste water from CHP area/coal yard goes to outside bypassing the settling pits.
20. The unit shall ensure that no ash containing water from the ash pond area or due to leakages from ash pipe lines shall be discharged to Tikira River. In case there is any incidental discharge, the unit shall clean up the river bed and carry out regular monitoring of river quality to the Board.
21. The safety, stability of the ash dykes study shall be carried out by experts taking all hydraulic parameters into consideration.
22. The slurry pipe lines shall be aligned suitably in the lagoon of ash pond, so that ash is distributed uniformly.
23. The unit shall recycle the effluent of coal settling pit, overflow effluent and seepage effluent of the lagoon to the maximum extent.
24. The unit shall implement recommendations in the surface runoff study report.
25. The unit shall take utmost care to cover up exposed portion of the inactive ash pond and provide water sprinkling system to reduce fugitive dust.
26. Ash pond capacity augmentation shall be done to create volume for future storage.
27. Entire wastewater from leakages blow down and DM plant shall be recirculate.
28. The unit shall provide separate settling arrangement for surface runoff from dry ash silo area.
29. The storm water drains shall be maintained separately without being mixed up with the industrial effluent or sewage effluent.
30. The unit shall obtain authorization from the Board under Rule, 9 of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and condition stipulated in authorization granted by the Board.
31. The industry shall abide by E(P) Act, 1986 and Rules framed there-under.
32. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
33. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/stipulate additional conditions as deemed appropriate.
34. The industry shall take steps for fulfillment of all the stipulations and necessary measures to check pollution.
35. Consent to operate is subject to availability of all other statutory clearances required under relevant Acts/Rules and fulfillment of required procedural formalities.

P.T.O

G. Additional Conditions

1) The unit shall furnish Action Plan to achieve 100% utilization of Fly Ash **within 15 days.**
2) The unit shall submit surface runoff management study report to the Board for necessary approval **within one month.**
3) The unit shall strengthen the Environmental Cell with expertise in environmental discipline for effective compliance **within two months.**
4) The unit shall install atomize sensor-based wheel washing system at the newly constructed silo area of Stage-1 **within two months.**
5) Nomenclature of remaining stacks numbering shall be completed **within 3 months,** so that it would be clearly visible from distance and should be easily acknowledged through IP camera installed.
6) More number of check dams shall be constructed and geo textile membrane shall be provided at down-stream of Bakuli Jhor and inlet of seepage water pump house at ash dyke area **within 3 months.**
7) The unit shall ensure uninterrupted operation of the sprinklers installed at top of the ash dyke area by deploying booster pumps.
8) The unit shall provide metallic screen barrier at coal stockyard for control of wind-borne fugitive dust.
9) The industry shall take adequate precautionary measures to confirm the Ambient Air Quality within the prescribed standard at Near Shakti Dwar & EMG Office.
10) The unit shall ensure the implementation of action plan in time bound as submitted in compliance to office order of Board vide Letter No. 15214, dtd. 01.10.2021 with respect of High Court Order as per writ petition WP(C) No. 7293/2020 of Shovaraj Mohanty Vs. State of Odisha.
11) The unit shall abide by the Fuel Policy of the State Notified on 12.04.2021 by FE & CC Dept., Govt. of Odisha.

The occupier must comply with the conditions stipulated in section A,B,C,D,E F, G to keep this consent order valid.

To

The Executive Director
M/s. Talcher Super Thermal Power Stations,
NTPC Ltd.,
PO-Deepsikha, Kaniha
Dist-Angul

MEMBER SECRETARY
STATE POLLUTION CONTROL BOARD, ODISHA

Memo No. 4122 /Dt. 20.03.2023

Copy forwarded to;

i) Regional Officer, State Pollution Control Board, **Angul**
ii) District Collector, **Angul**
iii) D.F.O, **Angul**
iv) Director, Mines, Govt. of Odisha.
v) Director Factories and Boilers, Bhubaneswar
iv) Consent Register
v) Central Laboratory, SPCB, Patia, Bhubaneswar

CHIEF. ENV. ENGINEER
STATE POLLUTION CONTROL BOARD, ODISHA

P.T.O

GENERAL STANDARDS FOR DISCHARGE OF ENVIRONMENT POLLUTANTS
PART-A: EFFLUENTS

Sl.No.	Parameters	Standards			
		Inland surface	Public sewers	Land for irrigation	Marine Costal Areas
		(a)	(b)	(c)	(d)
1.	Colour & odour	Colourless/Odourless as far as practible	------	See 6 of Annex-1	See 6 of Annex-1
2.	Suspended Solids (mg/l)	100	600	200	For process wastewater – 100 b. For cooling water effluent 10% above total suspended matter of influent.
3.	Particular size of SS	Shall pass 850	-----	------	
5.	pH value	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
6.	Temperature	Shall not exceed 5°C above the receiving water temperature	-------	--------	Shall not exceed 5°C above the receiving water temperature
7.	Oil & Grease mg/l max.	10	20	10	20
8.	Total residual chlorine	1.0	----	------	1.0
9.	Ammonical nitrogen (as N) mg/l max.	50	50	------	50
10.	Total Kajeldahl nitrogen (as NH_3) mg/1 max.	100	----	------	100
11.	Free ammonia (as NH_3) mg/1 max.	5.0	----	------	5.0
12.	Biochemical Oxygen Demand (5 days at (20°C) mg/1 max.	30	350	100	100
13.	Chemical Oxygen Demand, mg/1 max.	250	----	------	250
14.	Arsenic (as As) mg/1 max.	0.2	0.2	0.2	0.2
15.	Mercury (as Hg) mg/1 max.	0.01	0.01	------	0.001
16.	Lead (as pb) mg/1 max.	01.	1.0	------	2.0

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17	Cadmium (as Cd) mg/l max.	2.0	1.0	------	2.0
18	Hexavalent Chromium (as Cr + 6) mg/l max	0.1	2.0	------	1.0
19	Total Chromium (as Cr) mg/l max	2.0	2.0	------	2.0
20	Copper (as Cu) mg/l max	3.0	3.0	------	3.0
21.	Zinc (as Zn) mg/l max.	5.0	15	------	15
22	Selenium (as Se) mg/l max	0.05	0.05	------	0.05
23.	Nickel (as Ni) mg/l max.	3.0	3.0	------	5.0
24.	Cyanide (as CN) mg/l max	0.2	2.0	0.2	0.02
25	Fluoride (as F) mg/l max	2.0	15	------	15
26	Dissolved Phosphates (as P) mg/l max	5.0	------	------	------
27	Sulphide (as S) mg/l max	2.0	------	------	5.0
28	Phenolic compounds as (C_6H_5OH) mg/l max	1.0	5.0	------	5.0
29	Radioactive materials				
	a. Alpha emitter micro curie/ml	10^{-7}	10^{-7}	10^{-8}	10^{-7}
	b. Beta emitter micro curie/ml	10^{-6}	10^{-6}	10^{-7}	10^{-7}
30.	Bio-assay test	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
31	Manganese (as Mn)	2 mg/l	2 mg/l	------	2 mg/l
32	Iron (Fe)	3 mg/l	3 mg/l	------	3 mg/l
33.	Vanadium (as V)	0.2 mg/l	0.2 mg/l	------	0.2 mg/l
34	Nitrate Nitrogen	10 mg/l	------	------	20 mg/l

P.T.O.

PART- B:NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighted Average	Concentrate of Ambient Air		Methods of Measurement
			Industrial) Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO_2), $\mu g/m^3$	Annual *	50	20	-Improved West and Gaeke
		24 Hours **	80	80	- Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO_2), $\mu g/m^3$	Annual *	40	30	- Modified Jacob & Hochheiser (Na-Arsenite)
		24 Hours **	80	80	- Chemiluminescence
3.	Particulate Matter (size less than 10µm) or PM_{10} $\mu g/m^3$	Annual *	60	60	-Gravimetric - TOEM
		24 Hours **	100	100	- Beta Attenuation
4	Particulate Matter (size less than 2.5µm) or $PM_{2.5}$ $\mu g/m^3$	Annual *	40	40	-Gravimetric - TOEM
		24 Hours **	60	60	- Beta Attenuation
5.	Ozone (O3) $\mu g/m^3$	8 Hours **	100	100	- UV Photometric - Chemiluminescence
		1 Hours **	180	180	Chemical Method
6	Lead (Pb) $\mu g/m^3$	Annual *	0.50	0.50	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper
		24 Hours **	1.0	1.0	- ED-XRF using Teflon filter
7	Carbon Monoxide (CO) mg/m	8 Hours **	02	02	- Non Dispersive Infra Red (NDIR) Spectroscopy
		1 Hours **	04	04	
8.	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence - Indophenol Blue Method
		24 Hours**	400	400	
9	Benzene (C_6H_6) $\mu g/m^3$	Annual *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP) Particulate phase only, ng/m^3	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m^3	Annual*	06	06	-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 08 hourly or 01 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.

P T O

No.43012/13/2017-CPAM
Government of India
Ministry of Coal
****

Shastri Bhavan,New Delhi
Date : 22nd April, 2021

Office Memorandum

Subject:	List of UG mines and abandoned OC mines identified by CIL and SCCL for ash filling

The undersigned is directed to refer to the recommendations dated 01.03.2019 of Expert Committee constituted by NITI Aayog for best utilization of fly ash. One of the recommendations of the Expert Committee, pertaining to MoC was identification of mines for fly ash filling and periodic updation of the list by a Task Force constituted by Ministry of Power.

2. In compliance to Expert Committee recommendations and subsequent order dated 12.02.2020 of Hon'ble NGT, MoC vide its letter dated 08.04.2020 had communicated to MoEF&CC a list of mines (21 Nos.) identified by coal PSUs for fly ash/bottom ash filling.

3. Based on the inputs received from coal PSUs, the list of mines for fly ash/ bottom ash filling has now been updated. The revised list comprises of 22 mines of CIL (Annexure-I) and 10 mines of SCCL (Annexure-II).

Encl: As above

(**Manish Uniyal**)
Under Secretary to the Govt. of India

To,

1. Shri A N Singh
Addl. Director (S)/Scientist 'E', HSM Division
Ministry of Environment, Forest and Climate Change
Indira Paryavaran Bhawan, New Delhi

2. Shri RK Das
Under Secretary to the Govt. of India.
Ministry of Power, New Delhi
Tel: 23715507, Ext: 212

Annexure-I

List of CIL mines identified for fly/bottom ash filling as on 31.03.2021							
Sl.No	CIL Subsidiary	Admin. Areas	Name of Mine	OC/UG	Volume (Approx) (Lakh Cu.m)	Nearby TPP's	Remarks
	Ongoing mine for fly ash Dumping= 06 NOS						
1	MCL	Jaganath	South Balanda Q-II &III	OC	14.73	NTPC	MoU signed on 15.07.2004 and **14.57 lakh cu.m** has been filled
2			Jaganath OC, Quarry IV	OC	17	Bhusan steel	Already filled with **0.558 lakh cu.m.** Filling stopped from Feb, 2016 as the permission for transportation of ash has not obtained by Bhusan Steel.
3			Jaganath OC, Quarry VI & VII	OC	6.43 & 3.96 =10.39	NTPC	MoU for ash filling was executed on 30.07.2020 and 0.462 lakh cum has been filled.
4			South Balanda Q-I	OC	0.883	NBVL	Already filled with **0.624 lakh cu.m** , Fly ash dumping is continuing .
5	SECL	Korba	Manikpur, western quarry	OC	210	NTPC & CSPGCL	1)MoU has been signed with NTPC for filling of fly ash 105 lakh cu.m As per agreement, 2.13 **lakh** cu.m fly ash has been filled . 2)MoU has been signed with CSPGCL for 105 lakh cu.m and as per agreement **4.17 lakh cu.m** fly ash has been filled
6		Korba	Surakachhar 3&4 pit	UG	1.50 & 1.80	NTPC	MoU has been signed with NTPC on 13.10.16 for **1.50** lakh cu.m and filling has been completed. Fresh MoU with NTPC signed on 31.08.2019 for filling of **1.80** lakh cu.m. As on date **0.855 lakh cu.m** has been filled.
	MoU signed = 04 NOS						
7	BCCL	WIA	Murulidih (Cluster-XIII)	OC	1.5	CTPP	MoU between BCCL & DVC for Back filling Fly-Ash from Chandrapura Thermal Power plant has been signed on 14th September 2020. Safety Clearance from DGMS and Clearance from MoEFCC for dumping fly ash within 500 m range from Damodar river is yet to be obtained by DVC.
8	NCL	Block-B	Gorbi	OC	14	NTPC	MoU has been signed with NTPC on 03.01.2019. NTPC is in the process for obtaining statutory clearances.

Sl.No	CIL Subsidiary	Admin. Areas	Name of Mine	OC/UG	Volume (Approx) (Lakh Cu.m)	Nearby TPP's	Remarks
9	MCL	Jaganath	Jaganath OC, Quarry VIII	OC	17.8	NTPC	MoU for ash filling was executed on 18.09.2020.
10		Bhartpur	Bharatpur	OC	13.3	NALCO	Laying of pipeline by NALCO is under process for transportation of fly ash.
On process = 12 NOS							
11	WCL	Majri	Telwasa OC	OC	200	GMR power, Warora, SalWardha Power, Warora	Abandoned Mine Plan (AMP) has been submitted to DGMS vide our letter no. WCL/ MA/ CTSA/ SAM/ 2020/280 and 277 dated 30.09.2020, field inspection from DGMS officials awaited. A meeting with MAHAGENCO was held on 12.02.2021 at WCL HQ. In the meeting, the guidelines of CIL on fly ash filling in mine void was explained in detail to MAHAGENCO. The safety and environmental issues in respect of operational mines was also informed.
12		Majri	Dhorwasa OC	OC	100		
13		Majri	NavinKunada OC	OC	250		Abandoned Mine Plan (AMP) has been submitted to DGMS vide our letter dated 30.09.2020, DGMS visited the site on 21.11.2020.
14	SECL	Bhatgaon	Dugga	OC	170	NTPC,Korba	Void is filled with water
15		Bishrampur	Bishrampur	OC	17	NTPC, Korba	Bishrampur Quarry-1, partially backfilled. Part has been planted and remaining part is filled with water.
16		JamunaKotma	Jamuna OC	OC	10	NTPC,	TPPs have submitted their applications. Allotment will be done with consent of state pollution control Board.
17		Sohagpur	ShardaOC (OPQR patch & Trench T-1 patch)	OC	10.0 & 30.0	TPPS	
18	ECL	Mugma	Pusai	OC	12	MPL,Maithon	ECL has approved dumping of Fly ash in Pusia OCP.
19		Kajora	Lachipur	OC	3	DSTPS (DVC)Durgapur	ECL has approved dumping of fly ash in Lachipur Colliery & voids in Nabakajora Colliery under Kajora Area .MoU is under process
20			NabaKajora	OC	3.8		
21	CCL	Kathara	Govindpur	UG	0.85	DVC/STPS	Bottom ash could be filled in the mine void for stowing.
22		NK	Dakra	OC	214.5	Patratu	It is a running mine and expected reserve may exhaust by 2023. Available for ash filling from 2023-24

Annexure-II

List of SCCL Mines identified for fly ash/Bottom ash filling as on 31.03.2021												
OC mines (1)												
Sl. No.	Comp.	Area	Name of Mine	OC	District	Area (Ha)	Volume (Lakh Cu.m)		Nearby TPP	Distance (Km)	Transport	Remarks
1	SCCL	RG-1	Medapalli OCP	OC	PeddapalliT elangana	258.31	2164.3		NTPC	5.00	Road	Mine to be closed in 2022-23
List of UG mines (9 Nos.) - suitable for Bottom ash filling												
Sl. No.	Comp.	Admin Area	Name of Mine	UG	District	Volume of ash (Cu.m/Annum)			Nearby TPPs	Distance from TPPs	Transport infra	Remarks, if any
						Utilization Potential	Actual utilization (2019-20)	Balance Potential		Km (Approx)		
2	SCCL	RG-I	GDK-1 Inc.	UG	Peddapalli	220828	164079	56748	STPP, NTPC	19.41, 26.10	Road	Bottom ash and Processed OB (POB) are utilised for stowing
3	SCCL	RG-I	GDK-2 Inc.	UG	Peddapalli	283687	275582	8105	STPP, NTPC	21.24, 27.94	Road	
4	SCCL	RG-II	GDK-7Lep	UG	Peddapalli	219398	219398	0	STPP, NTPC	24.47,32.00	Road	-
5	SCCL	RG-II	Vakilpalli	UG	Peddapalli	18699	18699	0	STPP, NTPC	32.4, 39.0	Road	-
6	SCCL	SRP	RK-7 Inc.	UG	Mancherial	250948	86452	164496	STPP	13.05	Road	Bottom ash, Processed OB (POB) & Sand are utilised for stowing.
7	SCCL	SRP	SRP-3 & 3A Inc.	UG	Mancherial	218879	60520	158359	STPP	12.71	Road	
8	SCCL	SRP	IK-1A Inc.	UG	Mancherial	168467	81865	86602	STPP	15.89	Road	
9	SCCL	MM	Kasipet	UG	Mancherial	146162	94621	51541	STPP	40.62	Road	
10	SCCL	MM	RK 1A	UG	Mancherial	26240	15841	10399	STPP	25.70	Road	Bottom ash & sand are utilised for stowing.
	Total UG					**1553308**	**1017058**	**536251**				

		(NOx)	
		पारा (Hg)	0.03 mg/Nm³

* टीपीपी (इकाईयां) इस अधिसूचना के प्रकाशन की तारीख से दो वर्ष के भीतर परिसीमाओं को पूरा करेंगी।

** इसके अंतर्गत सभी टीपीपी (इकाईयां) हैं, जिन्हें पर्यावरणीय निकासी प्रदान की गई है और संनिर्माण के अधीन है।

[फा. सं. क्यू-15017/40/2007-सीपीडब्ल्यू]

डा. राशिद हसन, सलाहकार

टिप्पण :- मूल नियम भारत के राजपत्र, असाधारण, भाग II, खंड 3, उपखंड (ii) में सं. का.आ. 844(अ) 19 नवंबर, 1986 द्वारा प्रकाशित किए गए थे और उनका पश्चातवर्ती का.आ. 433(अ) तारीख 18 अप्रैल, 1987 ; सा.का.नि 176(अ) तारीख 2 अप्रैल, 1996; सा.का.नि. 97 (अ), तारीख 18 फ़रवरी, 2009 ; सा.का.नि 149(अ) तारीख 4 मार्च, 2009 ; सा.का.नि. 543(अ) तारीख 22 जुलाई, 2009 ; सा.का.नि. 739(अ) तारीख 9 सितम्बर, 2010 ; सा.का.नि. 809(अ) तारीख 4 अक्टूबर, 2010, सा.का.नि. 215(अ) तारीख 15 मार्च, 2011 ; सा.का.नि. 221(अ) तारीख 18 मार्च, 2011 ; सा.का.नि. 354(अ) तारीख 2 मई, 2011 ; सा.का.नि. 424(अ) तारीख 1 जून, 2011 ; सा.का.नि. 446(अ) तारीख 13 जून, 2011 ; सा.का.नि. 152(अ) तारीख 16 मार्च, 2012 ; सा.का.नि. 266(अ) तारीख 30 मार्च, 2012 ; सा.का.नि. 277(अ) तारीख 31 मार्च, 2012; सा.का.नि. 820(अ) तारीख 9 नवम्बर, 2012 ; सा.का.नि. 176(अ) तारीख 18 मार्च, 2013 ; सा.का.नि. 535(अ) तारीख 7 अगस्त, 2013 ; सा.का.नि. 771(अ) तारीख 11 दिसम्बर, 2013 ; सा.का.नि. 2(अ) तारीख 2 जनवरी, 2014 ; सा.का.नि. 229(अ) तारीख 28 मार्च, 2014 ; सा.का.नि. 232(अ) तारीख 31 मार्च, 2014 ; सा.का.नि. 325(अ) तारीख 7 मई, 2014, सा.का.नि. 612(अ) तारीख 25 अगस्त, 2014 और अन्तिम संशोधन सा.का.नि. 789(अ) तारीख 11 नवम्बर, 2014 किया गया था।

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 7th December, 2015

S.O. 3305(E).— In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:–

1. (1) These rules may be called the Environment (Protection) Amendment Rules, 2015.

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

2. In the Environment (Protection) Rules, 1986, in Schedule – I, -

(a) after serial number 5 and entries relating thereto, the following serial number and entries shall be inserted, namely:–

Sr. No.	Industry	Parameter	Standards
1	2	3	4
"5A.	**Thermal Power Plant (Water consumption limit)**	**Water consumption**	I. All plants with Once Through Cooling (OTC) shall install Cooling Tower (CT) and achieve specific water consumption upto maximum of 3.5m³/MWh within a period

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			of two years from the date of publication of this notification. II. All existing CT-based plants reduce specific water consumption upto maximum of 3.5m^3/MWh within a period of two years from the date of publication of this notification. III. New plants to be installed after 1st January, 2017 shall have to meet specific water consumption upto maximum of 2.5 m^3/MWh and achieve zero waste water discharged";

(b) for serial number 25, and the entries related thereto, the following serial number and entries shall be substituted, namely:-

Sr. No.	Industry	Parameter	Standards
1	2	3	4
"25.	Thermal Power Plant	**TPPs (units) installed before 31st December, 2003***	
		Particulate Matter	100 mg/Nm^3
		Sulphur Dioxide (SO_2)	600 mg/Nm^3 (Units Smaller than 500MW capacity units) 200 mg/Nm^3 (for units having capacity of 500MW and above)
		Oxides of Nitrogen (NOx)	600 mg/Nm^3
		Mercury (Hg)	0.03 mg/Nm^3(for units having capacity of 500MW and above)
		TPPs (units) installed after 1st January,2003, upto 31st December, 2016*	
		Particulate Matter	50 mg/Nm^3
		Sulphur Dioxide (SO_2)	600 mg/Nm^3 (Units Smaller than 500MW capacity units) 200 mg/Nm^3 (for units having capacity of 500MW and above)
		Oxides of Nitrogen (NOx)	300 mg/Nm^3
		Mercury (Hg)	0.03 mg/Nm^3
		TPPs (units) to be installed from 1st January, 2017**	
		Particulate Matter	30 mg/Nm^3
		Sulphur Dioxide (SO_2)	100 mg/Nm^3
		Oxides of Nitrogen (NOx)	100 mg/Nm^3
		Mercury (Hg)	0.03 mg/Nm^3

*TPPs (units) shall meet the limits within two years from date of publication of this notification.

**Includes all the TPPs (units) which have been accorded environmental clearance and are under construction".

[F. No. Q-15017/40/2007-CPW]

Dr. RASHID HASAN, Advisor

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Honeywell

Honeywell Automation India Limited
53, 54, 56 & 57 Hadapsar Industrial Estate,
Hadapsar, Pune-411013

Tel. : 91-20-66039513
Fax : 91-20-66039600

www.honeywellautomationindia.com

23-Feb-2022

Kind Atten:
To,
Shri Somnath Kundu
Alternate CISO, DGM
PE-C&I, NTPC CC EOC
NTPC LIMITED

Subject: Operational Risks from Running Unsupported Microsoft® Windows™2008 Server R2 & Windows™7 or Earlier Operating Systems

For:- Upgradation against obsolescence of HMI of M/s. Honeywell along with Cyber Security Suite in
Ramagendam Unit 4,5, offsite Station LAN,
Unchahar Unit 1,2
Singrauli Stage I & II,
Talcher Unit 4,5 &6
Bongaigaon unit 1,2,3 & subunits

Dear Sir,

Hope you all are safe and doing well.

This is regarding the subject matter, as you are aware, **after January 14, 2020**, Microsoft discontinued its support for systems running on Microsoft® Windows™ Server 2008 R2 & Windows™ 7. This means that while the operating system may continue to operate beyond the end of life date, ***Microsoft will not release new security updates, security hot fixes, provide technical phone support, or online technical content updates.*** Without this support, the Microsoft Windows Server 2008 R2 & Windows 7 operating system could become increasingly vulnerable to cyber security risks; in the event a system is exploited, there is **no support available for remediation or repair.**

Who is impacted?

1. The Microsoft Operating Systems used with the Experion PKS R43x & below releases
2. Advanced Applications not running on Windows 10 or Windows Server 2016 or latest
3. Any Microsoft OS other than Windows 10 and Server 2016 or latest on PCs connected to auxiliary equipment that is connected to Experion, such as PLCs, Analyzers, etc.

Microsoft have ceased the development of all security patches for Windows 7 and Server 2008 R2. There will be no further support. Without this support,

1. Attackers are likely to target systems running Windows 7 and Windows Server 2008R2 on the first day support ends
2. More vulnerabilities will be uncovered and exploited.
3. If a system is exploited, there will be no support options available for remediation or repair!
4. Troubleshooting will become difficult and can't get the root cause analysis.

What happens after January 14, 2020	Implications
New workstation hardware will not be available	1. In case of complete HW failure workstations will become and remain non-operational 2. Cannot add new operator stations/license addition on account of plant expansions

Hardware spare availability and support will decline over time	In case of any HW failure – will have no resolution due to unavailability of spares
Updates/Fixes for 3rd party vendor e.g. driver updates etc. may not be available	No resolution in case of failures
OS Patches will not be available	Running unpatched systems, significantly increases cyber security risks

Future path forward and support modality –

Honeywell monitors risk to its open systems and strives to offer customers beneficial paths forward. To reduce the risks of unplanned downtime, Honeywell has developed system modernization solutions to address Microsoft Windows 2008 Server R2 & Windows 7 support discontinuation and to help you better protect your system.

Currently installed hardware and software are obsolete and no more available; hence we will be severely constraint to support the existing system. Failure of these HMI's and its subassembly may create plant disturbance which result into plant tripping and unforeseen shutdown. In view of above, we will not be able to support / take any responsibility of failures, modification requirements, additions etc on unsupported system. We recommend that upgradation to be undertaken on urgent priority to ensure smooth operation of the system and so the plant. Honeywell will not be able to assume any responsibility towards any failures due to obsolescence and unsupported platform. It is highly recommended to utilize the system on supported configuration and licensing in order to avoid any major incident to the system and also effectively to the plant.

Honeywell recommend upgrading the hardware and software to latest Experion release of R5xx platform compatible with latest operating system.

Please feel free to contact us for any further clarification and we will be glad to explain in detail on the path forward & support planning.

Thanking you and assuring our best services at all time.

Yours truly,
For Honeywell Automation India Limited,

Amey Latkar
(HPS- Lifecycle Solution & Services)

Annexure A/7

Office of the Executive Engineer
Head Works Division, Samal
At:/P.O Samal Barrage Township, Dist: Angul
e-mail.id :(ee.hwd.samal@gmail.com) (eehwsamal [illegible]@nic.in)

No. HWD/Estt/2015 [illegible] Dated [illegible]

To

1. The General Manager (O & M), M/S NALCO Ltd.
   At/P.O: [illegible], Dist: Angul

2. The General Manager, M/S Jindal India Thermal Power Ltd.
   At/P.O: [illegible], Dist: Angul

3. The Asst. Vice President, M/s Jindal Steel & Power Ltd.
   At/P.O: [illegible] Nagar, Dist: Angul.

4. The Plant Superintendent, M/s Odisha Power Generation Corporation Ltd.
   Samal Barrage Township, Dist: Angul.

Sub: Enhancement of licence fee / Industrial Water rate w.e.f. 01.04.2019.

Ref: Letter No. [illegible] dt. [illegible] 2018

Sir,

In enclosing herewith the letter on the subject cited above, it is to intimate that as per Odisha Irrigation (Amendment) Rules, 2016, 25 A (2) (f) the licence fees for the use of water shall be enhanced @ 10% per annum w.e.f. 1st day of April every year. As the amendment came into force w.e.f. the date of publication in Odisha Gazette on 27.09.2016, the first and 2nd enhancement of rate has been made from 1st April 2017 and 1st April 2018 respectively.

Accordingly, the 3rd enhancement of fee rate @ 10% on water cess will be effective from 01.04.2019 as it has already been referred in the letter under reference that, the enhancement @ 10% per annum shall be effected only on and over the original rates in the schedule II & III of Odisha Irrigation (Amendment) Rules, 1961 from the 1st day of April every year [illegible].

Therefore, you are requested to pay the water cess with respect to the approved schedule and the advance water tax calculation sheet basing on the enhanced rate by way of DD/NEFT as already intimated for your information and necessary action at your end.

Encl: As above

Yours faithfully,

[illegible]

Executive Engineer,
Head Works Division, Samal

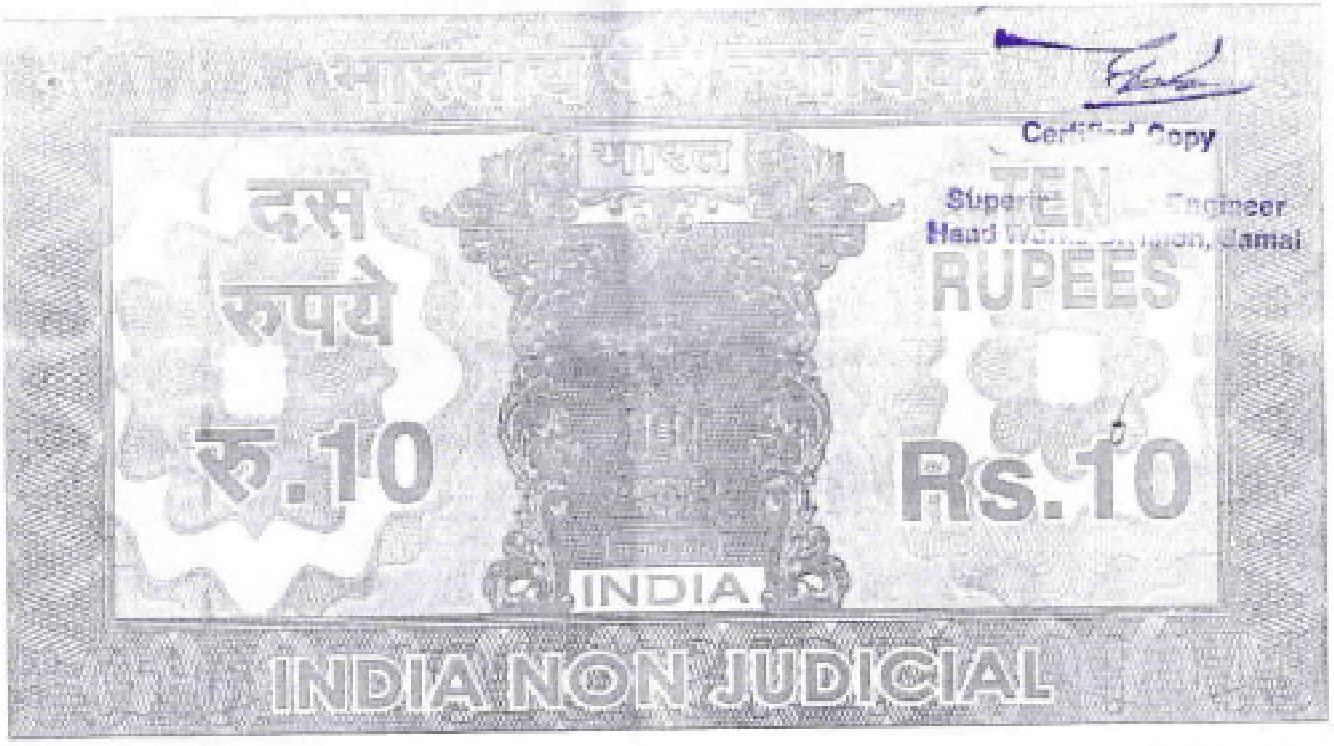
Memo No. [illegible] / Dated [illegible]

Copy along with the enclosure submitted to the Engineer-in-Chief-cum-Special Secretary to Govt., Water Resources, Odisha, Bhubaneswar / Chief Engineer, Water Resources [illegible] for favour of kind information and necessary action.

[illegible]

Executive Engineer

P.T.O.



Certified Copy
Superintending Engineer
Head Works Division, Samal

ଓଡ଼ିଶା ओडिशा ODISHA

55AA 878855

FORM 'K'

(See Rule- 23(A) (2) (c) & Rule 26)

AGREEMENT FOR SUPPLY OF WATER FOR THE PURPOSE OF

INDUSTRIAL/COMMERCIAL USE

THIS AGREEMENT is made on the **28th day of April 2022 (w.e.f. 01.05.2022)** between M/s NTPC Ltd., Kaniha, Deepsikha, Kaniha, Dist : Angul, Odisha through its Addl. General Manager Shri J.C. Patra, S/o : H.K. Patra, resident of Vill : Deepsikha, P.S: NTPC, Kaniha, Dist : Angul , by profession Engineer (hereinafter called as the "Applicant") of the first part AND (1) Shri B.K Sahoo, S/o : Basudev Sahoo , resident of Vill : Deepsikha, P.S: NTPC, Kaniha, Dist : Angul, by profession Engineer and (2) Shri PPS Srinivas S/o : Late PSN Murthy, resident of Vill : Deepsikha, P.S: NTPC, Kaniha, Dist : Angul , by profession Engineer (here in after referred to as the "Sureties") of the second part;

AND

The Governor of Odisha which expression unless repugnant to the context, shall include his successors and assigns (hereinafter called "the Government") of the third part;

जे. सि. पात्र
J. C. PATRA
अपर महाप्रबंधक (ई एम डी)
Addl. General Manager (EEMD)
एनटीपीसी लिमिटेड / कानीहा, अंगुल
NTPC Limited / Talcher Kaniha

28.04.2022
Superintending Engineer (C)
Head Works Division, Sa

WHEREAS, the applicant has made an application for drawl of water from River Brahmani upstream of Samal Barrage pond for the period as mentioned in the Schedule; here to annexed. AND, WHEREAS, the sureties have agreed to stand surety. For payment of rates charged for such supply in the manner hereinafter appearing and the Government has agreed to supply water for the purpose specified in the schedule annexed hereto —

SCHEDULE

(As per letter No.Irr.II-WRC-77/16-8395/WR., dated 06.04.2016 of EIC-cum-Spcl. Secretary , Govt. to Deptt. of Water Resources)

Purpose for which water will be supplied	**Volume of water if any**	Period of supply	**The place from which it will be supplied**
1	2	3	4
Industrial Use & Drinking Water	105 Cusecs	From 01.05.2022 to 30.04.2025	River Brahmani (from its Intake Pump House)at upstream of Samal Barrage Pond

जे. सी. पात्र
J. C. PATRA
अपर महाप्रबंधक (ई एंड एम-सी)
Addl. General Manager (E&M/C)
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

28-04-2022

Superintending Engineer (C)
Head Works Division, Sa

NOW THIS AGREEMENT witness as follows:

In pursuance of the said agreement and in consideration of supply of water to be made to the applicant , the applicant and sureties hereby jointly and severally covenant with the Government as follows:-

a) The applicant shall pay at the rate of Rs. 8.96/m^3 of water on or before last working day of month in which demand has been issued , to the Superintending Engineer, Head Works Division, Samal.

b) The applicant will pay the bill for the month for which the agreement is signed for the allocated quantity or drawn, whichever is higher as per above schedule. If drawal is more than the allocation, a penal rate at six times the rate specified in Schedule II and III shall be charged on the quantity of excess drawal, in addition to the normal bill on allocated quantity.

C) The unit price shall be enhanced @10% per annum with effect from 1st April of every year as per Sub-rule 2(f) under 23(A) of the Odisha Gazette No. 1716 Dt. 24.09.2016.

TERMS & CONDITIONS :

1. **M/s NTPC Ltd., Kaniha** shall make suitable arrangement to take the water from the Government water source/ Irrigation works at which it will be supplied. **M/s NTPC Ltd., Kaniha** shall not use the water supplied to him for any purpose other than that which is specified in the Schedule.

2. If the water rate/license fees for the aforesaid quantity of water or any part thereof, is not paid on or before the date specified at that time of agreement it shall become payable at once (unless the Government sanctions for special reason an extension of time) and **M/s NTPC Ltd., Kaniha and the sureties shall be liable jointly and severally to pay the same with compound interest at the rate of two per cent *per mensem* from the date of default.** All amount due to the Government under the terms of these presents shall if not paid in time, be recoverable as a public demand under the Odisha Public Demands Recovery Act, 1962.

3.

(ii) **M/s NTPC Ltd., Kaniha** shall be liable for criminal and civil action if by drawl of water, the rights of any third party are affected and shall indemnify the Government against all claims for damage preferred by person or persons affected by the permission granted.

(iii) **M/s NTPC Ltd., Kaniha** shall not without prior permission in writing from the Government lay pipe line on Government or communal lands. If the pipe lines have to pass through Government lands, permission of the Government for this shall be taken separately which may be granted subject to the protection of rights of Government or community, as the case may be.

जे. सि. पात्र
J. C. PATRA
अपर महाप्रबंधक (ई एंड एम)
Addl. General Manager (E&M)
तलचेर कनिहा / तलचेर कनिहा
NTPC Limited / Talcher Kaniha

28.04.2022
Superintending Engineer (C)
Head Works Division, Samal

(iii) **M/s NTPC Ltd., Kaniha** shall not draw or lift water more than the quantity mentioned in the requisition or order and not exceeding the volume mentioned in the Schedule except with the prior approval of the Government. **The Superintending Engineer shall assess the fees to be charged as per Unit /quantity of water drawn or allocated whichever is higher.** If drawal is more than the allocation, a penal rate at six times the rate specified in Schedule II and III shall be charged on the quantity of excess drawal, in addition to the normal bill on allocated quantity. The excess drawl is permissible for a maximum period of six months, within which, the licensee shall have to apply for a higher allocation of water with reasons and where the licensee fails to apply for such higher allocation or where the licensee is refused for such higher allocation, the agreement shall be liable to cancellation and the water supplied shall be stopped thereafter.

(iv) The permission granted shall not be deemed to exempt **M/s NTPC Ltd., Kaniha** from liability to payment of water charges lawfully assessable at the rate as may be prescribed by Government from time to time.

(v) Government reserves the right to suspend or cancel the permission in case of violation of any of the conditions.

4. **M/s NTPC Ltd., Kaniha** at its own cost shall install a Flow Meter or a suitable measuring device for measurement of water drawn or lifted by him from the Government water source/Irrigation works as per the procedure laid down in rule 23-A(b). The Executive Engineer shall visit the location of drawl or lifting of water, verify the quantities of water drawn or lifted by **M/s NTPC Ltd., Kaniha** and ensure such control as may be necessary for administering the drawl or lifting of water. Assessment of water rate shall be made as per the quantity of water drawn or allocated whichever is higher. In case of any defect or non-functioning of the Flow Meter, the licensee shall bring the fact to the notice of the concerned Executive Engineer forthwith and take appropriate steps to remove the defects in the Meter or for replacement thereof within a period of two months and in such cases the fees shall be charged on the quantity of water allocated for the said period of three months or till the defect in the Meter is removed or the Meter is replaced, as the case may be, whichever is earlier, and where the licensee fails to bring the defect or non-functioning of the Meter to the notice of the Executive Engineer or fails to remove the defects in the Meter or to replace the same, as the case may be, within the stipulated period the agreement shall be liable to cancellation and thereafter the water supply shall be stopped.

5. **M/s NTPC Ltd., Kaniha** shall construct full proof effluent discharge plant before commissioning of the project. For proper test of such effluent there shall be computerized testing system and M/s NTPC Ltd., Kaniha shall give details of effluent discharged in the natural source (in river and nala).

6. **M/s NTPC Ltd., Kaniha** would be required to pay 3 (three) months advance water charges in favour of Superintending Engineer concerned in shape of Bank Draft or FDR duly discharged by the company as non-interest bearing security deposit and for 9 (nine) months a Bank Guarantee duly pledged in favour of concerned Superintending Engineer. Onus of maintaining the Bank Guarantee lies with the company.

28-04-2006

Superintending Engineer (C)
Head Works Division, Samal

जे. सि. पात्र
J. C. PATRA
Addl. General Manager (Civil)
NTPC Limited / Talcher Kaniha

7. In case of water supply for the **M/s NTPC Ltd., Kaniha** is to be met from a common source through a sharing mechanism, such common infrastructure for drawal of water will be constructed, maintained and operated either by IDCO or Special Purpose Vehicle (SPV) after taking due clearance from IDCO. Water will be supplied to M/s **NTPC Ltd., Kaniha** by IDCO/SPV and they would also be liable for payment of water rate to the Government and will in turn have arrangements as similar to clauses (6) and (7) detailed earlier.

8. **M/s NTPC Ltd., Kaniha** will not disturb the normal flow of water so that riparian rights in the downstream will be affected and the company shall have no claim on the account.

9. The drawl mechanism for raw water and disposal system of effluent to be established by the industry without disturbing existing eco system and environmental set up.

10. The Rehabilitation and Resettlement Action Plan/ Welfare Action Plan, if so required will be prepared in conformity with the current Odisha Rehabilitation and Policy and executed by the company at its own cost under the supervision of the Water Resources Department and the Collector of the District.

11. **M/s NTPC Ltd., Kaniha** should not claim as a matter of rights to get the desired quantity of water during non-monsoon and lean period to meet their full industrial use and the company has to make adequate storage facility for a period of 3 month in their own land .Unless there is sufficient water available in the river / stream to meet the riparian demand, the industry would not be allowed to draw water from the intake point during this lean period.

12. The safety design of all the structures lies fully on the company.

13. In case of any dispute/ interpretation of law, the decision of the Government in Water Resource Department shall be final.

14. Any surplus power from CPP shall be sold by **M/s NTPC Ltd., Kaniha** to GRIDCO or any other entity to be notified by the State Government for the purpose under mutually acceptable terms and conditions.

15. This agreement shall be valid for 03 (Three) years from date of execution subject to the renewal of the agreement by Executive Engineer .For renewal of the agreement, the concern drawee has to apply minimum three months before the expiry date.

16. If the Industry is found to be drawing water unauthorized before signing the agreement/ installation of flow meter, the concerned Superintending Engineer will charge a penal rate at six time normal rate as provided in schedule II and III of Odisha Irrigation (Amendment)Rules, 2010.

17. The Superintending Engineer or his authorized representative reserve the right to inspect all installations of drawl and disposal mechanism during and after construction including intake structure, flow meter and treatment plant.

18. M/s NTPC Ltd., Kaniha will have to show clearly in the Water Management Plan as to what

जे. सि. पात्र
J. C. PATRA
अपर महाप्रबंधक (ई एण्ड सी)
Addl. General Manager (E&M&C)
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

Superintending Engineer (C
Head Works Division, Sam

storage facility the company will create for the lean season and to what extent and how the water is going to be recycled .This plan should be a part of the project report of the unit.

19. **M/s NTPC Ltd., Kaniha** may engage at their own cost consultant(s) experienced in the field to take up field investigations, prepare design and drawing to set up the water supply scheme for drawing water from Government water source/Irrigation works for their proposed plant. The actual work will start only after approval of the scheme by the competent authority of Water Resources Department who can inspect the work during the construction.

20. The exact place for lifting will be decided in consultation with the competent authority of Water resources Department.

21. Department of Water Resources will not responsible for non-availability of water due to dry season, disruption, repair and maintenance of River/Canal/Reservoir.

22. The agreement to be executed by industry/commercial establishment with local authority / Superintending Engineer must be approved by the Department of Water Resources before drawl of water.

23. For optimizing water use, **M/s NTPC Ltd., Kaniha** should adopt rain water harvesting measure in their plant premises which is for minimising the dependence on river and to meet the requirement in lean season.

24. **M/s NTPC Ltd., Kaniha** will follow the principle of zero discharge effluent to the river. It would recycle the water for its consumption and hence the demand on fresh water would be for makeup purpose only.

25. If the industry violates any one of the above conditions it may lead to immediate cancellation of allocation.

26. **M/s NTPC Ltd., Kaniha** shall have all precautionary safety measures emergency safety plan for entire water supply scheme and shall remain responsible for any loss cause to life and public and private properties.

27. The detailed designs and quality of construction of Civil, Electrical and Mechanical work shall be BIS specification for intake constructions and all ancillary structure relating to the construction, operation and running maintenance of the intake works and the water conductor system **M/s NTPC Ltd., Kaniha** shall be held responsible for the safety of the works.

28. Allocation of water to the industry is subject to condition of water availability in future which depends upon upstream utilization and irrigation water supply.

29. The Industry shall deposit@2.5 crores/cusec of water allocated to industries in five equal annual instalments in coming five years beginning with current financial year towards Water Conservation Fund(WCF) for construction of Barrages/Check dams to improve the water

जे. सि. पात्र
J. C. PATRA
अपर महाप्रबंधक (इलेक्ट्रिकल)
Addl. General Manager (ELEC/GI)
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

28-04-2022
Superintending Engineer (C)
Head Works Division, Sam...

storage capacity in the lean season with concerned Superintending Engineer as per Department Resolution No 24011/WR dated 03.11.2015.The Industry shall enter into an agreement for the purpose of drawl of water, before which contribution towards Water Conservation Fund(WCF) shall be paid.

30. Government shall be at liberty to review the water allocation unilaterally in case of exigencies.

In Witness whereof the Parties hereto have put their hands and seals the day and year first above-written.

In the presence of witnesses :

1. Sahoo 28/04/22
Asst. Engineer
Estimation, Road Works Division
Samal

2. Gyanranjalee Pani
J.E(L)

Signature of applicants

जे. सि. पात्र
J. C. PATRA
अपर महाप्रबंधक (ई ई एम जी)
Addl. General Manager (EEMG)
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

1.

2.

In the presence of witnesses :

1. 28.4.22

2.

Signature of sureties

1.

बी. के. साहू
B. K. SAHOO
अपर महाप्रबंधक (प्रचालन)
Addl. General Manager (Operation)
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

2.

In the presence of witnesses

1.

2.

पी. पी. एस. श्रीनिवास
P. P. S. SRINIVAS
अपर महाप्रबंधक (प्रचा. एवं अनु. / सी एम सी)
Addl. General Manager (O&M/EMC)
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

28-04-2022

SIGNATURE OF THE SUPERINTENDING ENGINEER
acting in the premises for and on behalf
of the Governor of Odisha"

Superintending Engineer
Road Works Division, Samal

Office of the Executive Engineer
Head Works Division, Samal
At:/P.O Samal Barrage Township, Dist: Angul
e-mail id :(ee.hwd.samal@gmail.com), (eehwsamal [illegible]@nic.in)

Letter No. HWD/Estt/2015-20 [illegible] Dated [illegible]

To

1. The General Manager (O & M), M/s [illegible] Ltd.,
   At/P.O: [illegible], Dist: Angul
2. The General Manager, M/s Jindal India Thermal Power Ltd.
   At/P.O: Derang, Dist: Angul
3. The Asst. Vice President, M/s Jindal Steel & Power Ltd.
   At/P.O: Jindal Nagar, Dist: Angul
4. The Plant Superintendent, M/s Odisha Power Consortium Ltd.
   Samal Barrage Township, Dist: Angul.

Sub: Enhancement of Industrial / Special Water cess w.e.f. 01.04.2019.

Ref: Letter No. [illegible] dtd. 04.04.2018

Sir,

In inviting reference to the letter on the subject cited above, it is to intimate that as per Odisha Irrigation (Amendment) Rules, 2016, 27-A (2) (f) [illegible] the license fees for the use of water shall be enhanced @ 10% per annum w.e.f. 1st day of April every year. As the amendment came into force with the date of publication in Odisha Gazette on 27.09.2016, the first and 2nd enhancement of cess has been made from 1st April 2017 and 1st April 2018 respectively.

Accordingly, the 3rd enhancement of license fee @ 10% on water cess will be effective from 01.04.2019 as it has already been [illegible] in the letter under reference that, the enhancement @ 10% per annum shall be effected only on [illegible] over the original rates in the schedule II & III of Odisha Irrigation (Amendment) Rules, 1961 from the 1st day of April every year i.e. [illegible]

Therefore, you are requested to pay the water cess with respect to the approved schedule and the advance water tax calculation sheet basing on the enhanced rate by [illegible] DoWR are attached herewith for your information and necessary action at your end.

Encl: As above

Yours faithfully,

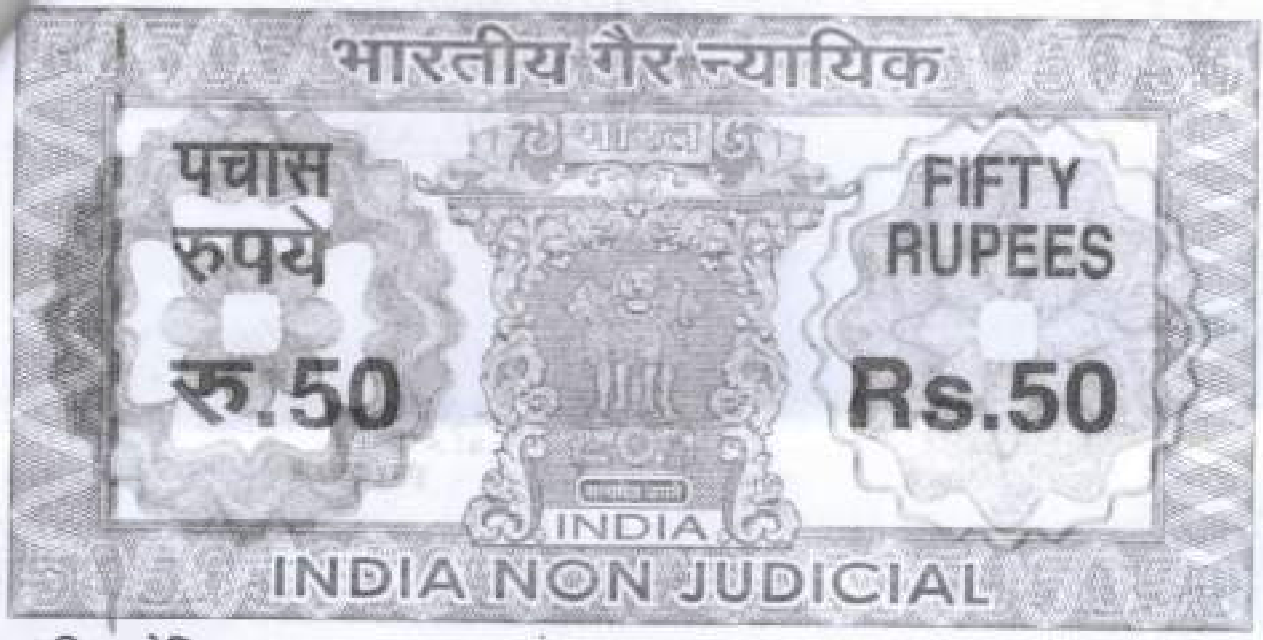
Executive Engineer
Head Works Division, Samal

Memo No. [illegible] Dated [illegible]

Copy along with the enclosures submitted to the Engineer-in-Chief-cum-Special Secretary to Govt., Water Resources, Odisha, Bhubaneswar / Engineer-in-Chief, Water Resources, [illegible] for favour of kind information and necessary action.

Executive Engineer

P.T.O....



ଓଡ଼ିଶା ओड़िशा ODISHA F 302350

MEMORANDUM OF UNDERSTANDING FOR BACK FILLING OF ASH FROM NTPC'S TALCHER SUPER THERMAL POWER STATION, KANIHA, ANGUL INTO THE ABANDONED/DISUSED QUARRY AT QUARRY NO-VIII OF JAGANNATH OPEN CAST MINE OF MAHANADI COAL FIELDS LIMITED.

The Memorandum of Understanding (MOU in short) is made on 18th day of September 2020 between M/s NTPC Ltd., a Govt. of India undertaking, incorporated under the Companies Act, 1956 (now Companies Act,2013) and is having its registered office at NTPC Bhawan, Core-7, SCOPE Complex, 7-institution area Lodhi Road, New Delhi-110003 and having one of its Project namely Talcher Super Thermal Power Station (TSTPS), here in after referred to as "NTPC" (which expression shall unless repugnant to the context or meaning there of "NTPC" includes its successors and assigns) on one part.

AND

M/s Mahanadi Coal Fields Limited, which is a Central Public Sector Undertaking, incorporated under the Companies Act, 1956 (now Companies Act,2013) and a subsidiary of Coal India Limited is having its registered office at Jagruti Vihar, PO: Jagruti Vihar, Dist: Sambalpur, Odisha hereinafter referred to as "MCL" (which expression shall unless repugnant to the context or meaning thereof includes its successors and assigns) on the other part.

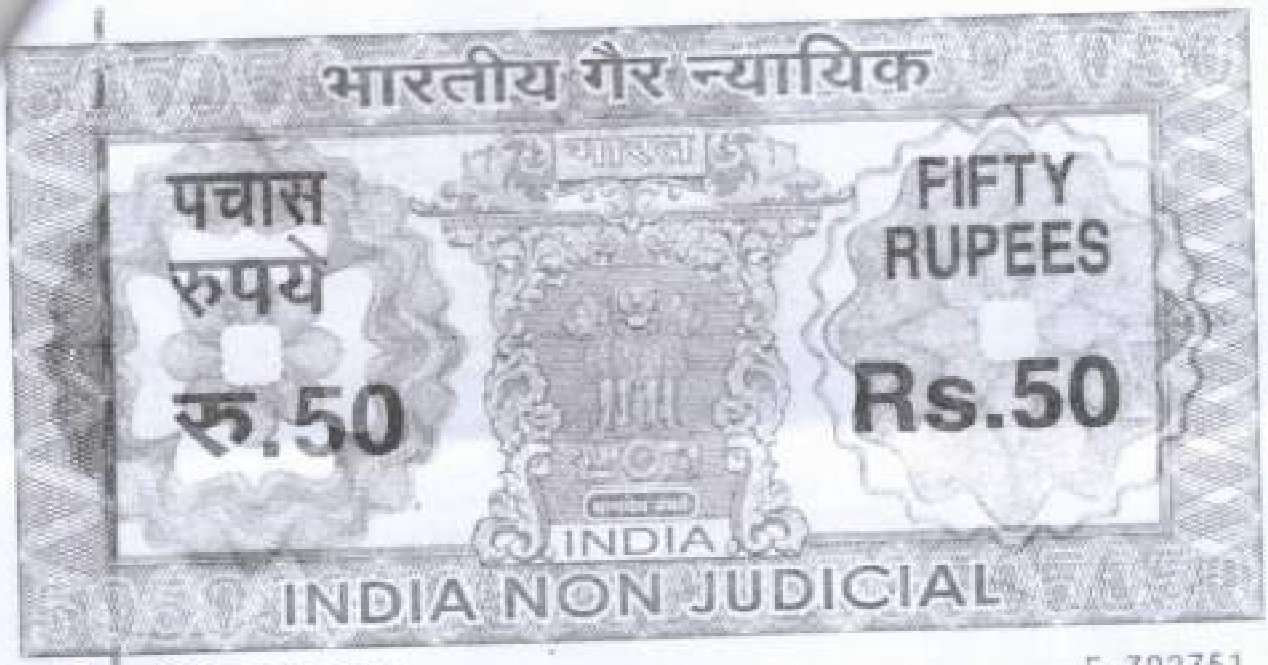
WHEREAS TSTPS has amongst other, a thermal power station at Talcher-Kaniha, Angul area known as NTPC/TSTPS.

18/09/2020

सुदीप नाग
SUDIP NAG
मुख्य महाप्रबंधक
Chief General Manager

AFFIDAVIT/AGREEMENT/BOND
SL No. 6817 DT 8.9.20 RS 50
NAME NTPC Ltd., TSTPS Kaniha
PLACE At- NTPC Kaniha

8.9.20
SATRUGHAN DAS
STAMP VENDOR
TALCHER



ଓଡ଼ିଶା ओड़िशा ODISHA F 302351

AND WHEREAS in the operation of said TSTPS huge amount of ash is generated and TSTPS requires adequate space in coal mines for back filling of the said ash.

AND WHEREAS TSTPS had approached MCL for providing abandoned/disused opencast quarry/mine for disposal of such ash from NTPC/TSTPS on mutually agreed terms and conditions herein after mentioned.

WHEREAS MCL has agreed to provide such part of the disused opencast mine/quarry at Quarry no-VIII of Jagannath OCP in Talcher for ash filling for a period of 20 years from the execution of MoU or till the time the void is filled of, whichever is earlier. The ash filling in the mine void will be done from TSTPS of NTPC by lean slurry or other method as approved by statutory authorities like SPCB-Odisha and MoEF&CC. Ash filling will be ensured with quick setting of the discharged slurry by removal of extra water.

WHEREAS NTPC and MCL have specifically agreed that such part of the disused opencast mine/quarry at Quarry no-VIII of Jagannath OCP in Talcher Coalfields as will be available in residue after identification/demarcation in favour of TSTPS as aforesaid shall be utilized by MCL and/or its nominee/assignee for back filling of coal washery rejects.

AND WHEREAS necessary NOCs from State Pollution Control Board, Odisha (SPCB in short) have to be obtained. MCL hereby authorizes NTPC to approach the statutory authorities for obtaining necessary clearance/approvals and MCL shall provide necessary assistance to NTPC in this regard.

18/9/20

18/9/2020

सुदीप नाग
SUDIP NAG
मुख्य महाप्रबंधक
Chief General Manager

MAHANADI COALFIELDS LIMITED
BURLA : SAMBALPUR - 768020

AFFIDAVIT/AGREEMENT/BOND

SL No. 28/9 DT 29 2025

NAME NTPC Ltd. TSTPS Kaniha

AT NTPC Kaniha

NOW THE MEMORANDUM OF UNDERSTANDING WITNESSES AS FOLLOWS:

That in consideration of the mutual agreement and with intent to achieve in above objectives both NTPC and MCL mutually agreed as under-

1. NTPC shall be responsible for securing necessary permission from Govt./Statutory authorities for the use of disused opencast void for ash filling and MCL shall cooperate in this regard.

2. NTPC shall transport and back fill the ash in lean slurry form or any other mode, approved by statutory authorities like SPCB-Odisha or MoEF&CC and agreed to by MCL.

3. The pipe lines for ash-water slurry will be laid and maintained at its cost by NTPC as to obviate any leakage. In the event of any leakage of the slurry, it will be the responsibility of NTPC to quickly redress it and all liabilities in this regard shall be borne by NTPC.

4. MCL shall provide corridor of 15 meters in width for laying of pipe lines for ash back filling and recirculation of water within its lease hold boundery to NTPC.

5. On account of such ash disposal in the quarry provided by MCL if there occurs any pollution, environmental hazard or imbalances, NTPC shall be solely liable for such imbalances and will rectify on its own cost the imbalances beyond approved/standards laid down by appropriate authorities including SPCB, Odisha. Further, TSTPS shall keep MCL for all times to come unharmed and indemnified in this regard.

6. That transportation, storage, back filling of ash will be done exclusively by NTPC at its own cost. MCL shall have no financial, civil or criminal liability in this regard or in respect of any other incidental factors, whatsoever. NTPC shall have no claim on the ash dumped inside the MCL mine.

7. NTPC, Kanhia will re-align the route of pipeline as per the requirement of MCL for mining operation.

8. This is a temporary permission for laying of pipeline on the coal bearing area of Bhubaneswari OCP and back filled area of Ananta and Jagannath OCP. Whenever the above land will be required by Jagannath Area for coal production by Bhubaneswari OCP, it will be obligatory on the part of NTPC, Kanhia to hand over land to MCL and shift the pipeline on the land made available by the Project/Area.

9. NTPC will be responsible for implementation of all the conditions as per EIA report in back filling of ash to the extent that back filling of such ash will in no way affect the quality of ground water seeping through the ash bed.

10. The process of back filling of ash to the disused pit/quarry shall be as per the approved directives and guidelines of SPCB Odisha, MoEF&CC. The same shall be obtained by

18/9/20

DIRECTOR (T/P&P)
MAHANADI COALFIELDS LIMITED
BURLA / SAMBALPUR - 768020

18/09/2020

सुदीप नाग
SUDIP NAG
Chief General Manager
NTPC Limited / T-K & SSC-ER II

NTPC and a copy to be submitted to MCL before the start of operation. MCL shall obtain the Clearances from Director General of Mines safety (DGMS in short) and NTPC shall provide all necessary assistance to MCL in this regard.

11. MCL shall not in any way be responsible for any accident or injury to the persons engaged or otherwise affected in the process of transportation, storage, back filling of ash and other monitoring and NTPC shall keep MCL unharmed and indemnified against any claim on this score. NTPC shall submit an indemnity bond in this regard in proper format.

12. NTPC will pay for the rate of ash filling, to be decided by MCL along with taxes and other levies as applicable from time to time.

13. NTPC shall be responsible for the event of any violation of the provision of Mines Act,1952, CMR- 2017, Environment (Protection) Act 1986, Air (Prevention and Control of Pollution) Act,1981, Water (Prevention and Control of Pollution) Act, 1974 and any Act/Rules applicable, arising out as a direct or indirect consequence of back filling of ash.

14. Environment Impact Assessment (EIA) report along with tests as and when required in respect of toxicity, leachability and combustible content of ash should be prepared by a reputed Government Scientific Agency at the cost of NTPC to the satisfaction of SPCB, Odisha and the EIA report along with test details and NOC shall be submitted to MCL.

15. (a)That after filling of the mine void with ash, the top ash layer would be leveled and covered by NTPC with good soil of 1m thickness or as per the provisions mentioned in EIA report/consent order, whichever is higher. The land, so reclaimed will be developed with green cover and shall be handed over by NTPC to MCL.
(b) The provision of soil cover thickness shall be reviewed at the time of execution based on available technology on mutual acceptable terms between NTPC and MCL.

16. NTPC will indemnify MCL for any consequential damage or liability. MCL shall owe no responsibility to the persons engaged by NTPC. NTPC shall submit an indemnity bond in this regard in proper format.

17. MCL reserves the right to withdraw/suspend this permission at any time with a prior written notice to that effect, in the event of any breach of any condition of MOU.

18. NTPC will submit stage wise progress reports of the work to the Project & Area Authorities and Director (Tech.) P&P, MCL, every quarter as per the format mutually finalized between NTPC and MCL from time to time.

19. That the ash shall be disposed only at the appointed sites, identified above and not anywhere else.

18/09/2020

DIRECTOR (T / P&P)
MAHANADI COALFIELDS LIMITED

सुदीप नाग
SUDIP NAG
मुख्य महाप्रबंधक
Chief General Manager
NTPC Limited / T-NK & SSC-ER II

20. NTPC shall start ash filling from Dera-Nakelpasi Public Transportation Road, near the barrier portion of Jagannath and Ananta OCP and as desired by the local management of Jagannath Area.

21. If the operation of back filling of ash is abandoned by NTPC at any stage keeping the dumped ash bare, MCL shall be within its right to get the bare dump covered by each of 1m or as per the provisions mentioned in EIA report/consent order ,whichever is higher either on its own or through any contractor/agency at the risk and cost of NTPC.

22(A). Settlement of disputes through adjudicator

(i) The adjudicator under the contract shall be the General Manager (Mining), Mahanadi Coalfields Limited.

(ii) Appointing authority of Adjudicator: CMD, MCL

(iii) Settlement of Disputes through Adjudicator - If any dispute of any kind whatsoever shall arise between the NTPC and MCL in connection with or arising out of this MOU, including without prejudice to the generality of the foregoing, any question regarding its existence, validity or termination, or the execution of the MOU – whether during the progress of the MOU or after their completion and whether before or after the termination, abandonment or breach of the MOU – the parties shall seek to resolve any such dispute or difference by mutual consultation. If the parties fail to resolve such a dispute or difference by mutual consultation, then the dispute shall be referred in writing by either party to the Adjudicator, with a copy to the other party.

(iv) The Adjudicator shall give its decision in writing to both parties within twenty-eight (28) days of a dispute being referred to it. If the Adjudicator has done so, and no notice of intention to commence arbitration has been given by either party within fifty-six (56) days of such reference, the decision shall become final and binding upon the parties. Any decision that has become final and binding shall be implemented by the parties forthwith.

(v) Should the Adjudicator resign or die, or should the parties agree that the Adjudicator is not fulfilling its functions in accordance with the provisions of the MOU, another Adjudicator shall be appointed at the request of either party by the appointing Authority. Fees matter will be decided at that time.

18/9/2020

18/9/20

सुदीप नाग
SUDIP NAG
मुख्य महाप्रबंधक
Chief General Manager
NTPC Limited / T-K & SSC-ER II

MAHANADI COALFIELDS LIMITED
BURLA / SAMBALPUR

22(B). **Settlement of disputes through** Administrative Mechanism for Resolution of CPSE Dispute (in short AMRCD) as per the rules of Govt. of India, applicable from time to time:

(i) In case, either party does not agree with the decision(s) of the adjudicator, mentioned at Cl. 22 (A) and no amicable resolution or settlement is reached within a period of thirty (30) days from the date of decision of the adjudicator is received and notified by the either party to the other party, the aggrieved party may approach to the Administrative Mechanism for Resolution of CPSE Dispute (AMRCD) of the Department of Public Enterprises, Govt. of India for adjudication of the dispute(s) as per rules of Govt. of India, applicable from time to time.

(ii) Notwithstanding any reference to the Adjudicator or AMRCD herein:

(a) The parties shall continue to perform their respective obligations under the contract unless they otherwise agree.

(b) Any money due under the MoU shall be paid by NTPC if the said due is not the subject matter of Adjudication or under AMRCD.

23 That MCL reserves the right to utilise a part of the said Quarry-VIII of Jagannath OCP for back filling of washery rejects from the coal washeries of MCL located in Talcher Coalfields for some time as may be required by MCL.

24 Any notice to be given under the MOU shall be in writing and shall be deemed to have been duly and properly served upon the parties here to, if delivered against acknowledgement or by Speed Post and by e-mail, addressed to the parties herein at the following address as will be duly notified by the parties from time to time. For any change in communication details given below, the either party shall intimate each other, immediately.

NTPC LTD.
Talcher Super Thermal Power Station,
PO: Deepsikha, Kaniha
Dist- Angul, Odisha-759 147
e-mail : hoptstps@ntpc.co.in

MCL
Mahanadi Coalfields Ltd.
PO: Jagruti Vihar,
Dist: Sambalpur, Odisha - 768020.
e-mail : dtppmcl@gmail.com

25 The MoU shall come into force for all purposes and intents from the date of its signing and shall remain valid and operative for a period of 20 years from the said date or till the time the void filled up, whichever is earlier.

26 The MoU terms can be reviewed on mutual agreement between NTPC and MCL whenever required owing to new conditions.

18/09/2020

18/9/20

DIRECTOR (T/P&P)
MAHANADI COALFIELDS LIMITED
BURLA / SAMBALPUR - 768020

सुदीप नाग
SUDIP NAG
Chief General Manager
NTPC Limited / T-K & SEC-III

27 NTPC shall reimburse all expenditure including any legal charges on any matter of ash filing on any litigation, orders of Government and orders of regulatory authority. This liability will operate even after termination of this MoU for 4 years and till the termination of the litigation, if any commences within 4 years and continues beyond that till all litigation ceases.

28 Termination

(a) The MoU shall be deemed to have been automatically terminated on the expiry of the period of MoU as mentioned in the clause 25.

(b) The parties will have a right to terminate this MoU by giving 30 days written notice to the other party.

In witness whereof the parties through their authorized representatives put their respective signatures on the Memorandum of Understanding (MoU) on the day, month and year, above written.

18/09/2020

CGM/HOP
TSTPS-Kaniha, NTPC Limited
(Authorized Signatory)

सुदीप नाग
SUDIP NAG
मुख्य महाप्रबंधक
Chief General Manager

Director Technical (P&P)
Mahanadi Coalfields Limited
(Authorized Signatory)

Witness:

1. 18.9.2020 (S.K. Choudhary), Project Officer, TSTPS, Kaniha

2. 18/09/2020 (R.K. Bhatt), GM/TS, DT (P&P), MCL

3. 18/09/2020 (K.C. SAMAL) AGM(TS), NTPC Ltd, TSTPS, Kaniha.

4. 18/9/2020 Sr. Manager, AC, NTPC-Kaniha

ମହାନଦୀ କୋଲଫିଲ୍ଡସ୍ ଲିମିଟେଡ୍
महानदी कोलफील्ड्स लिमिटेड
Mahanadi Coalfields Limited
(A subsidiary of Coal India Limited)

MCL

महाप्रबंधक(परियोजनाएवं योजना)काकार्यालय
Office of the General Manager (P&P)
At/Po: Jagruti Vihar, Burla, Dist.: Sambalpur-768020(Odisha)
Phone-(0663) 2950562,
E-mail:cgm-cpnp.mcl@coalindia.in/ gmprojectsmcl@gmail.com
Web site:www.mahanadicoal.in
CIN No.: U10102OR1992GOI003038

संदर्भ संख्या: एमसीएल/मुख्यालय/महाप्रबंधक(परियोजनाएवं योजना)/20/ 206-E दिनांक 04/12/2020

To
General Manager,
Jagannath Area, MCL

आवती सं./Dy. No. 7164
दिनांक/Date 6-12-2020
GM's Secttt.

Sub: Approval of Committee recommendation for updation/revision of the rate per cubic meter of ash filling into the abandoned mine voids of Jagannath OCP by different agencies.

महोदय,

The Functional Directors of MCL in its 612th meeting held on 23rd November, 2020 at Registered Office of the Company approved the recommendation of the committee for updation / revision of the rate per cubic meter of ash filling into the abandoned mine voids of Jagannath OCP by different agencies.

The recommended rate of ash filling is as follow

1) For Talcher Thermal Power Station (TTPS-NTPC)
   Cost per cum of ash filling = Rs. 10.23
   Annual cost = 81,85,887.64 (Annual escalation, 10% per year)
2) For Talcher Super Thermal Power Station (TSTPS-NTPC)
   Cost per cum of ash filling = Rs. 1.52
   Annual cost = 53,33,968.48 (Annual escalation, 10% per year)
3) For Bhusan Steel (presently Tata Steel) Limited
   Cost per cum of ash filling = Rs. 6.94
   Annual cost = 84,51,051.11 (Annual escalation, 10% per year)

Annual cost is applicable only in case, the amount calculated on the basis of cost per cum of ash filling is less than the annual cost due to less ash filling as projected.

GST will be applicable over the above charges for all the agencies. Amount to be paid to Jagannath Area against bills raised by the Area.

This is for your kind information and necessary action.

भवदीय,

(एम. एस. शर्मा)
महाप्रबंधक (परियोजना एवं योजना)

Copy to:

1. Director (Tech/P&P), MCL- For kind information
2. Company Secretary, MCL
3. General Manager (Envt), MCL
4. M/s Talcher Thermal Power Station (NTPC)
   PO- Talcher Thermal, Dist- Angul (Odisha), Pin. 759101
5. M/s Talcher Super Thermal Power Station (Talcher- Kaniha)
   PO- Deepshika, Dist- Angul (Odisha), Pin. 759147
6. M/s Bhusan Steel , Presently Tata Steel BSL Limited
   At- Narendrapur, PO- Kusupanga, Via- Meramandali
   Dist- Dhenkanal (Odisha), Pin. 759121

PO, TTPC
GO(Env.)
AFM

महाप्रबंधक/G.M.
जगन्नाथ क्षेत्र/J.A.

परियोजना एवं योजना विभाग
Project & Planning Department
महानदी कोलफील्ड्स लिमिटेड
(भारत सरकार का उपक्रम)
MAHANADI COALFIELDS LIMITED
(A Government of India Enterprise)

प.क./परियोजनाएवं योजना/23-24/ 372-H दिनांक: 14-09-23

सेवा में,

महाप्रबंधक,

जगन्नाथ क्षेत्र, तालचेर क्षेत्र, विंगराज क्षेत्र, भरतपुर क्षेत्र, हिंगुला क्षेत्र, कणिहा क्षेत्र, ओरिएंट क्षेत्र, ईब वैली क्षेत्र, लखनपुर क्षेत्र, वसुन्धरा- गर्जनबाहल क्षेत्र, महालक्ष्मी क्षेत्र.

विषय: - Revision of cost of ash filling into abandoned voids of All the OCPs of MCL.

महोदय,

Please find enclosed herewith the Minutes of the 775th Meeting of CoFDs held on 10.09.2023 and the related Agenda Note on the subject matter.

The CoFDs of MCL in its 775th Meeting, held on 10.09.2023, has approved the methodology for deriving annual cost of filling of fly ash, in abandoned voids of all the OCPs of MCL.

The details of methodology to be adopted for calculation/deriving the annual cost of ash filling is mentioned in the Agenda Note. Accordingly, the annual cost of filling of fly ash shall be derived based on the latest applicable wages/ salaries and communicated to the allottees.

You are requested to kindly adhere to the approved methodology and implement, where ever de-coaled mine voids are allotted for backfilling fly ash by thermal power plants/ allottees as per MoU.

संलग्न : यथोपरि

भवदीय,

14.09.23

महाप्रबंधक (परियोजना एवं योजना)
एमसीएल

प्रतिलिपि सादर सूचनार्थ :-

1. निदेशक (तकनीकी /संचालन), एमसीएल
2. निदेशक (तकनीकी/योजना एवं परियोजना), एमसीएल
3. निदेशक (वित्त), एमसीएल

प्रतिलिपि

1. महाप्रबंधक (वन एवं पर्यावरण), एम.सी.एल
2. तकनीकी सचिव, अध्यक्ष –सह-प्रबंध निदेशक, एमसीएल

महानदी कोलफील्डस लिमिटेड
Mahanadi Coalfields Limited
(A subsidiary of Coal India Limited)

Office of the Company Secretary
At/Po. Jagruti Vihar, Burla, MCL
Dist. Sambalpur – 768020 (Odisha)
CIN: U10102OR1992GOI003038
Tel#Fax No. 06632542977
Email id: cosecmcl@gmail.com
Website: www.mahanadicoal.in

MCL

File No. MCL/SBP/CS/FDs-775/2023/13539 | Sheet No. 01 | Dt. 12.09.2023

Name of the Officer

Sub: **Extract from the Minutes of the 775th Meeting of FDs held at 12.30 PM on Sunday, the 10th September 2023 at Registered Office of the Company, Jagruti Vihar, Burla, Sambalpur, Odisha-768020.**

775.3 **Approval of Committee recommendation towards Revision of cost of ash filling into abandoned voids of Jagannath and other OCPs of MCL.**

GM(Mining) P&P explained to the FDs the Gazette notification dated 31st December, 2021 on fly ash. Accordingly, a committee finalized a methodology for deriving annual cost of filling ash in abandoned voids of all the mines of MCL.

The FDs thereafter deliberated in detail and based on the clarifications offered by GM (Mining), P&P approved the methodology as per details brought out in the agenda note.

श्रीकान्त

Company secretary

GM(P&P)

for needful please.

Sri Agarwal

13.09.23

for necessary action pl.

13/09/2023

Sri. Jagannath Dash, CM (See)

Sri. Subhasis, MT

निदेशालय एवं योजना विभाग, एम. सी. एल.
Project & Planning Department, MCL
प्राप्ती संख्या /Receipt No. 7358
दिनांक /Date 13/09/23

Item No. 775.3

MAHANADI COALFIELDS LTD.
BURLA, SAMBALPUR

Agenda Note 775th **for Meeting of Committee of Functional Director's of MCL**

Sub: Approval of Committee recommendation towards Revision of cost of ash filling into abandoned voids of Jagannath and other OCPs of MCL.

Background Information

A committee was constituted vide Office Order no. MCL/HQR/GM(CP&P)/09/2364 dated 28.10.2009 for fixing the rate per cum of fly ash filing into abandoned voids of Jagannath OCP. The Functional Directors in its 322nd meeting held on 22.02.2011 had approved the recommendation of the committee.

Further, another committee was constituted vide Office Order No MCL/HQ/SBP/GM(P&P)/20/11-H dated 07.04.2020 for updation /revision of rate per cum of fly ash filing into abandoned voids of Jagannath OCP. The Functional Directors in its 612th meeting held on 23.11.2020 had approved the recommendation of the committee.

Meanwhile, the MoUs with NTPC for TSTPS & TTPS have been executed on 18.09.2020 and 30.07.2020 respectively for the purpose of fly ash filling in the abandoned voids of Jagannath OCP. The fly ash filling has commenced on 09.10.2021 & 14.09.2020 by TSTPS-NTPC & TTPS – NTPC respectively.

Subsequently, during the scrutiny of the records related to the determination of the rate per cum of ash filing into abandoned voids of Jagannath OCP and the provisions of DGMS permission, the following was revealed:

1. The committee considered the expenditure on account of the supervision of the ash filing and for the watch and ward of the site. Accordingly, the computation of expenditure has been done for
   (a) One Overman deployed in each shift (1X3=3 Overman/day) and
   (b) One Security guard deployed in each shift (1X3=3 Security guard/ day).
2. However, Asst. Managers, Overman & Mining Sirdars appointed by the management shall have to be deployed for supervision of such jobs keeping in view of the statutory manpower required as per DGMS permission for supervision and watch & ward.

Therefore, the necessity for revision of rate per cum of fly ash filling was required and accordingly a committee was constituted vide order No 475 dated 17.10.2022 for revision of rate per cum of ash filing into abandoned voids of Jagannath OCP.

Recommendation of the Committee:

The important deliberations as made in the proposal are as follows:

1. The Para 12 of MoUs has a provision that NTPC will pay for ash filling, to be decided by MCL along with taxes and other levies as applicable from time to time.
2. The proposal is for fixation of charges to be levied towards cost of supervision and watch & ward recommended by the constituted committee. The committee had considered deployment of Asst Manager/ Overman/ Mining Sirdar for supervision and Watch & Ward in each shift/3 shifts in a day.
3. As per Gazette Notification dated 31 Dec 2021 on fly ash, for the back filling of fly ash "It shall be obligatory on all mines located within 300 Km radius of thermal power plant, to undertake back-filling of ash in mine voids or mixing of ash with external Overburden

dumps, under Extended Producer Responsibility (EPR). All mine owners or operators (Government, Public and Private Sector) within three hundred kilometre (by road) from coal or lignite based thermal power plants, shall undertake measures to mix at least 25 per cent of ash on weight to weight basis of the materials used for external dump of overburden, back-filling or stowing of mine (running or abandoned as the case may be) as per the guidelines of the Director General of Mines Safety (DGMS)".

The thermal power stations shall facilitate the availability of required quantity of ash by delivering ash free of cost and bearing the cost of transportation or cost of transportation arrangement decided on mutually agreed terms.

In view of the same the committee has observed that **"We cannot charge cost @ per cum of ash filling".**

4. It is deliberated that MCL has to incur expenditure on account of supervision of the ash filling work as per DGMS permission and for watch & ward of the site which is to be reimbursed by the allottees/ agencies.
5. It is to be mentioned here that there is no relation with respect to the no of persons to be engaged w.r.t total area of supervision in case of ash filling into mine voids.
6. The constituted committee has recommended on 16.12.2022 that the supervision and watch & ward cost to be reimbursed by each allottee i.e. NTPC - TTPS/ TSTPS and a comparative chart is depicted below. **There is a change in methodology of reimbursement from Rs./CuM levy earlier made to fixed levy per year irrespective of quantum of ash filling in voids .**

Agency	Prev. Rate (Year-2011)	Prev. Revision Rate (Year-2020)	Proposed revision by Committee in their report dt. 16.12.2022
TTPS-NTPC	(a) Cost / Cum of ash filling =Rs.3.89 (b) Annual cost of filling = Rs 31,08,772.28 and 10% escalation every year thereafter.	(a) Cost / cum of ash filling = Rs. 10.23 (b) Annual Cost of filling = Rs 8185887.64 and 10% escl. every Year thereafter.	Annual cost of filling = Rs.12205461.58 + GST for 1st year and 10% Financial escalation every Year there after + GST
TSTPS-NTPC	(a) Cost / Cum of ash filling =Rs.0.71 (b) Annual cost of filling = Rs 21,18,802.95 and 10% escalation every year thereafter.	a) Cost / Cum of ash filling = Rs. 1.52 (b) Annual Cost of filling = Rs 53,33,968.48 and 10% escalation every year thereafter.	Annual cost of filling = 122,05,461.58 + GST 1st year and 10% Escalation every Year + GST

7. The committee has further recommended that:

I. Assessment of such rates will be revised when revision of wages / salary takes place at MCL/ CIL as the case may be.

II. MCL may charge Annual cost against Supervision and watch & ward upon the number of years of ash filling with 10% of escalation every year thereafter and proportionally in case the ash filling is completed during the end year and GST applicable for the entire period of operation of ash filling. Annual cost will be applicable in case of discontinuance of ash filling also.

The effective date of revision of rate recommended by the Committee shall be the date of communication of its approval by FDs.

Further, it is also deliberated that M/s Tata steel BSL Limited (erstwhile M/s Bhushan steel Limited) had winded up their plant and had surrendered the site on 15.06.2020 prior to communication of updated / revised rate i.e. 04.72.2020. As such new revised rate will not be applicable to M/s Tata steel BSL Limited (erstwhile M/s Bhushan Steel Limited) as there is no impact on financial expenditure incurred due to less consideration of manpower by the previous committee.

The proposal has been agreed to be placed before CoFDs by CMD, MCL. (Annexure-I)

Addition to Original Agenda

Subsequent to approval of the above agenda to be placed before CoFDs, the following point has emerged:

Although the committee was constituted for revision of cost of fly ash filling in abandoned mine voids of Jagannath OCP only, it is proposed that the same should be applicable to all the abandoned mines of MCL for fly ash filling, subject to the enabling conditions of MoUs, following the methodology adopted by the committee for calculation of Annual cost to be charged.

The proposal has been agreed by CMD, MCL for placing before FDs of MCL for deliberation.

APPROVAL SOUGHT

Therefore, the proposal is placed before the Committee of Functional Directors of MCL for kind approval for revision of cost of fly ash filling in all the abandoned mines of MCL, subject to enabling conditions of MoUs, following the methodology adopted by the committee for calculation of Annual cost to be charged.

S. Parida
Company Secretary

27

			As per cost approved w.e.f 23.11.2020		As per Revised cost approved w.e.f 12.09.2023			
Sl No	Year	Quantity of fly ash dumped (Cub.M)	Cost per cum of ash filling @ 1.51 /Cum	Annual Cost @ Rs.53,33,968.48 in 2020-21 and 10% escalation every year thereafter	Annual Cost @ 1,22,05,461.58, 1st year and 10% Escalation every year+GST	Demand Amount in Rs. excl. GST	Demand Amount in Rs. Incl. GST@18%	Remarks
1	2020-21	0	0.00	53,33,968.48	-	53,33,968.48	62,94,082.80	No flyash dumped in this year.
2	2021-22	407450	41,68,213.50	58,67,365.33	-	58,67,365.33	69,23,491.09	Flyash dumping has been commenced from 09.10.2021. Minimum annual cost with 10% escalation in 2nd year to be paid when Total cost as per cost/cum is less than minimum annual cost
3	2022-23	808525	82,71,210.75	64,54,101.86	-	82,71,210.75	97,60,028.69	Total cost as per cost/cum is to be paid in 3rd year when Total cost as per cost/cum is more than Minimum annual cost with 10% escalation
4	2023-24	910632	-	-	1,22,05,461.58	1,22,05,461.58	1,44,02,444.66	Annual cost as per revised approved cost. No escalation for 1st year
					Total	₹ 2,98,60,897.25	₹ 3,52,35,858.75	

Reddy

Annexure A/9

OFFICE OF THE GENERAL MANGER
JAGANNATH AREA
PO: DERA COLLIERY, ANGUL (ODISHA), 759103
Ph: +91 (6760) 269528, 269529, 269751
e-mail: cgm-jaga.mcl@coalindia.in

MCL G20 भारत 2023 INDIA

Ref. No. - MCL/GM/PO(JOCP)/Envt./Flyash/TSTPS/2024-25/ 4940 Date: 05.09.2024

10-10-2024

To

The Chief General Manager
NTPC Ltd./TSTPS
Talcher Super Thermal Power Station(TSTPS),
PO: Deepsikha, Kaniha
Dist- Angul, Odisha-759147
Email: hoptstps@ntpc.co.in

RECEIPT Dt 15/10/24 No 1360 HOP SECTT, NTPC KANIHA

Sub: Demand Note for Rs. 3,52,35,858.75/- incl. GST@18% towards cost of flyash dumping for the period from 18.09.2020 to 31.03.2024 in Quarry No VIII of Jagannath OCP, M/s Mahanadi Coalfields Limited Area- Reg.

Ref:
1. MoU between NTPC's TSTPS and MCL Dtd. 18.09.2020 (Clause No.12)
2. Letter vide No MCL/HQ/GM(P&P)/20/206-E Dtd. 04.12.2020
3. Letter vide No P&P/23-24/372-4 dated 14.09.2023 issued by the GM(P&P), MCL

Dear Sir,

In reference to the above cited MOU between NTPS/TSTPS and MCL dtd 18.09.2020, fly ash is being dumped into mine void/disused Quarry No. VIII of the Jagannath OCP. TSTPS has commenced flyash filling into mine void/quarry No VIII from 09.10.2020. 09.10.2021

As per the clause no 12 of the above cited MOU dtd 18.09.2020, "NTPC will pay for the rate of ash filling, to be decided by MCL along with Tax and other levies as applicable from time to time"

The cost of flyash filling is assessed based on the letter ref no MCL/HQ/GM(P&P)/20/206-E dtd. 04.12.2020 and letter ref no P&P/23-24/372-4 14.09.2023 mentioned under reference for the period from 18.09.2020 to 31.03.2024 (FY 2020-21, 2021-22, 2022-23 and 2023-24) and details are as follows.

			As per cost approved w.e.f 23.11.2020		As per Revised cost approved w.e.f 12.09.2023		
Sl No	Year	Quanty of fly ash dumped (Cum)	Cost per cum of ash filling @1.52/Cum	Annual Cost @ Rs.53,33,968.48 in 2020-21 and 10% escalation every year thereafter	Annual Cost @ 1,22,05,461.58, 1st year and 10% Escalation every year+GST	Demand Amount in Rs. excl. GST	Demand Amount in Rs. incl. GST@18%
1	2020-21	0	0.00	53,33,968.48	-	**53,33,968.48**	**62,94,082.80**
2	2021-22	407450	6,19,324.00	58,67,365.33	-	**58,67,365.33**	**69,23,491.09**
3	2022-23	808525	12,28,958.0	64,54,101.86	-	**64,54,101.86**	**76,15,840.20**
4	2023-24	910632	-	-	1,22,05,461.58	**1,22,05,461.58**	**1,44,02,444.66**
					Total	**2,98,60,897.25**	**3,52,35,858.75**

MCL G20 2023 INDIA

OFFICE OF THE GENERAL MANGER
JAGANNATH AREA
PO: DERA COLLIERY, ANGUL (ODISHA), 759103
Ph: +91 (6760) 269528, 269529, 269751
e-mail: gm-joga.mcl@coalindia.in

As per the monthly report submitted by TSTPS, Kaniha, till 31.03.2024, total 2126607 Cum of flyash has been filled into the Quarry No VIII.

For the period from 2020-21 to 2022-23, Flyash filling cost is derived as per the cost norm/methodology as approved vide letter No MCL/HQ/GM(P&P)/20/206-E Dtd. 04.12.2020 and minimum Annual cost is applicable for 2021-22 as the total cost based on cost per Cub.m of ash filling is less than the Annual cost due to less ash filling as projected and for FY 2022-23, Total cost as per cost/cum is to be paid when the total cost as per cost/cum is more than Minimum annual cost with 10% escalation.

For the period 2023-24, Flyash Annual filling cost is ₹ 1,22,05,461.58+GST 1st year derived as approved vide letter No vide No P&P/23-24/372-4 dated 14.09.2023

A detailed calculation of demand assessed for the period from 18.09.2020 to 31.03.2024 is enclosed in Annexure-I

Therefore, the total amount to be paid towards fly ash filling cost for the period from 18.09.2020 to 31.03.2024 comes to Rs. 3,52,35,858.75/- including GST@18%. (Rs. 2,98,60,897.25 + GST@18% Rs. ₹ 53,74,961.50).

You are requested to deposit Rs. 3,52,35,858.75/- including GST@18%. (Rs. 2,98,60,897.25 + GST@18% Rs. ₹ 53,74,961.50). towards the flyash filling cost in the Bank account of MCL , JAGANNATH AREA **(Account No: 11094459258 , SBI TALCHER BRANCH , IFSC SBIN0000192**) or in shape of Demand Draft drawn in favour of "MAHANADI COALFIELDS LIMITED, JAGANNATH AREA", payable at any scheduled Bank at Talcher.

This is for your kind information and further needful action, please.

Yours faithfully

09/10/2024

Project Officer
Jagannath OCP
MCL ,Jagannath Area

Enclosure:

1. As mentioned above

Copy for kind information to:

1. The General Manager, Jagannath Area
2. The General Manager(P&P), MCL HQ
3. The General Manager(E&F), MCL HQ
4. The Area Finance manager, Jagannath Area
5. The Staff Officer (P&P/Envt./Min./Survey), Jagannath Area
6. Office file (NTPC/TSTPS file)

FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Apr-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	578097.26	0.00
2	Value of Stock	(Rs.)	1183240583.33	0.00
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1233862.54	223.40
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-325.13	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1233537.41	223.40
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	6731.27	0.45
7	Net Coal Supplied (5-6)	(MT)	1226806.14	222.95
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,130,662,352.68	3,888,167.21
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	456,485,595.89	-
10	Handling, Sampling and such other similar charges	(Rs.)	2,835,412.84	-
11	Total amount Charged (8+9+10)	(Rs.)	2,589,983,361.41	3888167.21
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	137,087,780.95	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	84561.95	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	26,826,754.07	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	163829973.07	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	2753813334.48	3888167.21
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**2181.31**	**17439.40**
19	Blending Ratio (Domestic/Imported)		99.9860%	0.0140%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2183.45**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2183.45**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3757.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3747.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		0.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5948.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3750.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3750.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3305.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3279.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		0.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		4947.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3287.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3287.00**	

Shailendra Kumar Yadav
Digitally signed by Shailendra Kumar Yadav
Date: 2024.05.24 16:54:41 +05'30'

Raj Kumar Agasti
Digitally signed by Raj Kumar Agasti
Date: 2024.09.29 11:42:01 +05'30'

FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited

Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	May-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	278429.40	0.00
2	Value of Stock	(Rs.)	607340916.87	0.00
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1434983.45	11008.40
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-523.03	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1434460.42	11008.40
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	7981.76	22.02
7	Net Coal Supplied (5-6)	(MT)	1426478.66	10986.38
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,499,659,466.00	147,761,393.93
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	144,466,513.99	-1,663,509.99
10	Handling, Sampling and such other similar charges	(Rs.)	51,852,554.24	-
11	Total amount Charged (8+9+10)	(Rs.)	2,695,978,534.23	146097883.94
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	164,207,754.99	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	59268.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	29,169,053.61	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	193317540.60	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	2889296074.83	146097883.94
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**2050.92**	**13298.09**
19	Blending Ratio (Domestic/Imported)		99.6039%	0.3961%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2095.47**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2095.47**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3750.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3823.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		5948.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5922.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3819.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3819.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3287.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3213.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		4947.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		4874.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3232.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3232.00**	

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FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited

Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Jun-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	142957.06	4686.38
2	Value of Stock	(Rs.)	293194198.97	62319931.83
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1320433.62	65883.20
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-437.08	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1319996.54	65883.20
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	7153.87	131.77
7	Net Coal Supplied (5-6)	(MT)	1312842.67	65751.43
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,262,988,898.89	873,427,491.08
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	184,237,565.00	-16,185,867.82
10	Handling, Sampling and such other similar charges	(Rs.)	157,066,143.59	-
11	Total amount Charged (8+9+10)	(Rs.)	2,604,292,607.48	857241623.26
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	143,368,241.00	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	66483.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	30,443,841.44	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	173745599.44	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	2778038206.92	857241623.26
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**2109.65**	**13054.94**
19	Blending Ratio (Domestic/Imported)		96.4164%	3.5836%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2501.89**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2501.89**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3811.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3724.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		5922.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5952.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3812.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3812.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3225.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3252.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		4874.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		4926.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3309.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3309.00**	

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FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited

Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Jul-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	263772.72	26237.82
2	Value of Stock	(Rs.)	556469069.26	342533156.62
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1294409.93	67570.60
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-472.76	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1293937.17	67570.60
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	6490.91	135.14
7	Net Coal Supplied (5-6)	(MT)	1287446.26	67435.46
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,217,165,118.69	874,554,889.21
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	207,810,860.99	-
10	Handling, Sampling and such other similar charges	(Rs.)	37,486,341.07	-
11	Total amount Charged (8+9+10)	(Rs.)	2,462,462,320.75	874554889.21
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	122,229,692.74	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	0.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	11,571,654.30	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	133801347.04	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	2596263667.79	874554889.21
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**2032.42**	**12992.91**
19	Blending Ratio (Domestic/Imported)		94.5093%	5.4907%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2634.23**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2634.23**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3733.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3734.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		5950.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5905.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3854.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3854.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3249.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3075.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		4923.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		4937.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3205.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3205.00**	

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FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Aug-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	379172.98	25073.28
2	Value of Stock	(Rs.)	770639489.60	325774711.77
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1277748.79	63439.00
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	0.00	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1277748.79	63439.00
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	6579.65	126.88
7	Net Coal Supplied (5-6)	(MT)	1271169.14	63312.12
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,188,014,351.14	801,628,068.80
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	245,000,000.00	3,942,798.00
10	Handling, Sampling and such other similar charges	(Rs.)	23,320,743.29	-
11	Total amount Charged (8+9+10)	(Rs.)	2,456,335,094.43	805570866.80
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	130,725,046.76	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	36542.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	21,874,481.83	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	152562986.59	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	2608898081.02	805570866.80
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**2047.78**	**12800.14**
19	Blending Ratio (Domestic/Imported)		92.1960%	7.8040%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2886.89**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2886.89**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3516.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3517.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		5877.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5873.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3701.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3701.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3084.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	2918.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		4937.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		4973.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3113.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3113.00**	

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FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited

Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Sep-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	604751.12	2643.40
2	Value of Stock	(Rs.)	1238397232.64	33835867.77
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1195525.79	26568.92
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-633.70	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1194892.09	26568.92
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	6160.23	53.14
7	Net Coal Supplied (5-6)	(MT)	1188731.86	26515.78
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,041,620,925.00	340,471,636.15
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-45,919,283.00	-
10	Handling, Sampling and such other similar charges	(Rs.)	115,307,964.72	-
11	Total amount Charged (8+9+10)	(Rs.)	2,111,009,606.72	340471636.15
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	116,819,527.95	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	42681.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	18,235,984.31	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	135012831.26	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	2246022437.98	340471636.15
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**1942.82**	**12836.70**
19	Blending Ratio (Domestic/Imported)		98.0509%	1.9491%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2155.15**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2155.15**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3517.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3510.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		5874.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5922.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3559.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3559.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	2956.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3216.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		4963.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		4994.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3164.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3164.00**	

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FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Oct-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	514375.98	3958.18
2	Value of Stock	(Rs.)	999341171.55	50809949.93
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1345957.26	7747.99
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	0.00	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1345957.26	7747.99
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	7171.83	15.50
7	Net Coal Supplied (5-6)	(MT)	1338785.43	7732.49
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,291,516,082.65	105,201,485.00
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	505,242,926.75	-44,170,058.00
10	Handling, Sampling and such other similar charges	(Rs.)	13,149,985.57	-
11	Total amount Charged (8+9+10)	(Rs.)	2,809,908,994.97	61031427.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	144,281,353.85	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	0.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	22,924,479.11	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	167205832.96	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	2977114827.93	61031427.00
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**2145.77**	**9566.72**
19	Blending Ratio (Domestic/Imported)		99.2236%	0.7764%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2203.38**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2203.38**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3512.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3507.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		5918.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		5966.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3527.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3527.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3128.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3412.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		4994.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		5000.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3346.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3346.00**	

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FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Nov-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	314255.41	0.00
2	Value of Stock	(Rs.)	674319468.38	0.00
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1513482.74	0.00
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-214.38	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1513268.36	0.00
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	8313.31	0.00
7	Net Coal Supplied (5-6)	(MT)	1504955.05	0.00
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,600,870,073.95	-
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	150,000,000.00	-
10	Handling, Sampling and such other similar charges	(Rs.)	37,859,262.22	-
11	Total amount Charged (8+9+10)	(Rs.)	2,788,729,336.17	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	191,002,802.20	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	0.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	27,730,239.52	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	218733041.72	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	3007462377.89	0.00
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**2023.84**	**0.00**
19	Blending Ratio (Domestic/Imported)		100.0000%	0.0000%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**2023.84**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**2023.84**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3508.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3544.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		5950.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		0.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3538.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3538.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3333.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3523.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		4998.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		0.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3490.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3490.00**	

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FORM- 15 : Details of Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited

Name of the Generating Station TSTPS Stage-2

S. No.	Month	Unit	Dec-23	
			Domestic	Imported
			M1149100657	M1149100666
A)	**OPENING QUANTITY**			
1	Opening Quantity of Coal	(MT)	416416.46	0.00
2	Value of Stock	(Rs.)	842758216.71	0.00
B)	**QUANTITY**			
3	Quantity of Coal supplied by Coal Company	(MT)	1639739.22	0.00
4	Adjustment (+/-) in quantity supplied made by Coal Company	(MT)	-212.08	0.00
5	Coal supplied by Coal Company (3+4)	(MT)	1639527.14	0.00
6	Normative Transit & Handling Losses (For Coal based Projects)	(MT)	9334.65	0.00
7	Net Coal Supplied (5-6)	(MT)	1630192.49	0.00
C)	**PRICE**			
8	Amount charged by the Coal Company	(Rs.)	2,823,868,909.00	-
9	Adjustment (+/-) in amount charged made by Coal Company	(Rs.)	-	-
10	Handling, Sampling and such other similar charges	(Rs.)	88,744,775.58	-
11	Total amount Charged (8+9+10)	(Rs.)	2,912,613,684.58	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	165,384,809.00	-
13	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)		
14	Demurrage Charges, if any	(Rs.)	-9578.00	
15	Cost of diesel in transporting Coal through MGR system, if applicable	(Rs.)	28,815,347.09	-
16	Total Transportation Charges (12+13+14+15)	(Rs.)	194209734.09	0.00
17	Total amount Charged for Coal supplied including Transportation (11+16)	(Rs.)	3106823418.67	0.00
E)	**TOTAL COST**			
18	Landed cost of Coal (2+17)/(1+7)	Rs./MT	**1929.82**	**0.00**
19	Blending Ratio (Domestic/Imported)		100.0000%	0.0000%
20	**Weighted average cost of Coal/ Lignite (Including Biomass)**	**Rs./MT**	**1929.82**	
20a	**Weighted average cost of Coal/ Lignite (Excluding Biomass)**		**1929.82**	
F)	**QUALITY (Stage - I, II, III, & IV)**			
21	GCV of Domestic Coal of the opening coal stock as per bill of Coal Company	(kCal/Kg)	3538.00	
22	GCV of Domestic Coal supplied as per bill of Coal Company	(kCal/Kg)	3557.00	
23	GCV of Imported Coal of the opening stock as per bill Coal Company	(kCal/Kg)		0.00
24	GCV of Imported Coal supplied as per bill Coal Company	(kCal/Kg)		0.00
25	**Weighted average GCV of coal as billed (Including Biomass)**	**(kCal/Kg)**	**3553.00**	
25 a	**Weighted average GCV of coal as billed (Excluding Biomass)**	**(kCal/Kg)**	**3553.00**	
26	GCV of Domestic Coal of the opening stock as received at Station	(kCal/Kg)	3490.00	
27	GCV of Domestic Coal / Bio Mass supplied as received at Station	(kCal/Kg)	3423.00	
28	GCV of Imported Coal of opening stock as received at Station	(kCal/Kg)		0.00
29	GCV of Imported Coal supplied as received at Station	(kCal/Kg)		0.00
30	**Weighted average GCV of coal/ Lignite as received (Including Biomass)**	**(kCal/Kg)**	**3437.00**	
30 a	**Weighted average GCV of coal/ Lignite as received (Excluding Biomass)**	**(kCal/Kg)**	**3437.00**	

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Part 1

Details of Sourcewise fuel for computation of Energy Charges Form - 15 version: 1

Company	NTPC Limited
Name of the generating Station	Talcher Super Thermal Power-STAGE 02
Month	January-2024

SL	Particulars	Unit	COAL-DOMESTIC	COAL - IMPORTED
A)	**OPENING QUANTITY**			
1	Opening Stock of coal	MT	563394.95	0.00
2	Value of Stock	Rs.	1087249806.71	0.00
B)	**QUANTITY**			
3	Quantity of Coal /Lignite supplied by Coal / Lignite Company	MT	1418642.56	0.00
3.01	- Qty Received (Pit Head)	MT	489640.97	0.00
3.02	- Qty Received (Non Pit Head)	MT	929001.59	0.00
4	Adjustment (+/-) in quantity supplied made by Coal / Lignite Company	MT	0.00	0.00
5	Coal supplied by Coal/Lignite Company (3+4)	MT	1418642.56	0.00
6	Normative transit & Handling losses (for Coal /Lignite based projects)	MT	8411.30	0.00
6.01	- Normative Loss (Pit Head)	MT	979.28	0.00
6.02	- Normative Loss (Non Pit Head)	MT	7432.02	0.00
7	Net Coal / Lignite supplied (5 - 6)	MT	1410231.26	0.00
C)	**PRICE**			
8	Amount charged by the Coal / Lignite Company	Rs.	2447772679.80	0.00
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	0.00	0.00
10	Handling,Sampling and such other Similar charges	Rs.	66306337.99	0.00
11	Total Amount charged (8 +9+10)	Rs.	2514079017.79	0.00
D)	**TRANSPORTATION**			
12	Transportation charges by Rail / Ship / Road Transport	Rs.	202420988.00	0.00
13	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0.00
14	Demurrage charges, if any	Rs.	0.00	0.00
15	Cost of diesel in transporting Coal through MGR system, if applicable	Rs.	0.00	0.00
16	Total transportation charges (12+/- 13 - 14 + 15)	Rs.	202420988.00	0.00
17	Total amount charged for Coal / Lignite supplied including transportation (11 + 16)	Rs.	2716500005.79	0.00
E)	**TOTAL COST**			
18	Landed Cost of Coal/Lignite (2+17) / (1+7)	Rs./MT	1927.29	0.00
19	Blending Ratio (Domestic/Imported)	%	100.00	0.00
20	Weighted average cost of Coal /Lignite (Including biomass)	Rs./MT	1927.29	
20.10	Weighted average cost of Coal /Lignite (Excluding biomass)	Rs./MT	1927.29	1927.29
F)	**QUALITY**			
21	GCV of Domestic coal of the opening coal stock as per bill of coal company	kCal/Kg	3553	0
22	GCV of Domestic coal supplied as per bill of coal company	kCal/Kg	3572	0
23	GCV of Imported coal of the opening coal stock as per bill of coal company	kCal/Kg	0	5950
24	GCV of Imported coal supplied as per bill of coal company	kCal/Kg	0	0
25	Weighted average GCV of Coal /Lignite as billed (Including biomass)	kCal/Kg	3567	
25.10	Weighted average GCV of Coal /Lignite as billed (Excluding biomass)	kCal/Kg	3567	3567
26	GCV of Domestic coal of the Opening stock as received at station	kCal/Kg	3437	0
27	GCV of Domestic coal/biomass supplied as received at station	kCal/Kg	3432	0
28	GCV of Imported coal of the Opening stock as received at station	kCal/Kg	0	4998
29	GCV of Imported coal supplied as received at station	kCal/Kg	0	0
30	Weighted average GCV of coal/ Lignite as Received (Including biomass)	kCal/Kg	3433	
30.10	Weighted average GCV of coal/ Lignite as Received (Excluding biomass)	kCal/Kg	3433	3433

Submitted On :16.04.2024

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Details of Sourcewise fuel for computation of Energy Charges

Part 1
Form - 15 version: 1

Company	**NTPC Limited**
Name of the generating Station	**Talcher Super Thermal Power-STAGE 02**
Month	**February-2024**

SL	Particulars	Unit	COAL- DOMESTIC	COAL - IMPORTED
A)	**OPENING QUANTITY**			
1	Opening Stock of coal	MT	710984.21	0.00
2	Value of Stock	Rs.	1370272512.32	0.00
B)	**QUANTITY**			
3	Quantity of Coal /Lignite supplied by Coal / Lignite Company	MT	1354494.50	461.20
3.01	- Qty Received (Pit Head)	MT	582108.07	461.20
3.02	- Qty Received (Non Pit Head)	MT	772386.43	0.00
4	Adjustment (+/-) in quantity supplied made by Coal / Lignite Company	MT	0.00	0.00
5	Coal supplied by Coal/Lignite Company (3+4)	MT	1354494.50	461.20
6	Normative transit & Handling losses (for Coal /Lignite based projects)	MT	7343.31	0.92
6.01	- Normative Loss (Pit Head)	MT	1164.22	0.92
6.02	- Normative Loss (Non Pit Head)	MT	6179.09	0.00
7	Net Coal / Lignite supplied (5 - 6)	MT	1347151.19	460.28
C)	**PRICE**			
8	Amount charged by the Coal / Lignite Company	Rs.	2330497245.84	5916513.00
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	0.00	0.00
10	Handling,Sampling and such other Similar charges	Rs.	45347960.81	0.00
11	Total Amount charged (8 +9+10)	Rs.	2375845206.65	5916513.00
D)	**TRANSPORTATION**			
12	Transportation charges by Rail / Ship / Road Transport	Rs.	143993022.00	0.00
13	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0.00
14	Demurrage charges, if any	Rs.	0.00	0.00
15	Cost of diesel in transporting Coal through MGR system, if applicable	Rs.	0.00	0.00
16	Total transportation charges (12+/- 13 - 14 + 15)	Rs.	143993022.00	0.00
17	Total amount charged for Coal / Lignite supplied including transportation (11 + 16)	Rs.	2519838228.65	5916513.00
E)	**TOTAL COST**			
18	Landed Cost of Coal/Lignite (2+17) / (1+7)	Rs./MT	1890.11	12854.16
19	Blending Ratio (Domestic/Imported)	%	100.00	0.00
20	Weighted average cost of Coal /Lignite (Including biomass)	Rs./MT	1890.11	
20.10	Weighted average cost of Coal /Lignite (Excluding biomass)	Rs./MT	1890.11	1890.11
F)	**QUALITY**			
21	GCV of Domestic coal of the opening coal stock as per bill of coal company	kCal/Kg	3567	0
22	GCV of Domestic coal supplied as per bill of coal company	kCal/Kg	3550	0
23	GCV of Imported coal of the opening coal stock as per bill of coal company	kCal/Kg	0	5950
24	GCV of Imported coal supplied as per bill of coal company	kCal/Kg	0	5950
25	Weighted average GCV of Coal /Lignite as billed (Including biomass)	kCal/Kg	3556	
25.10	Weighted average GCV of Coal /Lignite as billed (Excluding biomass)	kCal/Kg	3556	3556
26	GCV of Domestic coal of the Opening stock as received at station	kCal/Kg	3433	0
27	GCV of Domestic coal/biomass supplied as received at station	kCal/Kg	3299	0
28	GCV of Imported coal of the Opening stock as received at station	kCal/Kg	0	4998
29	GCV of Imported coal supplied as received at station	kCal/Kg	0	4998
30	Weighted average GCV of coal/ Lignite as Received (Including biomass)	kCal/Kg	3345	
30.10	Weighted average GCV of coal/ Lignite as Received (Excluding biomass)	kCal/Kg	3345	3345

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Part 1

Details of Sourcewise fuel for computation of Energy Charges

Form - 15 version: 1

Company	NTPC Limited
Name of the generating Station	Talcher Super Thermal Power-STAGE 02
Month	March-2024

SL	Particulars	Unit	COAL-DOMESTIC	COAL - IMPORTED
A)	**OPENING QUANTITY**			
1	Opening Stock of coal	MT	759455.41	460.28
2	Value of Stock	Rs.	1435457491.45	5916513.00
B)	**QUANTITY**			
3	Quantity of Coal /Lignite supplied by Coal / Lignite Company	MT	1445228.76	0.00
3.01	- Qty Received (Pit Head)	MT	685427.98	0.00
3.02	- Qty Received (Non Pit Head)	MT	759800.78	0.00
4	Adjustment (+/-) in quantity supplied made by Coal / Lignite Company	MT	1822.21-	0.00
5	Coal supplied by Coal/Lignite Company (3+4)	MT	1443406.55	0.00
6	Normative transit & Handling losses (for Coal /Lignite based projects)	MT	7436.78	0.00
6.01	- Normative Loss (Pit Head)	MT	1370.16	0.00
6.02	- Normative Loss (Non Pit Head)	MT	6066.62	0.00
7	Net Coal / Lignite supplied (5 - 6)	MT	1435969.77	0.00
C)	**PRICE**			
8	Amount charged by the Coal / Lignite Company	Rs.	2607376486.84	0.00
9	Adjustment (+ / -) in amount charged by coal / Lignite Company	Rs.	3709203.82-	0.00
10	Handling,Sampling and such other Similar charges	Rs.	212261919.01	0.00
11	Total Amount charged (8 +9+10)	Rs.	2815929202.03	0.00
D)	**TRANSPORTATION**			
12	Transportation charges by Rail / Ship / Road Transport	Rs.	155443897.50	0.00
13	Adjustment (+/-) in amount charged by railways / transport company	Rs.	0.00	0.00
14	Demurrage charges, if any	Rs.	863910.00	0.00
15	Cost of diesel in transporting Coal through MGR system, if applicable	Rs.	24993049.34	0.00
16	Total transportation charges (12+/- 13 - 14 + 15)	Rs.	179573036.84	0.00
17	Total amount charged for Coal / Lignite supplied including transportation (11 + 16)	Rs.	2995502238.87	0.00
E)	**TOTAL COST**			
18	Landed Cost of Coal/Lignite (2+17) / (1+7)	Rs./MT	2018.27	12854.16
19	Blending Ratio (Domestic/Imported)	%	99.96	0.04
20	Weighted average cost of Coal /Lignite (Including biomass)	Rs./MT	2022.33	
20.10	Weighted average cost of Coal /Lignite (Excluding biomass)	Rs./MT	2022.33	2022.33
F)	**QUALITY**			
21	GCV of Domestic coal of the opening coal stock as per bill of coal company	kCal/Kg	3556	0
22	GCV of Domestic coal supplied as per bill of coal company	kCal/Kg	3566	0
23	GCV of Imported coal of the opening coal stock as per bill of coal company	kCal/Kg	0	5950
24	GCV of Imported coal supplied as per bill of coal company	kCal/Kg	0	5950
25	Weighted average GCV of Coal /Lignite as billed (Including biomass)	kCal/Kg	3563	
25.10	Weighted average GCV of Coal /Lignite as billed (Excluding biomass)	kCal/Kg	3563	3563
26	GCV of Domestic coal of the Opening stock as received at station	kCal/Kg	3345	0
27	GCV of Domestic coal/biomass supplied as received at station	kCal/Kg	3207	0
28	GCV of Imported coal of the Opening stock as received at station	kCal/Kg	0	4998
29	GCV of Imported coal supplied as received at station	kCal/Kg	0	4998
30	Weighted average GCV of coal/ Lignite as Received (Including biomass)	kCal/Kg	3255	
30.10	Weighted average GCV of coal/ Lignite as Received (Excluding biomass)	kCal/Kg	3255	3255

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Apr-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	2931.07	4706.28
2	Value of Opening Stock	(Rs.)	176046912.48	393814834.97
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**83678.58**
19	**Blending Ratio(Quantity)**		0.00	3.00
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**83678.58**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9902.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9902.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9902.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9902.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	May-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	2931.07	4605.28
2	Value of Opening Stock	(Rs.)	176046912.48	385363298.23
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**83678.58**
19	**Blending Ratio(Quantity)**		0.00	46.00
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**83678.58**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9902.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9902.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9902.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9902.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Jun-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	2931.07	3909.28
2	Value of Opening Stock	(Rs.)	176046912.48	327123005.44
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**83678.58**
19	**Blending Ratio(Quantity)**		0.00	5.00
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**83678.58**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9902.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9902.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9902.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9902.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Jul-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	2931.07	3840.28
2	Value of Opening Stock	(Rs.)	176046912.48	321349183.31
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**83678.58**
19	**Blending Ratio(Quantity)**		**891.00**	**20.00**
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**60580.74**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9902.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9902.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9902.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9993.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Aug-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	2040.07	3488.28
2	Value of Opening Stock	(Rs.)	122531425.48	291894322.59
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**83678.58**
19	**Blending Ratio(Quantity)**		**0.00**	**163.00**
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**83678.58**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9902.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9902.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9902.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9902.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Sep-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	2040.07	2793.28
2	Value of Opening Stock	(Rs.)	122531425.48	233737708.39
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	2970.63
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	2970.63
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	2970.63
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	264549669.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	264549669.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	264549669.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**86449.54**
19	**Blending Ratio(Quantity)**		**853.00**	**5.00**
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**60216.05**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9902.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**9987.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9994.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9902.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**9987.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9994.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Oct-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	1187.07	5754.91
2	Value of Opening Stock	(Rs.)	71298304.93	497509331.51
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**86449.54**
19	**Blending Ratio(Quantity)**		0.00	45.00
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**86449.54**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9899.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9899.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9899.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9899.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Nov-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	1187.07	5589.91
2	Value of Opening Stock	(Rs.)	71298304.93	483245157.15
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**86449.54**
19	**Blending Ratio(Quantity)**		0.00	4.00
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**86449.54**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9899.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9899.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9899.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9899.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Dec-23	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	1187.07	5367.91
2	Value of Opening Stock	(Rs.)	71298304.93	464053358.91
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**86449.54**
19	**Blending Ratio(Quantity)**		0.00	147.00
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**86449.54**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9899.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9899.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9899.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9899.00**	

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FORM- 15 : Details of Secondary Fuel for Computation of Energy Charges

Name of the Petitioner: NTPC Limited
Name of the Generating Station TSTPS

Stage-2

S. No.	Month	Unit	Jan-24	
			HFO	LDO
			M1149201055	M1149200900
A)	**OPENING QUANTITY**			
1	Opening Stock of Oil	(KL)	1187.07	5047.91
2	Value of Opening Stock	(Rs.)	71298304.93	436389505.59
B)	**QUANTITY**			
3	Quantity of LDO supplied by Oil company	(KL)	0.00	0.00
4	Adjustment(+/-) in qnty.supplied made by Oil Comopany	(KL)	0.00	0.00
5	LDO supplied by Oil company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)	0.00	0.00
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
C)	**PRICE**			
8	Amount charged by Oil Company	(Rs.)	0.00	0.00
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)	0.00	0.00
10	Handling, Sampling and such other similar charges	(Rs.)	0.00	0.00
11	Total amount Charged (8+9+10)	(Rs.)	0.00	0.00
D)	**TRANSPORATION**			
12	Transportation charges by rail/ship/road transport	(Rs.)	0.00	0.00
13	Adjustment(+/-) in amount made byRailways/ Transport Company	(Rs.)	0.00	0.00
14	Demurrage Charges, if any	(Rs.)	0.00	0.00
15	Total Transportation Charges (12+13+14+15)	(Rs.)	0.00	0.00
16	Other Charges	(Rs.)	0.00	0.00
17	Total Amount charged for Oil supplied including transportation (11+15+16)	(Rs.)	0.00	0.00
E)	**TOTAL COST**			
18	**Weighted average cost of Oil**	**(Rs./KL)**	**60062.27**	**86449.54**
19	**Blending Ratio(Quantity)**		120.00	0.00
20	**Weighted Average Cost of Secondary Fuel/ For the month**	**(Rs./KL)**	**60062.27**	
F)	**QUALITY**			
21	GCV of Domestic Secondary Fuel of the opening stock as per bill of Secondary Fuel Company	Kcal/KL	**9995.00**	**9899.00**
22	GCV of Domestic Secondary Fuel supplied as per bill of Secondary Fuel Company,	Kcal/KL	**0.00**	**0.00**
23	GCV of Imported Secondary Fuel of the opening stock as per bill of Secondary Fuel Company,	Kcal/KL	**NA**	**NA**
24	GCV of Imported Secondary Fuel supplied as per bill of Secondary Fuel Company	Kcal/KL	**NA**	**NA**
25	Weighted average GCV of Secondary Fuel/ as Billed	Kcal/KL	**9899.00**	
26	GCV of Domestic Secondary Fuel of the opening stock as received at Station	Kcal/KL	**9995.00**	**9899.00**
27	GCV of Domestic Secondary Fuel supplied as received at Station	Kcal/KL	**0.00**	**0.00**
28	GCV of Imported Secondary Fuel of opening stock as received at Station	Kcal/KL	**NA**	**NA**
29	GCV of Imported Secondary Fuel of supplied as received at Station	Kcal/KL	**NA**	**NA**
30	**Weighted average GCV of Secondary Fuel/ as Received**	**Kcal/KL**	**9995.00**	

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FORM-15 Ver- 0

Details of Sourcewise fuel for computation of Energy Charges

Company	NTPC Limited
Name of the generating Station	Talcher Super Thermal Power(STAGE 02)
Month	February-2024

SL	Particulars	Unit	LDO	HFO	HSD
A)	**OPENING QUANTITY**				
1	Opening Stock Of Oil	KL	5029.910	1067.070	0.000
2	Value Of Stock	Rs.	434833413.84	64090831.94	0.00
B)	**QUANTITY**				
3	Quantity Of Oil Supplied By Oil Company	KL	0.000	0.000	0.000
4	Adjustment (+/-) In Quantity Supplied Made By Oil Company	KL	0.000	0.000	0.000
5	Oil Supplied By Oil Company (3+4)	KL	0.000	0.000	0.000
6	Normative Transit & Handling Losses	KL	0.000	0.000	0.000
7	Net Oil Supplied (5 - 6)	KL	0.000	0.000	0.000
C)	**PRICE**				
8	Amount Charged By The Oil Company	Rs.	0.00	0.00	0.00
9	Adjustment (+ / -) In Amount Charged By Oil Company	Rs.	0.00	0.00	0.00
10	Handling,Sampling And Such Other Similar Charges	Rs.	0.00	0.00	0.00
11	**Total Amount Charged (8 +9+10)**	**Rs.**	**0.00**	**0.00**	**0.00**
D)	**TRANSPORTATION**				
12	Transportation Charges By Rail / Ship / Road Transport	Rs.	0.00	0.00	0.00
13	Adjustment (+/-) In Amount Charged By Railways/Transport	Rs.	0.00	0.00	0.00
14	Demurrage Charges, If Any	Rs.	0.00	0.00	0.00
15	Cost Of Diesel InTransporting Coal Through MGR System	Rs.	0.00	0.00	0.00
16	Total Transportation Charges (12+/- 13 - 14 + 15)	Rs.	0.00	0.00	0.00
17	Total Amount Charged For Oil Supplied Incl Transportation (11+16)	Rs.	0.00	0.00	0.00
E)	**TOTAL COST**				
18	Landed Cost Of Oil (LDO/HFO) (2+17) / (1+7)	Rs.	86449.54	60062.44	0.00
19	Blending Ratio		1.000	0.000	0.000
20	**Weighted Average Cost Of Oil**	**Rs.**	**86449.54**		
F)	**QUALITY**				
21	GCV Of Oil Of The Opening Stock As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
22	GCV Of Oil Supplied As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
23	GCV Of Imported Oil Of The Op Stock As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
24	GCV Of Imported Oil Supplied As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
25	Weighted Average GCV Of Oil As Billed	Kcal/Ltr	0	0	0
26	GCV Of Oil Of The Opening Stock As Received At Station	Kcal/Ltr	0	0	0
27	GCV Of Oil Supplied	Kcal/Ltr	9899	9995	0
28	GCV Of Imported Oil Of The Opening Stock As Received At Station	Kcal/Ltr	0	0	0
29	GCV Of Imported Oil Supplied As Received At Station	Kcal/Ltr	0	0	0
30	**Weighted Average GCV Of Oil**	**Kcal/Ltr**	**9899**		

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FORM-15 Ver- 0

Details of Sourcewise fuel for computation of Energy Charges

Company	NTPC Limited
Name of the generating Station	Talcher Super Thermal Power(STAGE 02)
Month	March-2024

SL	Particulars	Unit	LDO	HFO	HSD
A)	**OPENING QUANTITY**				
1	Opening Stock Of Oil	KL	4905.910	0.000	0.000
2	Value Of Stock	Rs.	424113670.68	0.00	0.00
B)	**QUANTITY**				
3	Quantity Of Oil Supplied By Oil Company	KL	0.000	0.000	0.000
4	Adjustment (+/-) In Quantity Supplied Made By Oil Company	KL	0.000	0.000	0.000
5	Oil Supplied By Oil Company (3+4)	KL	0.000	0.000	0.000
6	Normative Transit & Handling Losses	KL	0.000	0.000	0.000
7	Net Oil Supplied (5 - 6)	KL	0.000	0.000	0.000
C)	**PRICE**				
8	Amount Charged By The Oil Company	Rs.	0.00	0.00	0.00
9	Adjustment (+ / -) In Amount Charged By Oil Company	Rs.	0.00	0.00	0.00
10	Handling,Sampling And Such Other Similar Charges	Rs.	0.00	0.00	0.00
11	**Total Amount Charged (8 +9+10)**	**Rs.**	**0.00**	**0.00**	**0.00**
D)	**TRANSPORTATION**				
12	Transportation Charges By Rail / Ship / Road Transport	Rs.	0.00	0.00	0.00
13	Adjustment (+/-) In Amount Charged By Railways/Transport	Rs.	0.00	0.00	0.00
14	Demurrage Charges, If Any	Rs.	0.00	0.00	0.00
15	Cost Of Diesel InTransporting Oil Through MGR System	Rs.	0.00	0.00	0.00
16	Total Transportation Charges (12+/- 13 - 14 + 15)	Rs.	0.00	0.00	0.00
17	Total Amount Charged For Oil Supplied Incl Transportation (11+16)	Rs.	0.00	0.00	0.00
E)	**TOTAL COST**				
18	Landed Cost Of Oil (LDO/HFO) (2+17) / (1+7)	Rs.	86449.54	0.00	0.00
19	Blending Ratio		1.000	0.000	0.000
20	**Weighted Average Cost Of Oil**	**Rs.**	**86449.54**		
F)	**QUALITY**				
21	GCV Of Oil Of The Opening Stock As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
22	GCV Of Oil Supplied As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
23	GCV Of Imported Oil Of The Op Stock As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
24	GCV Of Imported Oil Supplied As Per Bill Of Oil Company	Kcal/Ltr	0	0	0
25	Weighted Average GCV Of Oil As Billed	Kcal/Ltr	0	0	0
26	GCV Of Oil Of The Opening Stock As Received At Station	Kcal/Ltr	0	0	0
27	GCV Of Oil Supplied	Kcal/Ltr	9899	0	0
28	GCV Of Imported Oil Of The Opening Stock As Received At Station	Kcal/Ltr	0	0	0
29	GCV Of Imported Oil Supplied As Received At Station	Kcal/Ltr	0	0	0
30	**Weighted Average GCV Of Oil**	**Kcal/Ltr**	**9899**		

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Annexure J

Annexure A/11

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

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

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

Encl: Guidelines on Cyber Security

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

CEA (Cyber Security in Power Sector) Guidelines, 2021

1.0 Background

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

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

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

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

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

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

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

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

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

2.1 **Objective of issuing Guideline**:

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

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

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

2.3 **Applicability:**

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

2.4 **Scope:**

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

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

2.4.2 **Communication System.**

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

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

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

3.0 Definition of Terms:

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

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

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

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

4.0 Standards

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

5.0 Abbreviations

Abbreviations		Description
a)	BES	Bulk Electric System

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

CEA (Cyber Security in Power Sector) Guidelines, 2021

Article 1. Cyber Security Policy.

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

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

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

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

Article 2 Appointment of CISO.

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

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

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

Article 4. Electronic Security Perimeter

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

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

Article 5. Cyber Security Requirements

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

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

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

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

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

Article 6 Cyber Risk Assessment and Mitigation Plan

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

Article 7 Phasing out of Legacy System

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

Article 8. Cyber Security Training.

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

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

Article 9 Cyber Supply Chain Risk Management

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

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

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

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

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

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

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

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

Article 10 Cyber Security Incident Report and Response Plan

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

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

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

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

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

Article 11 Cyber Crisis Management Plan(C-CMP)

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

Article 12: Sabotage Reporting%

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

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

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

Article 13 Security and Testing of Cyber Assets

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

Article 14 Cyber Security Audit

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

FAT & SAT

1. During FAT stage, the customer has to verify all types test reports / certificates including Communication protocol and security conformance tests of the devices offered for FAT.
2. FAT of SCADA involves testing as a whole system in the integrated scale down set up. For SCADA, Indian standard IS 15953: 2011 "SCADA System for Power System Applications" provides definition and guidelines for the specification, performance analysis and application of SCADA systems for use in electrical utilities (for transmission & Distribution) including guidance on Tests and inspections.
3. The SAT will be done at customer site as per the SAT document mutually agreed by buyer and supplier. For SAT also, guidance from IS 15953: 2011need to be applied.
4. IEC 61850-10-3 Communication Networks and Systems For Power Utility Automation-Functional testing of IEC 61850 systems (in draft stage - CDTR) covers testing of applications within substations covering

    a. A methodical approach to the verification and validation of a substation solution
    b. The use of IEC 61850 resources for testing in Edition 2.1
    c. Recommended testing practices for different use cases
    d. Definition of the process for testing of IEC 61850 based devices and systems using communications instead of hard wired system interfaces (ex. GOOSE and SV instead of hardwired interfaces)
    e. Use cases related to protection and control functions verification and testing.

    This standard may be used as a guidelines for FAT & SAT for Substation Automation System (SAS) based on IEC 61850.

Annexure - B

Annexure – 1

List of designated laboratories for cyber security conformance testing

Table -A. Field Equipment /Operational Technology (OT)

Sl. No.	Equipment	Communication Protocol Conformance Standards	Protocol Security Conformance Standards	Designated Laboratories
1	Remote Terminal Units (RTUs) & PLCs with IEC communications protocols	IEC 60870-5 -101 / IEC 60870-5 -104 (Test Details Annexure 2)	IEC 60870-5- 7 Security extension & IEC 62351 series (specifically IEC 62351-100 parts 1 & 3) (Test Details Annexure-2	Central Power Research Institute (CPRI), Prof Sir C V Raman Road, Sadashivanagar P O, Bengaluru – 560080, Karnataka
2	Intelligent Electronic Equipment / Numerical Protection Relays / Bay Control Units / Bay Protection Units, Gateways, Transformer Tap controller/ changer, etc. with IEC 61850 communication protocol	IEC 61850 – 5 to IEC 61850 – 10 (Test Details Annexure 2)		CPRI
3	Smart meters with IEC 62056 communication protocols	IEC 62056 series / DLMS & IS 15959 series and IS 16444 series (Test details Annexure 2)	IEC 62056 series / DLMS & IS 15959 series and IS 16444 series (Test Details Annexure 2)	1. CPRI 2. Electrical Research and Development Association (ERDA), ERDA Road, GIDC, Makarpura, Vadodara - 390 010 Gujarat 3. Yadav Measurements Pvt. Ltd. (YMPL) 373-375, RIICO Bhamashah Industrial Area Kaladwas 313003 Udaipur – Rajasthan

Information Technology (IT) Equipment (Main / Backup / Disaster recovery (DR) Control Centre / Substation control centre IT equipment)

All IT products procured /supplied shall have a valid Certificate of Common Criteria as per ISO/IEC 15408 issued by signatories of the Common Criteria Recognition Agreement (CCRA) (www.commoncriteriaportal.org).

Import/procurement/supplied from vendors sourcing from prior reference countries, the Certificate for Common Criteria shall be from Government Laboratories in India according to the IC3S scheme operated by Ministry of Electronics and Information Technology, which is a signatory to CCRA.

https://www.commoncriteria-india.gov.in/

Details of tests for various identified products

Remote Terminal Units (RTUs) (Sl. No. 1 of Table – A of Annexure – 1)

Test protocol:

Utilities / manufacturers will submit the sample along with all the required technical documentation for taking up testing to the designated laboratory.

Reference standards

1) IEC 60870-5-101 & IEC 60870-5-104 as applicable

2) IEC 60870-5-7 Telecontrol equipment and systems - Part 5-7: Transmission protocols - Security extensions to IEC 60870-5-101 and IEC 60870-5-104 protocols (applying IEC 62351)

3) IEC 62351-100-1 & IEC 62351-100-3 and other cross referenced standards.

Test cases

Extract from standard (IEC 62351-100-1)

The conformance test cases are divided into four clauses:

- Clause 5: Verification of configuration parameters. This clause contains the configuration parameters affecting the message contents and/or the protocol behaviour.
- Clause 6: Verification of communication. The goal of this clause is to verify that Device Under Test (DUT) is able to implement the security extension messages as described in IEC TS 60870-5-7.
- Clause 7: Verification of procedures. The goal of this clause is to verify that DUT is able to execute the security extension procedures as described in IEC TS 62351-5.
- Clause 8: Test result chart. This clause contains the results of the test cases listed in Clauses 6 and 7 for each supported value of the configuration parameters listed in Clause 5.

The test cases are organized in tables. They are numbered; their numbering syntax is: Subclause number (where the Table is located) + test case number.

In the column ‘reference’ each test case has a direct reference to IEC TS 62351-5 or IEC TS 60870-5-7 where the clause under test is defined.

Test cases are mandatory depending on the description in the column ‘Required’. The following situations are possible:

M= Mandatory test case. The test is referencing a clause that is mandatory in IEC TS 62351-5 or IEC TS 60870-5-7.

Protocol Information Conformance Statement (PICS) x, x = Mandatory test case if the functionality is enabled in the PICS (by marking the applicable check box), with a reference to the section number of the PICS (x.x).

Conformance testing of security extension procedures

The security extension procedures can be summarized as follows:

- User management
- Update key maintenance
- Session key maintenance
- Challenge/Reply authentication
- Aggressive Mode authentication

Extract from standard (IEC 62351-100-3)

IEC 62351-3 defines the requirements related to the authentication/encryption protocol, procedures and methods to be implemented at TCP/IP (transport) level.

The conformance test cases are divided into three clauses:

- Clause 5: Verification of configuration parameters. This clause contains the parameters specified by the standards referencing IEC 62351-3 (see IEC 62351-3:2014/AMD1:2018, Clause 7) and affecting the protocol behaviour.
- Clause 6: Verification of IEC 62351-3 requirements. The goal of this clause is to verify that DUT is conformant to the requirements of the IEC 62351-3.
- Clause 7: Test result chart. This clause contains the results of the test cases listed in Clause 6 for each supported value of the configuration parameters listed in Clause 5.

The test cases are organized in tables. They are numbered, their numbering syntax is: Subclause number (where the table is located) + test case number.

In the column 'Reference' each test case has a direct reference to IEC 62351-3 where the clause under test is defined. PICS or Protocol Implementation eXtra Information for Testing (PIXIT) could be found in the "Reference" column for some test cases whenever the execution of the test case shall take into account specific parameter values declared in the PICS or PIXIT of the DUT.

Test cases are mandatory depending on the description in the column 'Required'. The following situations are possible:

M = Mandatory test case. The test is referencing to a clause that is mandatory in IEC 62351-3.

PICS

or

PIXIT = Mandatory test case if the functionality is enabled in the PICS or PIXIT by marking the applicable check box or declaring the applicable value.

Intelligent Electronic Devices (IEDs) (Sl. No. 2 of Table – A of Annexure – 1)

Utilities / manufacturers will submit the sample along with all the required technical documentation for taking up testing to the designated laboratory.

Reference standards

IEC 61850 series

Specifically IEC 61850-5, IEC 61850-6, IEC 61850-7, IEC 61850-8, IEC 61850-9 and IEC 61850-10

Test cases

Communication protocol conformance as per IEC 61850 -10. This part of standard defines methods and abstract test cases for conformance testing of client, server and sampled values devices used in power utility automation systems, the methods and abstract test cases for conformance testing of engineering tools used in power utility automation systems, and the metrics to be measured within devices according to the requirements defined in IEC 61850-5. Further this part of standard specifies standard techniques for testing of conformance of client, server and sampled value devices and engineering tools, as well as specific measurement techniques to be applied when declaring performance parameters. The use of these techniques will enhance the ability of the system integrator to integrate IEDs easily, operate IEDs correctly, and support the applications as intended.

Smart Meters (Sl. No. 3 of Table – A of Annexure – 1)

Utilities / manufacturers will submit the sample along with all the required technical documentation for taking up testing to the designated laboratory.

IEC 62056 series of standards (Electricity metering data exchange – The DLMS/COSEM suite) specifies details of communication protocol requirements, conformance testing and security requirements. The Part 5-3 (DLMS/COSEM application layer) specifies the DLMS/COSEM application layer in terms of structure, services and protocols for DLMS/COSEM clients and servers, and defines rules to specify the DLMS/COSEM communication profiles. It defines services for establishing and releasing application associations, and data communication services for accessing the methods and attributes of COSEM interface objects, defined in IEC 62056-6-2 using either logical name (LN) or short name (SN) referencing.

Clause 5 and sub clauses specifies security requirements. It cover security concepts, Identification and authentication, Cryptographic algorithms, Cryptographic keys – overview, Key used with symmetric key algorithms, Keys used with public key algorithms and Applying cryptographic protection.

Note: All above referred standards shall be latest with amendments if any at the time of submission of sample(s) for testing.

Annexure – 3

Testing Criteria

1) Supply from Trusted Sources

The sample size shall be as specified by CEA as per the approved criteria for Trusted Vendors

2) Supply from other than trusted vendors

The sample size shall be shall be 5% of the supply lot / ordered quantity (minimum one). The manufacturer shall submit request to the Nodal agency along with vendor's / manufacturer's certifications for supply chain management system practices and secure product development process implementations based on any one or more of standards ISO / IEC 27036, ISO / IEC 20243, IEC 62443 for verification.

After scrutiny of vendor's / manufacturer's certifications the supplier / utilities shall be asked to submit product to the designated laboratory for communication and cyber security conformance testing.

The supply lot shall stand rejected on failure to comply with the test requirements.

3) Supply from prior reference countries

The utility shall obtain prior permission from the Government of India for importing the product / system from prior reference countries.

The sample size shall be shall be 10 % of the supply lot / ordered quantity (minimum one). The manufacturer shall submit request to the Nodal agency along with vendor's / manufacturer's certifications for supply chain management system practices and secure product development process implementations based on any one or more of standards ISO / IEC 27036, ISO / IEC 20243, IEC 62443 for verification.

After scrutiny of vendor's / manufacturer's certifications the supplier / utilities shall be asked to submit product to the designated Government / Government controlled Autonomous laboratory for type tests (Annexure – 4) and communication & cyber security conformance testing.

The supply lot shall stand rejected on failure to comply with the test requirements.

Type Tests

Products imported from prior reference countries shall also undergo type testing as per following standards in addition to communication protocol and security conformance testing at the designated Government / Government controlled Autonomous laboratory:

Type test standards for RTUs

1. IEC 60870-1-2:1989 Telecontrol equipment and systems. Part 1: General considerations. Section Two: Guide for specifications.
2. IEC 60870-2-1:1995 Telecontrol equipment and systems - Part 2: Operating conditions - Section 1: Power supply and electromagnetic compatibility.
3. EC 60870-2-2:1996 Telecontrol equipment and systems - Part 2: Operating conditions -Section 2: Environmental conditions (climatic, mechanical and other non-electrical influences).
4. IEC 60870-3:1989 Telecontrol equipment and systems. Part 3: Interfaces (electrical characteristics)

Type test standard for IEDs / Numerical Protection Relays / Bay controls units

1. IEC 61850-3: 2013, Ed. 2 Communication networks and systems for power utility automation – Part 3: General requirements.

Type test standards for Smart meters

1. IS 16444: 2015 AC static direct connected watthour smart meter class 1 and 2 – Specification.
2. IS 16444 Part 2: 2017 AC static transformer operated watthour and var - Hour smart meters, class 0.2 S, 0.5 S and 1.0 S: Part 2 specification transformer operated smart meters.

Note:

1. All above referred standards shall be latest with amendments if any at the time of submission of sample(s) for testing.
2. Type tests generally covers functionality, environmental, mechanical, EMI/ EMC and electrical safety related tests.