एनटीपीसी
NTPC
A Maharatna Company

Petition No : .....

Talcher Super Thermal Power Station Stage-II

(4x500 MW)

TARIFF PETITION FOR THE PERIOD
01.04.2019 TO 31.03.2024

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO.....

IN THE MATTER OF : Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for approval of tariff of **Talcher Super Thermal Power Station, Stage-II (2000MW) for the period from 01.04.2019 to 31.03.2024**.

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AND
IN THE MATTER OF

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

Respondents

1. AP Eastern Power Distribution Company Ltd. (APEPDCL)
Corporate Office
P&T Colony, Seethammadhara,
Visakhapatnam – 530 013 - (AP)

2. AP Southern Power Distribution Company Ltd. (APSPDCL)
Corporate Office
Back Side Srinivasa Kalyana Mandapam
Tiruchhanur Road, Kesavayana Gunta,
Tirupathi – 517 503 (AP)

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

4. Telangana State Southern Power Distribution Company Ltd.
(TSPDCL)
Mint Compound
Corporate Office
Hyderabad (AP) – 500 063.

5. Tamil Nadu Generation & Distribution Corporation Ltd.
(TANGEDCO) (formerly TNEB)
144, Anna Salai
Chennai – 600 002

6 Bangalore Electricity Supply Company Ltd. (BESCOM)
Krishna Rajendra Circle
Bangalore - 560 009.

7 Mangalore Electricity Supply Company Ltd (MESCOM)
MESCOM bhavana,
Corporate Office,
Bejai, kavoor cross road,mangaluru,
575004, Karnataka

8 Chamundeshwari Electricity Supply Corp. Ltd.(CESCorp)
Corporate Office, No. 29,
Vijayanagar, 2nd stage, Hinkal,
Mysore – 570 017.

9 Gulbarga Electricity Supply Company Ltd. (GESCOM)
Main road, Gulbarga, Karnataka.
Gulbarga – 585 102.

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

11 Kerala State Electricity Board Ltd.(KSEBL)
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

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 in different regions and places in the country. **Talcher Super Thermal Power Station, Stage-II (4X500 MW)** (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, 2019 (hereinafter 'Tariff Regulations 2019') which came into force from 01.04.2019, specifying the terms & conditions and methodology of tariff determination for the period 01.04.2019 to 31.03.2024.

5) Regulation 9(2) of Tariff Regulations 2019 provides as follows:

"(2) In case of an existing generating station or unit thereof, or transmission system or element thereof, the application shall be made by the generating company or the transmission licensee, as the case may be, by 31.10.2019, based on admitted capital cost including additional capital expenditure already admitted and incurred up to 31.3.2019 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2019-24 along with the true up petition for the period 2014-19 in accordance with the CERC (Terms and Conditions of Tariff) Regulations, 2014."

The date of filing of Tariff Petition for the period 2019-24 has subsequently been extended by Hon'ble Commission vide order dated 28.10.2019 in Petition No. 331/MP/2019.

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

6) The tariff of the TSTPS-II for the tariff period 1.4.2014 to 31.3.2019 was determined by the Hon'ble Commission vide its order dated 16.02.17 in Petition No. 293/GT/2014 . In accordance with the CERC (Terms & Conditions of Tariff) Regulations 2014. The Petitioner thereafter had filed an Appeal (being No. 10 of 2018) in Appellate Tribunal of Electricity on certain aspects of the order dated 16.02.2017 The appeal is under consideration of the Hon'ble Appellate Tribunal of Electricity. The petitioner vide affidavit dated 17.01.20 has filed a separate true up petition for the period 01.04.2014 to 31.03.2019 for revision of tariff in line with the applicable provisions of Tariff Regulations 2014.

7) The Hon'ble Commission vide order dated 16.02.2017 in Petition no 293/GT/2014 has allowed a capital cost of Rs 5747.26 Cr. as on 31.03.2019 based on the admitted projected capital expenditure for the 2014-19 period. However, the actual closing capital cost as on 31.03.2019 has been worked out in the foresaid true-up petition as Rs. 5581.57 Crs based on the actual expenditure after truing up exercise for the period 2014-19. Accordingly, the Petitioner has adjusted an amount of Rs. (-) 165.68 Cr from the admitted capital cost as on 31.03.2019 and accordingly the opening capital cost as on 01.04.2019 has been considered as Rs 5581.57 Cr. in the instant petition. The Hon'ble Commission may be pleased to accordingly adopt this adjustment in the admitted capital cost as on 31.3.2019 and determine the tariff in the present petition for the period 2019-24.

8) The capital cost claimed in the instant petition is based on the opening capital cost as on 01.04.2019 considered as above and projected estimated capital expenditures for the period 2019-24 under Regulation 19 and Regulation 25, 26 and 76 of the Tariff Regulations, 2019.

9) As per Regulation 35(1)(6) of the Tariff Regulations 2019, the water charges, security expenses and capital spares consumed for thermal generating stations are to be allowed separately. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2018-19 have been furnished below. As per Water resources Dept notification dtd 27.09.2016 Water charges/License fees are to be escalated at 10% per year w.e.f 01.04.2017 (Copy of latest water charges attached at **Annexure-I**). Accordingly, water charges may be allowed in tariff based on the same for the 2019-24. In accordance with provision of the Regulations, the petitioner shall be furnishing the details of actuals for the relevant year at the time of truing up and the same shall be subject to retrospective adjustment.

Description	**Remarks**
Type of Plant	Coal based
Type of cooling water system	Closed Cycle with IDCT
Consumption of Water	2.90 TMC (For TSTPS-I & II)
Rate of Water charges	Rs 6.72 / cum
Total Water Charges	Rs 4200.67 Lakh (proportioned based on MW capacity from total paid amount)

10) Similarly, the Petitioner is claiming the security expenses based on the estimated expenses for the period 2019-24, the same shall be subject to retrospective adjustment based on actuals at the time of truing up. In respect of capital spares consumption, it is submitted that the same shall be claimed at the time of true-up in terms of the proviso to the Regulation 35 (1)(6) based on actual consumption of spares during the period 2019-24.

11) The present petition is filed on the basis of norms specified in the Tariff Regulations 2019. It is submitted that the petitioner is in the process of installing the Emission Control Systems (ECS) in compliance of the Revised Emission Standards as notified by MOEF vide notification dated 07.12.2015 as amended. Completion of these schemes in compliance of revised emission norms will effect the station APC, Heat Rate , O&M expenses etc. In addition the availability of the unit/ station would be also effected due to shutdown of the units for installation of ECS. The petitioner would be filing the details of the same in a separate petition in terms of the Regulation 29 of Tariff Regulations 2019. The tariff of the instant petition would undergo changes consequent to the order of the Hon'ble Commission in the said ECS petition.

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

"31. Accordingly, we in exercise of the regulatory power hold that the actual additional expenditure incurred by the Petitioner towards transportation of ash in terms of the MOEFCC Notification is admissible under "Change in Law" as additional O&M expenses. However, the admissibility of the claims is subject to prudence check of the following conditions on case to case basis for each station:
a) Award of fly ash transportation contract through a transparent competitive bidding procedure. Alternatively, the schedule rates of the respective State Governments, as applicable for transportation of fly ash.
b) Details of the actual additional expenditure incurred on Ash transportation after 25.1.2016, duly certified by auditors.
c) Details of the Revenue generated from sale of fly ash/ fly ash products and the expenditure incurred towards Ash utilisation up to 25.1.2016 and from 25.1.2016 to till date, separately.
d) Revenue generated from fly Ash sales maintained in a separate account as per the MoEF notification.

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

Petitioner has claimed the additional expenditure towards ash transportation charges for the period 2017-18 and 2018-19 in the true-up petition filed vide affidavit dated 17.01.20 in respect of the instant station.

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

13) The Petitioner has already paid the requisite filing fee vide UTR No. CMS1106438370 on 22.04.19 for the year 2019-20 and the details of the same have been duly furnished to the Hon'ble Commission vide our letter dtd. 25.04.19. For the subsequent years, it shall be paid as per the provisions of the CERC (Payment of Fees) Regulations, 2012 as amended. Further Regulation 70 (1) of Tariff Regulations 2019 provides that the application fee and publication expenses may be allowed to be recovered directly from the beneficiaries at the discretion of the Hon'ble Commission. Accordingly, it is prayed that Hon'ble Commission may be pleased to allow recovery of filing fee and publication fee directly from the beneficiaries.

14) The petitioner has accordingly calculated the tariff for 2019-24 period based on the above and the same is enclosed as **Appendix-I** to this petition.

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

16) 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 31.3.2014 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, prays that the Hon'ble Commission may be pleased to:

i) Approve tariff of **Talcher Super Thermal Power Station, Stage-II (2000MW)** for the tariff period 01.04.2019 to 31.03.2024.

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

iii) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries quarterly on net basis.

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

Petitioner

Place: New Delhi

Date: 30.01.2020

BEFORE THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO.....

IN THE MATTER OF	:	Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for approval of tariff of **Talcher Super Thermal Power Station, Stage-II (2000MW) for the period from 01.04.2019 to 31.03.2024.**
AND **IN THE MATTER OF**		
Petitioner:	:	NTPC Ltd. NTPC Bhawan Core-7, Scope Complex 7, Institutional Area, Lodhi Road New Delhi-110 003
Respondents		1. AP Eastern Power Distribution Company Ltd. (APEPDCL) Corporate Office P&T Colony, Seethammadhara, Visakhapatnam – 530 013 - (AP) AND OTHERS

Affidavit

I, Rohit Chhabra, son of Sh. S M Chhabra, aged about 54 years, having office at NTPC Bhavan, SCOPE Complex, Lodhi Road, New Delhi do solemnly affirm and state as under:

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

2. That I have read the contents of the accompanying Petition being filed by NTPC and have understood the same.

3. That the contents of the accompanying Petition being filed by NTPC are based on information available with the Petitioner in the normal course of business and believed by the deponent to be true.

Deponent

Verification

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

Verified at New Delhi on this day 30th January 2020.

Deponent

NOTARIAL

NOTARY R.V. SINGH Advocate Regn. No. 2262 Commission Expires 24-10-2012 Area-Delhi GOVT. OF INDIA

TARIFF FILING FORMS (THERMAL)

FOR DETERMINATION OF TARIFF

FOR

Talcher Super Thermal power Station Stage-II

(From 01.04.2019 to 31.03.2024)

PART-I

APPENDIX-I

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

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

Provided yearwise for the period 2019-24

**** Additional Forms**

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

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	✓

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

List of supporting documents for tariff filing for Thermal Stations

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

* Shall be submitted 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 Stage-II**
Place (Region/District/State):	**Southern Region/ Angul / Odisha**

Amount in Rs. Lakhs

S. No.	Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9
1.1	Depreciation	Rs Lakh	9,612.98	11,044.19	13,260.48	15,379.39	18,282.48	21,009.23
1.2	Interest on Loan	Rs Lakh	0.00	268.12	553.20	503.14	473.36	250.97
1.3	Return on Equity	Rs Lakh	32,882.23	32,182.59	33,422.75	34,299.22	35,398.66	36,296.85
1.4	Interest on Working Capital	Rs Lakh	15,446.40	10,627.38	10,796.46	10,954.25	11,131.95	11,300.26
1.5	O&M Expenses	Rs Lakh	52,260.64	52214.47	54394.93	56674.35	59042.72	61499.59
1.6	Special Allowance (If applicable)	Rs Lakh	0.00	0.00	0.00	0.00	0.00	0.00
1.7	Compensation Allowance (If applicable – relevant for column 4 only)	Rs. Lakh	400.00					
	Total	Rs Lakh	**110602.25**	**106336.77**	**112427.82**	**117810.35**	**124329.18**	**130356.90**
2.1	Landed Fuel Cost (Domestic coal)	Rs/Ton	1804.74					
	(%) of Fuel Quantity	(%)						
2.2	Landed Fuel Cost Imported Coal		6734.34					
	(%) of Fuel Quantity							
2.3	Landed Fuel Cost (coal/gas /RLNG/liquid) other than FSA	Rs/Ton	NA					
	(%) of Fuel Quantity	(%)						
2.4	Landed Fuel Cost Imported Coal other than FSA.		NA					
	(%) of Fuel Quantity							
2.5	Secondary fuel oil cost	Rs/Unit	0.021					
	Energy Charge Rate ex-bus (Paise/kWh)	Rs/Unit	1.850					

(Petitioner)

PART-I

FORM- 1(I)

Name of the Petitioner:	NTPC Limited
Name of the Generating Station:	Talcher Super Thermal power Station Stage-II

Amount in Rs. Lakhs

Statement showing claimed capital cost – (A+B)

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	Opening Capital Cost	5,58,157.70	5,84,162.70	6,03,911.70	6,23,197.70	6,50,941.70
2	Add: Addition during the year/period	26,005.00	19,749.00	19,286.00	27,744.00	10,370.00
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	5,84,162.70	6,03,911.70	6,23,197.70	6,50,941.70	6,61,311.70
7	**Average Capital Cost**	**5,71,160.20**	**5,94,037.20**	**6,13,554.70**	**6,37,069.70**	**6,56,126.70**

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

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	Opening Capital Cost	558157.70	584162.70	600577.70	608007.70	632407.70
2	Add: Addition during the year / period	26005.00	16415.00	7430.00	24400.00	2870.00
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	584162.70	600577.70	608007.70	632407.70	635277.70
7	**Average Capital Cost**	**571160.20**	**592370.20**	**604292.70**	**620207.70**	**633842.70**

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

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	Opening Capital Cost	0.00	0.00	3334.00	15190.00	18534.00
2	Add: Addition during the year / period	0.00	3334.00	11856.00	3344.00	7500.00
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	0.00	3334.00	15190.00	18534.00	26034.00
7	**Average Capital Cost**	**0.00**	**1667.00**	**9262.00**	**16862.00**	**22284.00**

(Petitioner)

PART-I
FORM- 1(IIA)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Talcher Super Thermal power Station Stage-II**

Statement showing Return on Equity at Normal Rate

Amount in Rs. Lakhs

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
	Return on Equity					
1	Gross Opening Equity (Normal)	1,67,447.31	1,75,248.81	1,80,173.31	1,82,402.31	189722.31
2	Less: Adjustment in Opening Equity	-				
3	Adjustment during the year		0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)	1,67,447.31	1,75,248.81	1,80,173.31	1,82,402.31	1,89,722.31
5	Add: Increase in equity due to addition during the year / period	7801.50	4924.50	2229.00	7320.00	861.00
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)	1,75,248.81	1,80,173.31	1,82,402.31	1,89,722.31	1,90,583.31
11	Average Equity (Normal)	1,71,348.06	1,77,711.06	1,81,287.81	1,86,062.31	1,90,152.81
12	Rate of ROE (%)	18.782	18.782	18.782	18.782	18.782
13	Total ROE	**32,182.59**	**33,377.69**	**34,049.48**	**34,946.22**	**35,714.50**

(Petitioner)

PART-I
FORM- 1(IIB)

Name of the Petitioner:	NTPC Limited
Name of the Generating Station:	Talcher Super Thermal power Station Stage-II

Statement showing Return on Equity at Interest Rate

Amount in Rs. Lakhs

S. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
	Return on Equity (beyond the original scope of work excluding additional capitalization due to Change in Law)					
1	Gross Opening Equity (Normal)	0.00	0.00	1000.20	4557.00	5560.20
2	Less: Adjustment in Opening Equity	0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year	0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)	0.00	0.00	1000.20	4557.00	5560.20
5	Add: Increase in equity due to addition during the year / period	0.00	1000.20	3556.80	1003.20	2250.00
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)	0.00	1000.20	4557.00	5560.20	7810.20
11	Average Equity (Normal)	0.00	500.10	2778.60	5058.60	6685.20
12	Rate of ROE (%)	9.076	9.009	8.988	8.944	8.711
13	Total ROE	**0.00**	**45.05**	**249.74**	**452.44**	**582.35**

(Petitioner)

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	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 (^{0}C) [1]				
Reheat Steam Pressure at Turbine inlet (kg/Cm^2) [1]				
Reheat Steam Temperature at Turbine inlet (^{0}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			
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.,

(Petitioner)

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 Stage-II

(Year Ending March)

Particulars	Unit	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
Base Rate of Return on Equity $$	%	15.50	15.50	15.50	15.50	15.50	15.50
Base Rate of Return on Equity on Add. Capitalization** $$	%	-	7.490	7.434	7.417	7.381	7.189
Effective Tax Rate	%	21.5488	17.4720	17.4720	17.4720	17.4720	17.4720
Target Availability	%	85.00	85.00	85.00	85.00	85.00	85.00
In High Demand Season	%	-	-	85.00	85.00	85.00	85.00
Peak Hours	%	-	-	85.00	85.00	85.00	85.00
Off-Peak Hours	%	-	-	85.00	85.00	85.00	85.00
In Low Demand Season(Off-Peak)	%	-	-	85.00	85.00	85.00	85.00
Peak Hours	%	-	-	85.00	85.00	85.00	85.00
Off-Peak Hours	%	-	-	85.00	85.00	85.00	85.00
Auxiliary Energy Consumption	%	5.75	6.25	6.25	6.25	6.25	6.25
Gross Station Heat Rate	kCal/kWh	2375.00	2390.00	2390.00	2390.00	2390.00	2390.00
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	45	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						
Liquid Fuel Stock for WC	in Months						
O&M Expenses	Rs lakh/MW	20.43	22.51	23.3	24.12	24.97	25.84
Maintenance Spares for WC	% of O&M	20.00	20.00	20.00	20.00	20.00	20.00
Receivables for WC	in Days	60	45	45	45	45	45
Storage capacity of Primary fuel	MT	533333					
SBI 1 Year MCLR plus 350 basis point	%	13.50	12.05	12.05	12.05	12.05	12.05
Blending ratio of domestic coal/imported coal							

** Rate of Return on Add - cap beyong original scope and excluding Change in Law

$$ Additional RoE due to better ramp rate would be claimed at the time of true-up or as per guidelines to be issued

Petitioner

Part-I
FORM-3A
ADDITIONAL FORM

Calculation of O&M Expenses

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

Amount in Rs. Lakhs

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	7	8
1	**O&M expenses under Reg.35(1)**					
1a	Normative	45020.00	46600.00	48240.00	49940.00	51680.00
2	**O&M expenses under Reg.35(6)**					
2a	Water Charges **	4563.33	4900.67	5250.67	5600.67	5967.33
2b	Security expenses **	2631.14	2894.26	3183.68	3502.05	3852.26
2c	Capital Spares***	0.00	0.00	0.00	0.00	0.00
3	O&M expenses-Ash Transportation***	0.00	0.00	0.00	0.00	0.00
	Total O&M Expenses	**52214.47**	**54394.93**	**56674.35**	**59042.72**	**61499.59**

** Subject to true up
*** Shall be provided at the time of truing up

Petitioner

Form-4

DETAILS OF FOREIGN LOANS
(Details only in respect of loans applicable to the project under petition)

Name of the company	NTPC LIMITED						
Name of the Power Station	Talcher STPP -ESP						
Exchange Rate as on	31-03-2019	USD = Rs.	69.77	EUR = Rs.	78.84	JPY	0.6343

2.95% (Amount in Lacs) (Amount in Lacs) (Amount in Lacs) (Amount in Lacs)

Financial Year (Starting from COD)	2019-20 (01.04.2019 to 31.03.2020)				2020-21 (01.04.2020 to 31.03.2021)				2021-22 (01.04.2021 to 31.03.2022)				2022-23 (01.04.2022 to 31.03.2023)				2023-24 (01.04.2023 to 31.03.2024)			
1	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
KfW -ESP	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)	Date	Amount (FC)	Ex. Rate	Amount (INR)
Currency 1 EURO	15-03-2019																			
At the date of drawl	01-04-2019	28.07	78.84	2,213.11	01-04-2020	28.07	78.84	2,213.11	01-04-2021	28.07	78.84	2,213.11	01-04-2022	28.07	78.84	2,213.11	01-04-2023	28.07	78.84	2,213.11
Loan repayment upto previous period		7.02	78.84	553.28		10.53				14.04				17.54				21.05		
Net loan at the Beginning of the period	01-04-2019	21.05	78.84	1,659.83	01-04-2020	17.54	78.84	1,383.19	01-04-2021	14.04	78.84	1,106.56	01-04-2022	10.53	78.84	829.92	01-04-2023	7.02	78.84	553.28
Schedule repayment date of principal	15-09-2019	1.75	78.84	138.32	15-09-2020	1.75	78.84	138.32	15-09-2021	1.75	78.84	138.32	15-09-2022	1.75	78.84	138.32	15-09-2023	1.75	78.84	138.32
Scheduled payment date of interest	15-09-2019	0.34	78.84	26.47	15-09-2020	0.28	78.84	22.06	15-09-2021	0.22	78.84	17.65	15-09-2022	0.17	78.84	13.24	15-09-2023	0.11	78.84	8.82
Withholding tax including surcharge on interest	15-09-2019	-	78.84	-	15-09-2020	-	78.84	-	15-09-2021	-	78.84	-	15-09-2022	-	78.84	-	15-09-2023	-	78.84	-
Schedule repayment date of principal	15-03-2020	1.75	78.84	138.32	15-03-2021	1.75	78.84	138.32	15-03-2022	1.75	78.84	138.32	15-03-2023	1.75	78.84	138.32	15-03-2024	1.75	78.84	138.32
Scheduled payment date of interest	15-03-2020	0.31	78.84	24.27	15-03-2021	0.25	78.84	19.86	15-03-2022	0.20	78.84	15.44	15-03-2023	0.14	78.84	11.03	15-03-2024	0.08	78.84	6.62
Witholding tax including surcharge on interest	15-03-2020	-	78.84	-	15-03-2021	-	78.84	-	15-03-2022	-	78.84	-	15-03-2023	-	78.84	-	15-03-2024	-	78.84	-
At the end of Financial year	31-03-2020	17.54	78.84	1,383.19	31-03-2021	14.04	78.84	1,106.56	31-03-2022	10.53	78.84	829.92	31-03-2023	7.02	78.84	553.28	31-03-2024	3.51	78.84	276.64

PART 1
FORM- 5

Abstract of Admitted Capital Cost for the existing Projects

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

Rs in Lakh

Last date of order of Commission for the project	**Date (DD-MM-YYYY)**	16-02-2017
Reference of petition no. in which the above order was passed	**Petition no.**	293/GT/2014
Following details (whether admitted and /or considered) as on the last date of the period for which tariff is approved, in the above order by the Commission:		
Capital cost as on 31.03.2019	**(Rs. in lakh)**	574726.07
Amount of un-discharged liabilities included in above (& forming part of admitted capital cost)		
Amount of un-discharged liabilities corresponding to above admitted capital cost (but not forming part of admitted capital cost being allowed on cash basis)		3244.53
Gross Normative Debt		402308.25
Cumulative Repayment		397998.83
Net Normative Debt		4309.42
Normative Equity		172417.82
Cumulative Depreciation		400914.21
Freehold land		810.51

(Petitioner)

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 Stage-II**

Reference of Final True-up Tariff Petition	**Affidavit dated**	
Capital Cost as on 31.03.2019 as per Hon'ble Commission's Order dated 16-.02-2017 In Pet. No. 293/GT/2014	**Rs. Lakhs**	574726.07
Adjustment as per Para (7) of this petition		-16568.37
Following details as considered by the Petitioner as on the last date of the period for which final true-up tariff is claimed:		
Capital cost as on 01.04.02019	**(Rs. in lakh)**	558157.70
Amount of un-discharged liabilities included in above (& forming part of admitted capital cost)		
Amount of un-discharged liabilities corresponding to above admitted capital cost (but not forming part of admitted capital cost being allowed on cash basis)		2667.35
Gross Normative Debt		390710.38
Cumulative Repayment		390710.38
Net Normative Debt		0
Normative Equity		167447.31
Cumulative Depreciation		399224.18
Freehold land		1305.75

(Petitioner)

Form 8- Domestic Bonds- Details of Allocation of corporate loans to various projects during the FY 2014-19

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	100,000	35,000

KFW ESP Loan

Particulars			
Source of Loan	KFW ESP I	KfW ESP II	KfW ESP IX
Drawal	5,000,000.00	7,000,000.00	10,000,000.00
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%**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

BP NO 5050000241	TRANCHE NO T00001	DRAWAL NO. 1

Unsecured Loan From LIC-III		
Source of Loan :	LIC-III	
Currency :	INR	
Amount of Loan :	40,000,000,000	
Total Drawn amount :	5,000,000,000	
Date of Drawal	0	
Interest Type :	Fixed	
Fixed Interest Rate :	6.571%	
Rate of Interest 01.04.2019	6.571%	
Upfront fees	0.20% excluding service tax	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Half Yearly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	4 Years	
Moratorium effective from :	31.12.2003	
Repayment Period (Inc Moratorium) :	14 Years	
Repayment Frequency :	20 Half Yearly	
Repayment Type :	AVG	
First Repayment Date :	31-Dec-07	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	TALCHER-II	900,000,000.00
	RAMAGUNDAM-III	500,000,000.00
	KOLDAM	1,300,000,000.00
	VINDHYACHAL-III	800,000,000.00
	KAHALGAON-II	850,000,000.00
	SIPAT-II	350,000,000.00
	SIPAT-I	100,000,000.00
	UNCHAHAR-III	150,000,000.00
	RGCCPP	50,000,000.00
Total Allocated Amount		**5,000,000,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5070000011 T00001 D00032

Unsecured Loan From PFC-V		
Source of Loan :	PFC-V	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	15.12.2011	
Interest Type :	Floating	
Rate of Interest as on 01.04.20	7.68%	
Margin, If Floating Interest :	Nil	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	4 Years	
Moratorium effective from :	26.12.2008	
Repayment Period (Inc Moratorium) :	16 Years	
Repayment Frequency :	48 Quarterly Instalments	
Repayment Type :	FIFO	
First Repayment Date :	15.07.2013	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	SIMHADRI-II	82,00,00,000.00
	VINDHYACHAL-IV	50,00,00,000.00
	PAKRI BARWADIH	73,00,00,000.00
	FARAKKA-III	42,00,00,000.00
	NCTPP-II	37,00,00,000.00
	TALCHER STPP-II	34,00,00,000.00
	TAPOVAN VISHNUGAD	48,00,00,000.00
	KOLDAM	97,00,00,000.00
	BADARPUR R&M	30,00,00,000.00
	RIHAND R&M	7,00,00,000.00
Total Allocated Amount		**5,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5070000011 **T00001** **D00022**

Unsecured Loan From PFC-V		
Source of Loan :	PFC-V	
Currency :	INR	
Amount of Loan :	100,000,000,000	
Total Drawn amount :	4,000,000,000	
Date of Drawl	22.11.2010	
Interest Type :	Fixed with Reset after every 3 Years	
Rate of Interest as on 01.04.20	7.62%	
Margin, If Floating Interest :	Nil	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	4 Years	
Moratorium effective from :	26.12.2008	
Repayment Period (Inc Moratorium) :	16 Years	
Repayment Frequency :	48 Quarterly Instalments	
Repayment Type :	FIFO	
First Repayment Date :	15.07.2013	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	KAHALGAON II	200,000,000.00
	KOLDAM	100,000,000.00
	FARAKKA III	250,000,000.00
	NCTPP-DADRI-II	100,000,000.00
	SIMHADRI-II	100,000,000.00
	BONGAIGAON	200,000,000.00
	BARH-II	550,000,000.00
	MAUDA	400,000,000.00
	VINDHYACHAL IV	200,000,000.00
	RIHAND-III	350,000,000.00
	TALCHER-II	300,000,000.00
	RIHAND-II	150,000,000.00
	VINDHYACHAL III	500,000,000.00
	UNCHAHAR-III	200,000,000.00
	PAKRI BARWADIH	400,000,000.00
Total Allocated Amount		**4,000,000,000.00**

PART-I
FORM- 9A
Additional Form

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Talcher Super Thermal power Station Stage-II**
COD	**01-08-2005**
For Financial Year	**2019-24 (Summary)**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Projected)					Regulations under which claimed/ Justification		Admitted Cost by the Commission, if any
		2019-20	2020-21	2021-22	2022-23	2023-24			
1	2	3	4	5	6	7		8	9
A.	**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**								
1	Ash dyke/ash handling related works	5,700	8,600	5,600	4,400	2,870	Please refer respective Form-9		
2	Laying of Cast Basalt Pipeline	845							
3	Wagon Tippler Package and related work	11,600							
4	Upgradation of ESP Stage-II	7,500	200						
5	Installation of cameras and related works for plant/ Station	360							
6	Dry Ash evacuation system Stg-II and related works		6,600	400					
7	3.5 Km MGR to Kaniha mine S&T		460						
8	Water conservation related works		350						
9	Treatment of existing STP with AFM technology		100						
10	Installation of ClO2 dosing system			1,430					
11	Design, Supply, Erection & Commissioning of ABT system		105						
12	Mine void filling main package				20,000				
	Total (A)	**26,005**	**16,415**	**7,430**	**24,400**	**2,870**			
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**								
1	Construction of New ash dyke (Starter Dyke: Masunihata construction and its land)	-	3,334		3,344		Please refer respective Form-9		
2	Construction of New ash dyke (Starter Dyke: Badahira construction and its land)			10,800		7,500			
3	Nitrogen Sparging			1,056					
	Total (B)	**-**	**3,334**	**11,856**	**3,344**	**7,500**			
Total Add. Cap. Claimed (A+B)		**26,005**	**19,749**	**19,286**	**27,744**	**10,370**			

(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 Super Thermal power Station Stage-II
COD	01-08-2005
For Financial Year	2019-20

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				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
A.	Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate							
1	Ash dyke/ash handling related works	5,700.00		5,700.00		25(1)(c) & 25(1) (g)	The projected expenditure projected is for planned works required 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. These works are as per the approved scheme under original scope of work. Hence the Hon'ble Commission may please allow the same.	
2	Laying of Cast Basalt Pipeline	845.00		845.00		26(1)(b)	Cast bassalt pipeline are being installed, as per direction dated 27.03.17 by Odisha Pollution Control Board (copy enclosed at annex-II). The similar work has also been allowed by Hon'ble Commission vide order dated 16.02.17 in Pet No 293/GT/2014 under change in law. As the work is being done in phases depending upon the opportunity to execute the work as well as ensuring the max. availability of the syatem, the Hon'ble Commision may be pleased to allow the same.	
3	Wagon Tippler Package and related work	11,600.00		11,600.00		26(1)(b)	The average coal received from linked mines for TSTPS (Stage- I & II) is 15.8 MT as compared to requirement of 18 MT of coal. To maintain the generation wrt the DC and SG alloted to the station, it is inevitable for the station to take coal from external sources. This makes the station dependent on Railways. Ministry of Railway, GoI has communicated to Petitioner (Attached as Annex-III) to plan the appropriate infrastructure/ installation of wagon tippler for unloading of BOXN wagons. During 2016-17 Station Units were forced to operate on partial load causing generation loss due to labour problems in the are of linked mines. Further, during 2019-20 also Station has faced the problem of labour unrest/strike in the area of linked mines affecting the availability of coal due to which units were forced to operate on partial load / shut down and the Station is not able to meet the normative availability. For such like events of longer duration, availability of wagon tippler at site shall be beneficial for the ebeneficiaries of the station to get the power at reasonable rate. Hence to facilitate the coal availability, BOXN wagons unloading is also needed, doing the unloading manually is both a herculian task and time consuming. Wagon Tippler installation is therefore necessary for sustaining the generation of the station, by ensuring an additional facility to unload BOXN wagons, both in a efficiently and eco-friendly manner. Petiotioner prays the Hon'ble Commission for Capitalisation of the same under Regulation 26(1)(b).	
4	Upgradation of ESP Stage-II	7,500.00		7,500.00		26(1)(b)	The work of Upgradation of ESP was allowed by Hon'ble Commsion vide order dated 16.02.17 in Pet No 293/GT/2014. However based on the availability of the Units to get the work executed, part work could be capitalised during 2014-19 and the balance work of 2014-19 and remaining works are expected to be capitalised during 2019-24. As the work is being implemented as per directions of OSPCB letters to achieve the emission level of 50m/Nm3 ESP needs to be upgraded , Hon'ble Commission may be pleased to allow the same.	Rs 11250 lakh in order dated 16.02.17
5	Installation of cameras and related works for plant/ Station	360.00		360.00		26(1)(b) & 26 (1) (d)	Work is essentially required for compliance of the direction dated 23.10.19 of MoP, GoI (copy enclosed at Annex- IV). Hon'ble Commission may please allow the same.	
	Total (A)	**26,005.00**	-	**26,005.00**	-			
B.	Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest							
	Total (B)	-	-	-	-			
Total Add. Cap. Claimed (A+B)		**26,005.00**	-	**26,005.00**	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Talcher Super Thermal power Station Stage-II
COD	01-08-2005
For Financial Year	2020-21

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				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
A.	**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**							
1	Ash dyke/ash handling related works	8,600.00		8,600.00		25(1)(c) & 25(1) (g)	Please refer Sl No A (1) of Form -9 for FY 2019-20	
2	Dry Ash evacuation system Stg-II and related works	6,600.00		6,600.00		26(1)(b)	The work was allowed by Hon'ble Commsion vide order dated 16.02.17 in Pet No 293/GT/2014. However as the opportunity was not available to execute the work due to continiuous operation of the Station , the same is expected to be capitalised during 2019-24. As work is required as per MOEF gazette notification on ash utilization dated 25.01.16 (attched at Annex-V) to achieve 100% ash utilization, Hon'ble Commission may be pleased to allow the same.	Rs 10000 Lakhs
3	Upgradation of ESP Stage-II	200.00		200.00		26(1)(b)	Please refer Sl No A (4) of Form -9 for FY 2019-20	
4	3.5 Km MGR to Kaniha mine S&T	460.00		460.00		25(1) & 76	The work of signalling and Telecommunication was allowed by Hon'ble Commission vide oreder dated 16.02.17 in petition no 293/GT/2014 under the Regulation 14(3)(x) of Tariff Regulation 2014-19 (expenditure arising arising due to non materialisation of coal supply corresponding to full coal linkage). The work could not be capitalised during 2014-19 due to disputes in the nearby villages which was beyond the control of Petitioner. The same is expected to be capitaised during 2019-24. Since the work of Signalling and Telecommunication (S & T) is integral part of MGR for safe and smooth movement of rakes , the same may please be allowed by Hon'ble Commission.	
5	Water conservation related works	350.00		350.00		26(1)(b)	As per OPCB directions vide letter dated 27.03.17 (attached at Annex- II) Station has to meet specific water consuption of 3.3 m3/MWH as per MoEF Gazette Notification dtd 7.12.2015 (attached at Annex-VI) . To comply with Statutory Direction, works related to water conservation are required to be installed at TSTPS -II for improvment of COC (Cycle of Concentration) and thereby reducing water consumption. As the works are being implemented as per OPCB/ MoEF guidelines, Hon'ble Commission may be pleased to allow the same.	
6	Treatment of existing STP with AFM technology	100.00		100.00		26(1)(b)	CPCB vide its direction dated 21.04.15 (copy enclosed at annex - VII) to OSPCB has directed to upgrade existing STP so that treated effluent from STP reduce BOD limit to 10 mg/l and COD limit to 50 mg/l. To comply the directions of CPCB, AFM (Activated Filter media) are being retrofitted to existing STP. As the work is essential to meet the guidelines of CPCB, Hon'ble Commission may please allow the same	
	Total (A)	**16,310.00**	-	**16,310.00**	-			

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Talcher Super Thermal power Station Stage-II**
COD	**01-08-2005**
For Financial Year	**2020-21**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				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
B.	Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest							
1	Construction of New ash dyke (Starter Dyke: Masunihata construction and its land)	3,334.00		3,334.00		26 (1) (c)	The original ash dyke of TSTPS-II was designed at an average PLF of 75 % with specific coal consumption of 0.67 kg/kwh. Over the period the norms have been raised to 85% of PLF/availability and quality of recieved coal has also deteriorated . Specific coal consumption of the station is around 0.83 kg/kwh resulting in much higher generation of ash compared to that was envisaged during the planning of the Station. The quantum of actual annual ash produced i.e 48 lakh cum has been much more than that envisaged i.e. 32 lakh cum at the time of designing. This is due to multiple factors like poor grade of coal there by more ash content, low ash utilization as compared to that was envisaged etc. therefore the actual life of the ash dyke has been considerably reduced. As there is substantial increase in ash generation, ash generated at the Station cannot be disposed with the existing ash ponds which were in orginal scope. The existing ash dyke are already nearing its full capacity. Accordingly for sustainable generation of the plant additional ash dyke for disposing the ash is required. State administration has also given administrative approval for acquisition of 607 acres of land for Badahira and Masnuhita ash dyke. The new ash dyke at Masunihata and Bdahira are planned to discharge ash slurry so as to sustain the generation of the station. Masunhita ash dyke is expected to cater the requirement for Both the Stages i.e TSTPS-I & II. For sustainaible operation of the palnt, Work of New ash Dykes may may please be allowed by Hon'ble Commission.	
2	Design, Supply, Erection & Commissioning of ABT system	105.00		105.00		25 (2)(c)	The existing ABT system is more than 10(Ten) years old & has completed its life. It is also observed that the system is hanging very frequently. The supports for server/ hardware are not available due to obscolenscenece. During this period many updates has been done to incorporate the changing requirements.	
	Total (B)	**3,439.00**	**-**	**3,439.00**	**-**			
Total Add. Cap. Claimed (A+B)		**19,749.00**	**-**	**19,749.00**	**-**			

(Petitioner)

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PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Talcher Super Thermal power Station Stage-II
COD	01-08-2005
For Financial Year	2021-22

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				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
A.	**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**							
1	Ash dyke/ash handling related works	5,600.00		5,600.00		25(1)(c) & 25(1) (g)	Please refer Sl No A (1) of Form -9 for FY 2019-20	
2	Dry Ash evacuation system Stg-II and related works	400.00		400.00		26(1)(b)	Please refer Sl No A (2) of Form -9 for FY 2020-21	
3	Installation of ClO2 dosing system	1,430.00		1,430.00		26 (1) b) & 26 (1) (d)	In the instant station, at present Chlorine gas is being dozed directly at various stages of water treatment to maintain water quality and to inhibit organic growth in the water retaining structures/ equipment such as clarifiers, storage tanks, cooling towers, condenser tubes & piping etc. Chlorine dosing is done from chlorine stored in cylinders/ tonners. Chlorine gas is very hazardous and may prove fatal in case of leakage; handling and storage of same involves risk to the life of public at large. In the interest of public safety the chlorine dozing system is now being replaced by Chlorine Dixoide (ClO2) system, which is much safer and less hazardous than chlorine. In the proposed scheme ClO2 shall be produced on site by use of commercial grade HCl and sodium chlorite. As ClO2 is generated at site, avoids handling and storage risk. Further, at Kudgi NTPC project Department of Factories, Boiler, Industrial Safety and Health, Govt of Karnataka has asked NTPC to replace highly hazadorous gas chloriniation system with ClO2 system. SPCB, Odisha while issuing consent to establish in case of Darlipalli Station has asked NTPC to explore the possibility of installing ClO2 system inbstead of Chlorine gas system (Relevant documents is attached at Annexure- VIII). For safety of public NTPC is replacing the chlorination sytem with ClO2 system. Accordingly, Hon'ble Commission may be pleased to allow the same under Reg. 26(1)(b) read with Reg. 26(1) (d).	
	Total (A)	**7,430.00**	**-**	**7,430.00**	**-**			
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**							
1	Construction of New ash dyke (Starter Dyke: Badahira construction and its land)	10,800.00		10,800.00		26 (1) (c)	Please refer Sl No B (1) of Form -9 for FY 2020-21	
2	Nitrogen Sparging	1,056.00		1,056.00		26(1) & 76	Boilers, condensers and other steam/ water handling equipments are very sensitive to corrosion and fouling. Main fouling impurity causing corrosion is the dissolved oxygen which enter the water-steam cycle through the cycle make-up water or during the start-up after outages when the system is filled with DM water. At present the DM water is stored in the vented storage tanks exposed to air wherein CO2 and O2 gets absorbed into this water. When this water containing high concentrations O2 & CO2 enters the system causes stress corrosion, fatigue corrosion, pitting etc. leading to failures. Fauther, it causes pH swings decremental to pressure parts and forms oxides which precipitate and gets deposited in the system. Most of the adverse effects are visible in the long run. Due to temperature and pressure variations during start-ups and load variations these deposits gets dis-lodged and need lot of time to mechanically scavenging out of the system by way of continuous blowdown which is a waste of energy or through polishing units. By nitrogen sparging/ blanketing the storage tanks and other related systems ingress of O2 and Co2 could be avoided resulting in increased life of components, reduce failures, reduce start-up time. Moreover it would unplanned outages increasing the system stability and reliability. In view of various technological benefits the Hon'ble Commission may be please to allow the capitalization of the same	
	Total (B)	**11,856.00**	**-**	**11,856.00**	**-**			
Total Add. Cap. Claimed (A+B)		**19,286.00**	**-**	**19,286.00**	**-**			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Talcher Super Thermal power Station Stage-II
COD	01-08-2005
For Financial Year	2022-23

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment	ACE Claimed (Actual / Projected)				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
A.	**Works under Original scope, Change in Law etc, eligble for RoE at Normal Rate**							
1	Ash dyke/ash handling related works	4,400.00		4,400.00		25(1)(c) & 25(1) (g)	Please refer Sl No A (1) of Form -9 for FY 2019-20	
	Total (A)	**4,400.00**	-	**4,400.00**	-			
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**							
1	Construction of New ash dyke (Starter Dyke: Masunihata construction and its land)	3,334.00		3,334.00		26 (1) e)	Please refer Sl No B (1) of Form -9 for FY 2020-21	
2	Mine void filling main package	20,000.00		20,000.00		25 (1) & 76	SPCB Odisha in their consent order no 480 dtd 13.01.2012 (Annexure-IX) 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. During the high level meeting held on 08-07-2011 with Gov of Odisha, Ministry of Environment Odisha and OSPCB for ash dyke problem, deliberations were held on mine filling with ash. -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 statuatory 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- X) . Further Stage-II/ final approval of MoEF was granted in July 2019 for diversion of forest land for mine void filling Project. The work of Mine void filling for disposal of ash may please be allowed by Hon'ble Commission.	
	Total (B)	**23,334.00**	-	**23,334.00**	-			
Total Add. Cap. Claimed (A+B)		**27,734.00**	-	**27,734.00**	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Talcher Super Thermal power Station Stage-II**
COD	**01-08-2005**
For Financial Year	**2023-24**

Amount in Rs Lakh

Sl. No.	Head of Work /Equipment		ACE Claimed (Actual / Projected)			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
A.	**Works under Original scope, Change in Law etc. eligble for RoE at Normal Rate**							
1	Ash dyke/ash handling related works	2,870.00		2,870.00		25(1)(c) & 25(1) (g)	Please refer Sl No A (1) of Form -9 for FY 2019-20	
	Total (A)	**2,870.00**	**-**	**2,870.00**	**-**			
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**							
1	Construction of New ash dyke (Starter Dyke: Badahira construction and its land)	7,500.00		7,500.00		26(1) (e)	Please refer Sl No B (1) of Form -9 for FY 2020-21	
	Total (B)	**7,500.00**	**-**	**7,500.00**	**-**			
Total Add. Cap. Claimed (A+B)		**10,370.00**	**-**	**10,370.00**	**-**			

(Petitioner)

PART-I
FORM- 10

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Talcher Super Thermal power Station Stage-II**
Date of Commercial Operation	**01-08-2005**

Amount in Rs Lakh

Financial Year (Starting from COD)1	Actual					Admitted				
	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
1	2	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										

(Petitioner)

PART-I

FORM- 12

Statement of Depreciation

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

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Opening Capital Cost	551341.76	5,58,157.70	5,84,162.70	6,03,911.70	6,23,197.70	6,50,941.70
2	Closing Capital Cost	558157.70	5,84,162.70	6,03,911.70	6,23,197.70	6,50,941.70	6,61,311.70
3	Average Capital Cost	554749.73	5,71,160.20	5,94,037.20	6,13,554.70	6,37,069.70	6,56,126.70
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	1,258.94	1,305.76	1,305.76	1,305.76	1,305.76	1,305.76
5	Rate of depreciation	0.000					
6	Depreciable value	4,98,141.71	5,12,869.00	5,33,458.30	5,51,024.05	5,72,187.55	5,89,338.85
7.	Balance useful life at the beginning of the period	11.29	10.29	9.29	8.29	7.29	6.29
8	Remaining depreciable value	0.00	1,13,644.76	1,23,189.87	1,27,495.14	1,33,279.25	1,32,148.07
9	Depreciation (for the period)	0.00	11,044.19	13,260.48	15,379.39	18,282.48	21,009.23
10	Depreciation (annualised)	9,612.98	**11,044.19**	**13,260.48**	**15,379.39**	**18,282.48**	**21,009.23**
11	Cumulative depreciation at the end of the period		4,10,268.43	4,23,528.92	4,38,908.30	4,57,190.78	4,78,200.01
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009	97.53	-	-	-	-	-
13	Add: Cumulative depreciation adjustment on account of liability Discharge	0.00	-	-	-	-	-
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	451.54	-	-	-	-	-
15	Net Cumulative depreciation at the end of the period after adjustments	3,99,224.24	4,10,268.43	4,23,528.92	4,38,908.30	4,57,190.78	4,78,200.01

^^ Shall be submitted at the time of true up

(Petitioner)

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	2019-20	2020-21	2021-22	2022-23	2023-24
1	**Life Insurance Corporation of India**					
	Gross loan - Opening	9000	9000	9000	9000	9000
	Cumulative repayments of Loans upto previous year	6300	6900	7500	8100	8700
	Net loan - Opening	2700	2100	1500	900	300
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	2700	2100	1500	900	300
	Repayments of Loans during the year	600	600	600	600	300
	Net loan - Closing	2100	1500	900	300	0
	Average Net Loan	2400	1800	1200	600	150
	Rate of Interest on Loan	6.5710%	6.5710%	6.5710%	6.5710%	6.5710%
	Interest on loan	157.70	118.28	78.85	39.43	9.86
2	**Bonds XXI Series**					
	Gross loan - Opening	28000	28000	28000	28000	28000
	Cumulative repayments of Loans upto previous year	25200	28000	28000	28000	28000
	Net loan - Opening	2800	0	0	0	0
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	2800	0	0	0	0
	Repayments of Loans during the year	2800	0	0	0	0
	Net loan - Closing	0	0	0	0	0
	Average Net Loan	1400	0	0	0	0
	Rate of Interest on Loan	7.7425%	7.7425%	7.7425%	7.7425%	7.7425%
	Interest on loan	108.40	0.00	0.00	0.00	0.00
3	**PFV-V D-22**					
	Net loan - Opening	1563	1313	1063	813	563
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	1563	1313	1063	813	563
	Repayments of Loans during the year	250	250	250	250	250
	Net loan - Closing	1313	1063	813	563	313
	Average Net Loan	1438	1188	938	688	438
	Rate of Interest on Loan	7.6200%	7.6200%	7.6200%	7.6200%	7.6200%
	Interest on loan	109.54	90.49	71.44	52.39	33.34
4	**PFV-V D-32**					
	Net loan - Opening	1771	1488	1204	921	638
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	1771	1488	1204	921	638
	Repayments of Loans during the year	283	283	283	283	283
	Net loan - Closing	1488	1204	921	638	354
	Average Net Loan	1629	1346	1063	779	496
	Rate of Interest on Loan	7.6800%	7.6800%	7.6800%	7.6800%	7.6800%
	Interest on loan	125.12	103.36	81.60	59.84	38.08
5	**Bonds XXVII Series repayment on 06.11.2019**					
	Gross loan - Opening	1500	1500	1500	1500	1500
	Cumulative repayments of Loans upto previous year	0	300	600	900	1200
	Net loan - Opening	1500	1200	900	600	300
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	1500	1200	900	600	300
	Repayments of Loans during the year	300	300	300	300	300
	Net loan - Closing	1200	900	600	300	0
	Average Net Loan	1350	1050	750	450	150
	Rate of Interest on Loan	11.2800%	11.2800%	11.2800%	11.2800%	11.2800%
	Interest on loan	152.28	118.44	84.60	50.76	16.92

Calculation of Interest on Actual Loans[1]						PART-I FORM-13
Name of the Company		NTPC LTD.				
Name of the Power Station		Talcher-II				
						(Amount in lacs)
Sl. no.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
6	**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	126	189	252	315	378
	Net loan - Opening	378	315	252	189	126
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	378	315	252	189	126
	Less: Repayment (s) of Loans during the year	63	63	63	63	63
	Net loan - Closing	315	252	189	126	63
	Average Net Loan	346	283	220	157	94
	Rate of Interest on Loan	3.1900%	3.1900%	3.1900%	3.1900%	3.1900%
	Interest on loan	11.05	9.04	7.03	5.02	3.01
7	**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	141	211	281	352	422
	Net loan - Opening	422	352	281	211	141
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE					
	Total	422	352	281	211	141
	Less: Repayment (s) of Loans during the year	70	70	70	70	70
	Net loan - Closing	352	281	211	141	70
	Average Net Loan	387	317	246	176	106
	Rate of Interest on Loan	3.1900%	3.1900%	3.1900%	3.1900%	3.1900%
	Interest on loan	12.34	10.10	7.86	5.61	3.37
8	**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	51	77	102	128	154
	Net loan - Opening	154	128	102	77	51
	Increase/ Decrease due to FERV					
	Increase/ Decrease due to ACE	0	0	0	0	0
	Total	154	128	102	77	51
	Less: Repayment (s) of Loans during the year	26	26	26	26	26
	Net loan - Closing	128	102	77	51	26
	Average Net Loan	141	115	90	64	38
	Rate of Interest on Loan	3.1900%	3.1900%	3.1900%	3.1900%	3.1900%
	Interest on loan	4.49	3.67	2.86	2.04	1.22
	TOTAL LOAN					
	Gross loan - Opening	39771	39771	39771	39771	39771
	Cumulative repayments of Loans upto previous year	31818	35677	36736	37795	38854
	Net loan - Opening	11287	6895	5302	3710	2118
	Increase/ Decrease due to FERV	0	0	0	0	0
	Increase/ Decrease due to ACE	0	0	0	0	0
	Total	11287	6895	5302	3710	2118
	Repayments of Loans during the year	4233	1433	1433	1433	1133
	Net loan - Closing	6895	5302	3710	2118	826
	Average Net Loan	9091	6099	4506	2914	1472
	Rate of Interest on Loan	**7.4902%**	**7.4343%**	**7.4171%**	**7.3812%**	**7.1888%**
	Interest on loan	681	453	334	215	106

Note:-

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

FORM 15

Annexure B

Details/Information to be provided to beneficiaries under Clause (6) of regulation 21 of CERC (Terms & Conditions of

Details/Information to be submitted in respect of Fuel for computation of Energy Charges

Name of the Company:- NTPC LTD./ TALCHER STPP
Name of the power station:- Talcher Super Thermal Power Station
Month -OCT'18

Sl. No.	Particulars	Unit	STAGE 2			
			Domestic Coal			Imported Coal
			Supplied by MGR	Supplied by Rail	E-auction	
1	Quantity of Coal/Lignite supplied by Coal/Lignite Company *	(MT)	200993.15	1004277.48		1192.20
2	Adjustment (+/-) in quantity supplied made by Coal/Lignite Company	(MT)	0.00	0.00		0.00
3	Coal supplied by Coal/Lignite Company (1+2)	(MT)	200993.15	1004277.48		1192.20
4	Normative Transit & Handling Losses (For coal/Lignite based Projects)	(MT)	1046.15	8034.22		40.06
5	Net coal / Lignite Supplied (3-4)	(MT)	199947.01	996243.26		1152.13
6	Amount charged by the Coal /Lignite Company *	(Rs.)	0.00	1879380273.34		-3764935.84
7	Adjustment (+/-) in amount charged made by Coal/Lignite Company	(Rs.)	0.00	0.00		0.00
8	Total amount Charged (6+7)	(Rs.)	0.00	1879380273.34		-3764935.84
9	Transportation charges by rail/ship/road transport	(Rs.)	0.00	310206261.31		10498453.60
10	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)	0.00	824376.00		0.00
11	Demurrage Charges, if any	(Rs.)	0.00	0.00		0.00
12	Cost of diesel in transporting coal through MGR system, if applicable	(Rs.)	0.00	23679750.03		225808.17
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	0.00	334710387.34		10722261.77
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc.) //	(Rs)	0.00	30796105.13		403894.87
14	Total amount Charged for Coal/Lignite supplied including Transportation (8+13+13A)	(Rs)	0.00	2244886765.81		7361220.80
15	Landed cost of coal/ Lignite	(Rs./MT)		1876.70		6389.21
16	Blending Ratio (Domestic/ Imported)		67.04			
17	Weighted average cost of Coal	(Rs./MT)	1943.02			
18	GCV of Domestic Coal as per bill of Coal Company, EM basis	(kCal/Kg)	3285.00			
19	GCV of Imported Coal as per bill Coal Company, AD basis	(kCal/Kg)				5691
20	Weighted average GCV of coal/Lignite as Billed.	(kCal/Kg)	3316			
21	GCV of Domestic Coal as received at Station, TM Basis	(kCal/Kg)	2521.00			
22	GCV of Imported Coal as received at Station, TM Basis	(kCal/Kg)				4949
23	Weighted average of Coal as received at Station	(kCal/Kg)	2557			

* It includes Opening Balance

अजय साहू
AJAY SAHOO
उप महाप्रबंधक (वित्त) एस.एल.सी./ई.आर.-II
Dy. General Manager (Fin)SSC/ER-II
एनटीपीसी लिमिटेड/तालचेर कनिहा
NTPC Limited / Talcher Kaniha

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For C.K. PRUSTY & ASSOCIATES
Chartered Accountants
Firm Reg. No. 323220E

CA C.K. PRUSTY, FCA
Partner
M. No.- 057318

FORM 15 Annexure B

Details/Information to be provided to beneficiaries under Clause (6) of regulation 21 of CERC (Terms & Conditions of

Details/Information to be submitted in respect of Fuel for computation of Energy Charges

Name of the Company:- NTPC LTD./ TALCHER STPP
Name of the power station:- Talcher Super Thermal Power Station
Month -NOV'18

Sl. No.	Particulars	Unit	STAGE 2			
			Domestic Coal			Imported Coal
			Supplied by MGR	Supplied by Rail	E-auction	
1	Quantity of Coal/Lignite supplied by Coal/Lignite Company *	(MT)	334424.17	944173.39		69394.72
2	Adjustment (+/-) in quantity supplied made by Coal/Lignite Company	(MT)	-279.61	-531.27		0.00
3	Coal supplied by Coal/Lignite Company (1+2)	(MT)	334144.56	943642.12		69394.72
4	Normative Transit & Handling Losses (For coal/Lignite based Projects)	(MT)	1065.72	7553.39		176.51
5	Net coal / Lignite Supplied (3-4)	(MT)	333078.84	936088.73		69218.22
6	Amount charged by the Coal /Lignite Company *	(Rs.)	0.00	2006259919.11		424703562.72
7	Adjustment (+/-) in amount charged made by Coal/Lignite Company	(Rs.)	0.00	0.00		0.00
8	Total amount Charged (6+7)	(Rs.)	0.00	2006259919.11		424703562.72
9	Transportation charges by rail/ship/road transport	(Rs.)	0.00	276712905.86		46244881.16
10	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)	0.00	824376.00		0.00
11	Demurrage Charges, if any	(Rs.)	0.00	0.00		0.00
12	Cost of diesel in transporting coal through MGR system, if applicable	(Rs.)	0.00	26981276.96		0.00
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	0.00	304518558.82		46244881.16
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc.) #	(Rs)	0.00	29440889.87		1759110.13
14	Total amount Charged for Coal/Lignite supplied including Transportation (8+13+13A)	(Rs)	0.00	2340219367.80		472707554.01
15	Landed cost of coal/ Lignite	(Rs./MT)		1843.90		6829.24
16	Blending Ratio (Domestic/ Imported)		17.26			
17	Weighted average cost of Coal	(Rs./MT)	2116.97			
18	GCV of Domestic Coal as per bill of Coal Company, EM basis	(kCal/Kg)	3481.00			
19	GCV of Imported Coal as per bill Coal Company, AD basis	(kCal/Kg)				5669
20	Weighted average GCV of coal/Lignite as Billed.	(kCal/Kg)	3604			
21	GCV of Domestic Coal as received at Station, TM Basis	(kCal/Kg)	2662.00			
22	GCV of Imported Coal as received at Station, TM Basis	(kCal/Kg)				4882
23	Weighted average of Coal as received at Station	(kCal/Kg)	2784			

It includes Opening Balance

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अजय साहू
AJAY SAHOO
उप महाप्रबंधक (वित्त) एन.एच.पी.सी./(आर-II)
Dy. General Manager (Fin)SSC/ER-II
एनटीपीसी लिमिटेड/तालचेर कनिहा
NTPC Limited / Talcher Kaniha

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For C.K. PRUSTY & ASSOCIATES
Chartered Accountants
Firm Reg. No. 323220E

CA C.K. PRUSTY, FCA
Partner
M. No.- 057318

FORM 15

Annexure B

Details/Information to be provided to beneficiaries under Clause (6) of regulation 21 of CERC (Terms & Conditions of

Details/Information to be submitted in respect of Fuel for computation of Energy Charges

Name of the Company:- NTPC LTD./ TALCHER STPP
Name of the power station:- Talcher Super Thermal Power Station
Month -DEC'18

Sl. No.	Particulars	Unit	STAGE 2			
			Domestic Coal			Imported Coal
			Supplied by MGR	Supplied by Rail	E-auction	
1	Quantity of Coal/Lignite supplied by Coal/Lignite Company *	(MT)	367549.87	1000705.31		41229.32
2	Adjustment (+/-) in quantity supplied made by Coal/Lignite Company	(MT)	-589.72	-1076.67		0.00
3	Coal supplied by Coal/Lignite Company (1+2)	(MT)	366960.15	999628.64		41229.32
4	Normative Transit & Handling Losses (For coal/Lignite based Projects)	(MT)	1044.91	8005.64		113.49
5	Net coal / Lignite Supplied (3-4)	(MT)	365915.24	991623.00		41115.83
6	Amount charged by the Coal /Lignite Company *	(Rs.)	0.00	2033821272.87		239046421.63
7	Adjustment (+/-) in amount charged made by Coal/Lignite Company	(Rs.)	0.00	0.00		0.00
8	Total amount Charged (6+7)	(Rs.)	0.00	2033821272.87		239046421.63
9	Transportation charges by rail/ship/road transport	(Rs.)	0.00	240665523.22		29135771.60
10	Adjustment (+/-) in amount charged made by Railways/Transport Company	(Rs.)	0.00	-26716243.00		0.00
11	Demurrage Charges, if any	(Rs.)	0.00	0.00		0.00
12	Cost of diesel in transporting coal through MGR system, if applicable	(Rs.)	0.00	19160781.70		772871.87
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	0.00	233110061.92		29908643.46
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc.) //	(Rs)	0.00	47295704.71		1761996.08
14	Total amount Charged for Coal/Lignite supplied including Transportation (8+13+13A)	(Rs)	0.00	2314227039.51		270717061.17
15	Landed cost of coal/ Lignite	(Rs./MT)		1704.72		6584.25
16	Blending Ratio (Domestic/ Imported)		21.57			
17	Weighted average cost of Coal	(Rs./MT)	1920.93			
18	GCV of Domestic Coal as per bill of Coal Company, EM basis	(kCal/Kg)	3675.00			
19	GCV of Imported Coal as per bill Coal Company, AD basis	(kCal/Kg)				5708
20	Weighted average GCV of coal/Lignite as Billed.	(kCal/Kg)	3748			
21	GCV of Domestic Coal as received at Station, TM Basis	(kCal/Kg)	2898.00			
22	GCV of Imported Coal as received at Station, TM Basis	(kCal/Kg)				4933
23	Weighted average of Coal as received at Station	(kCal/Kg)	2988			

// It includes Opening Balance

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AJAY SAHOO
उप महाप्रबंधक (वित्त) एस.एस.सी./ईआर-II
Dy. General Manager (Fin)SSC/ER-II
एनटीपीसी लिमिटेड/तालचेर कनिहा
NTPC Limited/Talcher Kaniha

For C.K. PRUSTY & ASSOCIATES
Chartered Accountants
Firm Reg. No. 323220E

CA C.K. PRUSTY, FCA
Partner
M. No.- 057318

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Details of Information to be submitted in respect of fuel for computation of energy charges

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Name of the Company:- NTPC LTD./ TALCHER STPP
Name of the power station:- Talcher Super Thermal Power Project
Month - OCT'18

S NO	Month	Unit	STATION	
			LDO	HFO
1	Opening Stock of Oil	(KL)	720.46	5,107.80
2	Value of Opening Stock	(Rs.)	3,62,56,808.89	21,33,30,496.23
3	Quantity of Oil supplied by Oil Company	(KL)	0.00	0.00
4	Adjustment (+/-) in quantity made by Oil Company	(KL)		
5	Oil Supplied by Oil Company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)		
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
8	Amount charged by the Oil company	(Rs.)	0.0	0.0
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)		0.0
10	Total amount charged (8+9)	(Rs.)	0.0	0.0
11	Transportation charges by Rail/Ship/Road Transport	(Rs.)		
12	Adjustment (+/-) in amount charged by Railways/ transport company	(Rs.)	0.00	0.00
13	Demurrage charges , if any.	(Rs.)		
14	Total transportation charges 11+/-12-13)	(Rs.)	0.00	0.00
15	Total amount charged for Oil supplied including transportation (10+14)	(Rs.)	0.00	0.00
16	Weighted average GCV of OIL as Received	Kcal/KL	9,906.00	9,998.00
17	Quantity of Oil at station for the month (1+7)	(KL)	720.459	5107.804
18	Total amount charged for oil (2+15)	(Rs.)	36256808.89	213330496.23
19	Landed Cost of Oil (18/17)	Rs/Kl	50324.60	41765.60
20	Quantity of Oil consumed	(KL)	37.00	714.00
21	Value of Oil consumed (19*20)	(Rs.)	1862010.09	29820638.05
22	Closing Stock of Oil (17-20)	(KL)	683.459	4393.804
23	Value Of Closing Stock (18-21)	(Rs.)	34394798.799	183509858.18

Details of information to be submitted in respect of fuel for computation of energy charges

Station : TALCHER SUPER THERMAL POWER PROJECT
Month - OCT'18

STAGE 1

sl no	Particulars	Unit	LDO	HFO
1	Landed Cost of Oil at sl.no-19	Rs/Kl	50324.60	41765.60
2	Usage quantity for the month	Kl	13	307
3	Weighted average rate	Rs/Kl	42113.309	
4	Weighted average GCV of OIL on usage basis	(kcal/ltr)	9994	

नागप्रदीप अवधानम्
NAGAPRADEEP AVADHANAM
प्रबंधक (वित्त एवं लेखा)
Manager (F&A)
एनटीपीसी लिमिटेड/तालचेर कनिहा
NTPC Limited / Talcher Kaniha

DGM(F)
अजय साहू
AJAY SAHOO
उप महाप्रबंधक (वित्त) एस.एस.सी./ई आर-II
Dy. General Manager (Fin)SSC/ER-II
एनटीपीसी लिमिटेड/तालचेर कनिहा
NTPC Limited / Talcher Kaniha

For C.K. PRUSTY & ASSOCIATES
Chartered Accountants
Firm Reg. No. 323220E

CA C.K. PRUSTY, FCA
Partner
M. No.- 057318

15A

Details of Information to be submitted in respect of fuel for computation of energy charges

Name of the Company:- NTPC LTD./ TALCHER STPP
Name of the power station:- Talcher Super Thermal Power Project
Month - Nov'18

S NO	Month	Unit	STATION	
			LDO	HFO
1	Opening Stock of Oil	(KL)	683.46	4,393.80
2	Value of Opening Stock	(Rs.)	3,43,94,798.80	18,35,09,858.18
3	Quantity of Oil supplied by Oil Company	(KL)	0.00	0.00
4	Adjustment (+/-) in quantity made by Oil Company	(KL)		
5	Oil Supplied by Oil Company (3+4)	(KL)	0.00	0.00
6	Normative transit & Handling losses	(KL)		
7	Net Oil supplied (5-6)	(KL)	0.00	0.00
8	Amount charged by the Oil company	(Rs.)	0.00	0.0
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)		0.0
10	Total amount charged (8+9)	(Rs.)	0.00	0.0
11	Transportation charges by Rail/Ship/Road Transport	(Rs.)		
12	Adjustment (+/-) in amount charged by Railways/ transport company	(Rs.)	0.00	0.00
13	Demurrage charges , if any.	(Rs.)		
14	Total transportation charges 11+/-12-13)	(Rs.)	0.00	0.00
15	Total amount charged for Oil supplied including transportation (10+14)	(Rs.)	0.00	0.00
16	Weighted average GCV of OIL as Received	Kcal/KL	9,906.00	9,998.00
17	Quantity of Oil at station for the month (1+7)	(KL)	683.46	4393.80
18	Total amount charged for oil (2+15)	(Rs.)	34394798.80	183509858.18
19	Landed Cost of Oil (18/17)	Rs/Kl	50324.60	41765.60
20	Quantity of Oil consumed	(KL)	44.00	690.00
21	Value of Oil consumed (19*20)	(Rs.)	2214282.27	28818263.66
22	Closing Stock of Oil (17-20)	(KL)	639.459	3703.80
23	Value Of Closing Stock (18-21)	(Rs.)	32180516.527	154691594.52

Details of information to be submitted in respect of fuel for computation of energy charges

Station : TALCHER SUPER THERMAL POWER PROJECT
Month - Nov'18

STAGE 1

sl no	Particulars	Unit	LDO	HFO
1	Landed Cost of Oil at sl.no-19	Rs/Kl	50324.60	41765.60
2	Usage quantity for the month	Kl	36	394
3	Weighted average rate	Rs/Kl	42482.167	
4	Weighted average GCV of OIL on usage basis	(kcal/ltr)	9990.3	

नागप्रदीप अवधानम्
NAGAPRADEEPAVADHANAM
प्रबंधक (वित्त एवं लेखा)
Manager (F&A)
एनटीपीसी लिमिटेड/तालचेर कनिहा
NTPC Limited / Talcher Kaniha

अजय साहु
AJAY SAHOO
उप महाप्रबंधक (वित्त) एस.एस.सी./ई आर-II
Dy. General Manager (Fin)SSC/ER-II
एनटीपीसी लिमिटेड/तालचेर कनिहा
NTPC Limited / Talcher Kaniha

For C.K. PRUSTY & ASSOCIATES
Chartered Accountants
Firm Reg. No. 323220E

CA C.K. PRUSTY, FCA
Partner
M. No.- 057318

15 A

Details of Information to be submitted in respect of fuel for computation of energy charges

Name of the Company:- NTPC LTD./ TALCHER STPP
Name of the power station:- Talcher Super Thermal Power Project
Month - DEC'18

S NO	Month	Unit	STATION	
			LDO	HFO
1	Opening Stock of Oil	(KL)	639.46	3,703.80
2	Value of Opening Stock	(Rs.)	3,21,80,516.53	15,46,91,594.52
3	Quantity of Oil supplied by Oil Company	(KL)	0.00	0.00
4	Adjustment (+/-) in quantity made by Oil Company	(KL)		
5	Oil Supplied by Oil Company (3+4)	(KL)	0.00	2939.32
6	Normative transit & Handling losses	(KL)		
7	Net Oil supplied (5-6)	(KL)	0.00	2939.32
8	Amount charged by the Oil company	(Rs.)	0.00	127249594.0
9	Adjustment (+/-) in amount charged by Oil Company	(Rs.)		0.0
10	Total amount charged (8+9)	(Rs.)	0.00	127249594.0
11	Transportation charges by Rail/Ship/Road Transport	(Rs.)		
12	Adjustment (+/-) in amount charged by Railways/ transport company	(Rs.)	0.00	0.00
13	Demurrage charges , if any.	(Rs.)		
14	Total transportation charges 11+/-12-13)	(Rs.)	0.00	0.00
15	Total amount charged for Oil supplied including transportation (10+14)	(Rs.)	0.00	127249594.00
16	Weighted average GCV of OIL as Received	Kcal/KL	9,906.00	9,998.00
17	Quantity of Oil at station for the month (1+7)	(KL)	639.46	6643.12
18	Total amount charged for oil (2+15)	(Rs.)	32180516.53	281941188.52
19	Landed Cost of Oil (18/17)	Rs/Kl	50324.60	42441.05
20	Quantity of Oil consumed	(KL)	10.00	304.00
21	Value of Oil consumed (19*20)	(Rs.)	503245.97	12902080.60
22	Closing Stock of Oil (17-20)	(KL)	629.459	6339.12
23	Value Of Closing Stock (18-21)	(Rs.)	31677270.557	269039107.92

Details of Information to be submitted in respect of fuel for computation of energy charges

Station : TALCHER SUPER THERMAL POWER PROJECT
Month - DEC'18

STAGE 2

sl no	Particulars	Unit	LDO	HFO
1	Landed Cost of Oil at sl.no-19	Rs/Kl	50324.60	42441.05
2	Usage quantity for the month	Kl	0	152
3	Weighted average rate	Rs/Kl	42441.055	
4	Weighted average GCV of OIL on usage basis	(kcal/ltr)	9998	

नागप्रदीप अवधानम्
NAGAPRADEEP AVADHANAM
प्रबंधक (वित्त) / Manager (F&A)
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

अजय साहु
AJAY SAHOO
उप महाप्रबंधक (वित्त) एस.एस.सी./ई.आर-II
Dy. General Manager (Fin)SSC/ER-II
एनटीपीसी लिमिटेड / तालचेर कनिहा
NTPC Limited / Talcher Kaniha

For C.K. PRUSTY & ASSOCIATES
Chartered Accountants
Firm Reg. No. 323220E

CA C.K. PRUSTY, FCA
Partner
M. No.- 057318

Computation of Energy Charges

Form-15B
ADDITIONAL FORM

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

Computation of Energy Charges

1	Rate of Energy Charge from Sec. Fuel Oil/ Alternate Fuel (p/kwh) $(REC)_s$	$= (Q_s)_n \times P_s$	2.102
2	Heat Contribution from SFO / Alternate Fuel (H_s)	$= (Qs)_n \times (GCV)_s$	4.999
3	Heat Contribution from coal $(H_p)_s$	$= GHR - H_s$	2385.00
4	Specific Primary Fuel Consumption $(Qp)_n$	$= H_p / (GCV)_p$	0.881
5	Rate of Energy charge from Primary Fuel (p/kwh) $(REC)_p$		171.328
6	Rate of Energy charge ex-bus (p/kWh) (REC)	$= ((REC)_s + (REC)_p / (1-(AUX))$	184.992

		2019-20	2020-21	2021-22	2022-23	2023-24
No of Days in the year	Days	366	365	365	365	366
Sp. Oil consumption	ml/kwh	0.5	0.5	0.5	0.5	0.5
Auxiliary consumption	%	6.25	6.25	6.25	6.25	6.25
Heat Rate	Kcal/Kwh	2,390.00	2,390.00	2,390.00	2,390.00	2390
Computation of Variable Charges						
Variable Charge (Coal)	p/kwh	182.750	182.750	182.750	182.750	182.750
Variable Charge (Oil)	p/kwh	2.242	2.242	2.242	2.242	2.242
Total	p/kwh	184.992	184.992	184.992	184.992	184.992
Price of fuel from Form-15/15A						
Coal Cost	(Rs./MT)	1944.43	1944.43	1944.43	1944.43	1944.43
Oil Cost	(Rs./KL)	42043.54	42043.54	42043.54	42043.54	42043.54
Computation of Fuel Expenses for Calculation of IWC:						
ESO in a year	(MUs)	13999.50	13961.25	13961.25	13961.25	13999.500
ESO for 40 days	(MUs)	1530.000	1530.000	1530.00	1530.00	1530.000
Cost of coal for 40 Days	(Rs. Lakh)	27960.75	27960.75	27960.75	27960.75	27960.75
Cost of oil for 2 months	(Rs. Lakh)	523.19	521.76	521.76	521.76	523.19
Energy Expenses for 45 days	(Rs. Lakh)	31841.80	31841.80	31841.80	31841.80	31841.80

Coal		**3rd month**	**2nd month**	**1st month**	**Wtd. Avg.**
Wtd. Avg. Price of Coal	Rs./MT	1943.02	2116.97	1920.93	**1944.43**
Wtd. Avg. GCV of Coal as received	kCal/Kg	2557	2784	2988	**2,791.77**
Wtd. Avg. GCV of Coal as received after adjustement of 85 kcal/kg					**2706.77**
Sec. Oil					
Wtd. Avg. Price of Secondary Fuel	Rs/KL	41765.60	41765.60	42441.05	**42043.54**
Wtd. Avg. GCV of Secondary Fuel	kCal/L	9998.00	9998.00	9998.00	**9998.00**

PETITIONER

PART I
FORM- L

Name of the Petitioner: NTPC Ltd
Name of the Generating Station: Talcher Super Thermal power Station Stage-II

Statement of Capital cost

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01.04.19		
		Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening Gross Block Amount as per books	606668.31	3348.81	603319.5
	b) Amount of IDC in A(a) above	157.29		
	c) Amount of FC in A(a) above			
	d) Amount of FERV in A(a) above	1358.95		
	e) Amount of Hedging Cost in A(a) above			
	f) Amount of IEDC in A(a) above			
B	a) Addition in Gross Block Amount during the period (Direct purchases)			
	b) Amount of IDC in B(a) above			
	c) Amount of FC in B(a) above			
	d) Amount of FERV in B(a) above			
	e) Amount of Hedging Cost in B(a) above			
	f) Amount of IEDC in B(a) above			
C	a) Addition in Gross Block Amount during the period (Transferred from CWIP)			
	b) Amount of IDC in C(a) above			
	c) Amount of FC in C(a) above			
	d) Amount of FERV in C(a) above			
	e) Amount of Hedging Cost in C(a) above			
	f) Amount of IEDC in C(a) above			
D	a) Deletion in Gross Block Amount during the period			
	b) Amount of IDC in D(a) above			
	c) Amount of FC in D(a) above			
	d) Amount of FERV in D(a) above			
	e) Amount of Hedging Cost in D(a) above			
	f) Amount of IEDC in D(a) above			
E	a) Closing Gross Block Amount as per books			
	b) Amount of IDC in E(a) above			
	c) Amount of FC in E(a) above			
	d) Amount of FERV in E(a) above			
	e) Amount of Hedging Cost in E(a) above			
	f) Amount of IEDC in E(a) above			

(Petitioner)

PART 1
FORM- M

Name of the Petitioner: NTPC Ltd
Name of the Generating Station: Talcher Super Thermal power Station Stage-II

Statement of Capital Woks in Progress

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01.04.19		
		Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening CWIP as per books	26391.79	5242.45	21149.34
	b) Amount of IDC in A(a) above			
	c) Amount of FC in A(a) above			
	d) Amount of FERV in A(a) above			
	e) Amount of Hedging Cost in A(a) above			
	f) Amount of IEDC in A(a) above			
B	a) Addition in CWIP during the period			
	b) Amount of IDC in B(a) above			
	c) Amount of FC in B(a) above			
	d) Amount of FERV in B(a) above			
	e) Amount of Hedging Cost in B(a) above			
	f) Amount of IEDC in B(a) above			
C	a) Transferred to Gross Block Amount during the period			
	b) Amount of IDC in C(a) above			
	c) Amount of FC in C(a) above			
	d) Amount of FERV in C(a) above			
	e) Amount of Hedging Cost in C(a) above			
	f) Amount of IEDC in C(a) above			
D	a) Deletion in CWIP during the period			
	b) Amount of IDC in D(a) above			
	c) Amount of FC in D(a) above			
	d) Amount of FERV in D(a) above			
	e) Amount of Hedging Cost in D(a) above			
	f) Amount of IEDC in D(a) above			
E	a) Closing CWIP as per books			
	b) Amount of IDC in E(a) above			
	c) Amount of FC in E(a) above			
	d) Amount of FERV in E(a) above			
	e) Amount of Hedging Cost in E(a) above			
	f) Amount of IEDC in E(a) above			

(Petitioner)

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 Stage-II**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Gross Normative loan – Opening	3,85,939.22	3,90,710.38	4,08,913.89	4,22,738.19	4,36,238.39	4,55,659.19
2	Cumulative repayment of Normative loan up to previous year	3,85,939.22	3,90,710.38	4,01,754.57	4,15,015.06	4,30,394.44	4,48,676.92
3	**Net Normative loan – Opening**	-	-	7,159.32	7,723.13	5,843.95	6,982.27
4	Add: Increase due to addition during the year / period	4771.16	18,203.50	13,824.30	13,500.20	19,420.80	7,259.00
5	Less: Decrease due to de-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00	0.00
6	Less: Decrease due to reversal during the year / period						
7	Add: Increase due to discharges during the year / period	0.00	0.00	0.00	0.00	0.00	0.00
8	Less: Repayment of Loan	4771.16	11,044.19	13,260.48	15,379.39	18,282.48	14,241.27
9	**Net Normative loan - Closing**	-	7,159.31	7,723.13	5,843.95	6,982.27	-
10	**Average Normative loan**	-	3,579.65	7,441.23	6,783.54	6,413.11	3,491.14
11	Weighted average rate of interest	7.6804	7.4902	7.4343	7.4171	7.3812	7.1888
12	**Interest on Loan**	**0.00**	**268.12**	**553.20**	**503.14**	**473.36**	**250.97**

(Petitioner)

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 Stage-II**

(Amount in Rs Lakh)

S. No.	Particulars	Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8
1	Cost of Coal/Lignite	34,040.16	27960.75	27960.75	27960.75	27960.75	27960.75
2	Cost of Main Secondary Fuel Oil	593.32	523.19	521.76	521.76	521.76	523.19
3	Fuel Cost						
4	Liquid Fuel Stock						
5	O & M Expenses	4,355.05	4351.21	4532.91	4722.86	4920.23	5124.97
6	Maintenance Spares	10,452.13	10442.89	10878.99	11334.87	11808.54	12299.92
7	Receivables	64,977.34	44915.99	45702.77	46366.37	47170.06	47869.29
8	Total Working Capital	114418.00	88194.03	89597.17	90906.61	92381.34	93778.11
9	Rate of Interest	13.5000	12.0500	12.0500	12.0500	12.0500	12.0500
10	**Interest on Working Capital**	**15446.43**	**10627.38**	**10796.46**	**10954.25**	**11131.95**	**11300.26**

Petitioner

Liability as on 01.04.19 (Rs)

Name of the Party	Name of the work	Undischarged liabilities relating to GB 31.03.2019
		12,01,70,319
Liability up to 31.03.2014		
1052485 ASSTABHUJA ENGG & CONSTRUCTION	construction of balance work for plant boundary wall and road near Sarthipal village.	2,48,072
1030395 A P CONSTRUCTION	Construction of RCC and RRM pedestals for laying Cast-Basalt ash slurry pipe lines of St-II (	5,03,236
1044408 REVA INDUSTRIES LTD	LIFT 55.01-60M:EL OP. HOIST-10.01-12.5T	2,07,400
1064240 BENZFAB TECHNOLOGIES PVT LTD	SERVER WITHOUT MONITOR,BHEL P-13 MMI SYS	1,64,337
1004776 RELIANCE ELECTRONICS	DOOR FRAME METAL DETECTOR(DFMD)	16,038
1052865 S K COMMUNICATIONS PVT LTD	WIRELESS IP-CAM IMPLMT IN TSTPS TOWNSHP	58,500
1104750 INDUSTECH ENGINEERING SERVICES	COMPLETE PUMP ASSAMBLY OF AWRCP, 14UPH6	3,892
1001363 DC INDUSTRIAL PLANT SERV	90TPH:COMPLETE ASSY.	3,39,120
1005651 ROTORK CONTROLS(INDIA)PV	K500 G3A, 36 RPM, SYNCHROSET, ROTORK	33,079
1052874 SHANTI SUPPLIERS	PRO-ALSTOM-VTT11ZG8051BCH	33,079
1030395 A P CONSTRUCTION	Construction of flow balancing pond in CHP area of Stage-II of TSTPS.	23,81,579
1108614 SOUMYA RANJAN ENGINEERING	Cutting of rock for making drain at North-West side adjacent to Lagoon-II of ash dyke Stage-II at NTPC Ltd, Talcher-Kaniha.	65,223
1053022 GODREJ & BOYCE MFG CO LT	TABLE:GODREJ:UNITIZED T-8:STD	2,008
1005740 S V NETWORK TECHNOLOGIE	NOTEBOOK COMPUTER WITH ACCESSORIES	48,445
1009257 CCS COMPUTERS PVT LTD	LAPTOP: I-5,2.1-3.0GHZ,TFT-14"/15"&MOUSE	2,538
1009257 CCS COMPUTERS PVT LTD	DOCKING STATION - NON-USB, WITH KEYBOARD	15,525
1122583 PANI ENTERPRISES	WATER PURIFIER(ELECTRIC):AQUAGUARD-STD	17,600
1122583 PANI ENTERPRISES	AQUAGUARD for Operation Deptt	17,000
1052801 BYTE INFOSYS	A3 Size Network Colour Laser Printer and A4 Size N	83,861
1052801 BYTE INFOSYS	A3 Size Network Colour Laser Printer and A4 Size N	2,51,584
1005740 S V NETWORK TECHNOLOGIES	SUPPLY OF SMF CABLE WITH ACCESSARIES	1,65,036
1052865 S K COMMUNICATIONS PVT LTD	Telephone Sets with Accessories.	11,760
1018313 TRF LTD	V. ASSY &BOM DRIVE PULLEY	1,49,500
1039532 CG POWER AND INDUSTRIAL	XYMR:315MVA,400/220/33KV:HV BUSHING+:	10,600
1052647 B K ENTERPRISES & CO	ERECTION OF 450 MM BASALT PIPE	3,62,340
1076165 Subhash Infra Engineers Pvt Ltd	Filling at peripheral area of 'C' & 'D' zone of Lagoon-1 ,Stage # II dyke (Phase # VI).	1,05,38,680
1057697 SRI DURGA CONDEV PVT LTD	Peripheral filling (Ph-VII) at Zone 'A' & 'D' of Lagoon-2 Stage-II ash dyke of NTPC/TSTPS,Kaniha	1,06,15,054
1052663 Bharat Heavy Electricals Ltd	BALANCING DRUM RESTRICTION OF BFP	48,119
1001363 DC INDUSTRIAL PLANT SERVICES	90TPH:COMPLETE ASSY.	4,18,234
1052822 INDUSTRIAL SOLUTIONS	COMPLETE ACT ASMBLY,AUMA,SAR6E16	6,000
2004460 EXA ELETTRONICA PER AUTOMAZIONE	NETWORK PROCESS INNPM 12 FOR INFI-90	189
1052896 VARDHAMAN TRADERS	3 PH,132KW,985 RPM, FR-315L,	13,171

1144796 SWASTIK TRADING COMPANY	CONTROL FLUID P/P MOTOR,ST#2	22,013
1056592 MARATHON ELECTRIC MOTORS	SCIM-3.3KV,300KW,4POLE	88,500
1108367 UNICON TECHNO SOLUTIONS PVT LTD	MOTORS SINGLE SQ.CAGE 3.3KV 215 KW	46,850
1042132 INDUSTRIAL TRADE LINKS	CENTRIFUGAL SEPARATOR OIL CLEANER	2,16,300
1121056 PENTAIR VALVES AND CONTROLS INDIA	MAL-11DN50/65:COMPLETE ASSY.:	3,60,232
1052821 INDUSTRIAL POWER SYSTEM	DC MOTOR 220VOLT,15KW,2900RPM,FR;TDC225L	5,348
1026800 HAWA VALVES INDIA PVT LTD	GT VLV API:600 FLGD WC-6 CL-150 200MM	44,942
1132416 BRAY CONTROLS INDIA PVT LTD	KNF GATE VALVE:FLANGED FG260:150:250MM	8,109
1029539 PREMIER PUMPS PVT LTD	ESP VACUUM PUMP COMPLETE ASSY: CL-2001	1,36,800
1104750 INDUSTECH ENGINEERING SERVICES	IMPELLER FOR PUMP MODEL UP 250/30	22,973
1001363 DC INDUSTRIAL PLANT SERVICES	90TPH:COMPLETE ASSY.	1,49,625
1129402 K P MONDAL & SONS	250 NB CI GATE VALVE.	16,724
1104750 INDUSTECH ENGINEERING SERVICES	KIRLOSKAR PUMP ASSY MODEL DSM 125/40	27,193
1034783 BHARAT BIJLEE LIMITED	SCIM 3PH,415V,132KW,1485RPM,FM,FR-NB315M	63,190
1052821 INDUSTRIAL POWER SYSTEM	MOTOR 90KW 1500RPM,B3,FR-315S	8,762
1052896 VARDHAMAN TRADERS	VERTICAL MOTOR,110KW,1485RPM,ND315S	10,148
1036662 PPI PUMPS PVT. LTD.	ESP VACUUM PUMP COMPLETE ASSY: CL-2001	1,42,560
1061393 MSA INSTRUMENTS	SMART PRESSURE TRANSMITTER 0-10KG/CM2	241
1106970 FLOWCON ENGINEER INDIA PVT LTD	COMPLETE PUMP ASSEMBLY FOR FAHP PUMP, M	1,98,699
1005911 SIEMENS LTD	3PHASE O/C WITH E/F NUMERICAL REALY	46,718
1052876 SHREE LAXMI INDUSTRIAL HOUSE	IMPELLER WITH NUT,2,LPSWP,MATHER+PATT	2,377
1085519 KEROMIYONS INTECH PVT LTD	KNF GATE VALVE:FLANGED FG260:150:250MM	1,40,000
1063926 AIMIL LTD	COOLING TOWER GEAR BOX VIBRATION MONITORING SYSTEM	1,35,936
1053832 VINAR SYSTEMS PVT LTD	interconnecting conveyor between TP-15 to TP-11	1,43,155
1006452 SARTECH INTL	BOMB CALORIMETER- COMPLETE ASSY.	1,47,500
1071140 APPLIED ENGINEERING SERVICES	INFLATABLE JACK-40T-50T COMPLETE ASSY	10,125
1052886 SWAN SURGICALS & PHARMACEUTICALS	CARDIAC MULTI PARA MONITOR	5,000
1056195 PATWARI VARITIES	COOLER-WATER COMPLETE CAP:101-120LTR	2,483
1056195 PATWARI VARITIES	REFRIGERATOR(FREEZE) CAP:250-275 LTR	4,991
1056138 RADIANT AGENCIES	REFRIGERATOR(FREEZE):COMP:81-100LTR	158
1139825 MERCURY MOTORS	AIR CONDITIONER 2 TON SPLIT TYPE	10,775
1160159 MAXIM SYSTEMS	PHOTO COPIER MACHINE	8,937
1053022 GODREJ & BOYCE MFG CO LTD	AIR CONDITIONERS 1.5 TON SPLIT TYPE	6,756
1148801 PROGILITY TECHNOLOGIES PVT LTD	HIGH-DEFNITION VIDEO CONFERENCING SYSTEM	22,688
1030364 YORCO SALES PVT LTD	HIGH PRESSURE STEAM STERILIZER HORIZONTL	82,500
1129855 MAB ELV SYSTEMS PVT LTD	IP based CCTV System for CISF Armoury	2,25,538
1030743 DEEPEE ELECTRONICS	SERVER:2XHEX CORE,XEON E5-2630,2.3GHZ,16	9,000
1065437 STAAN BIOMED ENGINEERING PVT LTD	OBSTETRIC LABOUR TABLE WITH MATTRESS	885
1150481 SCRUM SYSTEM PVT LTD	SAFETY:KIOSK WITH STANDARD FEATURES	62,000

1039410 PROGILITY TECHNOLOGIES PVT LTD	SIEMENS HIPATH 3550 REMOTE GATEWAY	2,182
1052647 B K ENTERPRISES & CO	UNIT # 3 AHP	1,78,128
1057697 SRI DURGA CONDEV PVT LTD	Peripheral filling (Ph-VII) at Zone 'A' & 'D' of Lagoon-2 Stage-II ash dyke of NTPC/TSTPS,Kaniha	1,14,37,453
1076165 Subhash Infra Engineers Pvt Ltd	Filling at peripheral area of 'C' & 'D' zone of Lagoon-1 ,Stage # II dyke (Phase # VI).	1,02,28,013
1053832 VINAR SYSTEMS PVT LTD	interconnecting conveyor between TP-15 to TP-11	14,95,272
1053832 VINAR SYSTEMS PVT LTD	interconnecting conveyor between TP-15 to TP-11	6,87,374
1053832 VINAR SYSTEMS PVT LTD	interconnecting conveyor between TP-15 to TP-11	1,37,220
1133773 IDEAS ENGINEERS	Strengthening of 33kv ash pond feeders	21,393
1130893 GREEN POWER INTERNATIONAL PVT LTD	SET UP OF 400 TR FLUE GAS WASTE HEAT AIR CONDITION	10,000
1130893 GREEN POWER INTERNATIONAL PVT LTD	SET UP OF 400 TR FLUE GAS WASTE HEAT AIR CONDITION	23,58,293
1037120 SIDHARTH CONSTRUCTION &	Construction of 6th raising of Lagoon-1, Stage-II Ash Dyke of TSTPS Kaniha (4X500MW).	1,45,18,374
1052647 B K ENTERPRISES & CO	UNIT # 3 AHP	3,27,477
1052821 INDUSTRIAL POWER SYSTEM	CLCW P/P MOTOR,ST#1	69,746
1001363 DC INDUSTRIAL PLANT SERVICES	90TPII:COMPLETE ASSY.	2,00,081
1018313 TRF LTD	GB:BREVENI:SL 6002:COMP ASSY	16,84,800
2002094 GE POWER AG	SPINDLE FOR HP CONTROL VALVE	799
1052862 RAJESH & COMPANY	3600 DIA PF:AXIAL PISTON PUMP	52,098
1030468 ANALYSER INSTRUMENT CO PVT LTD	CHLORIDE ANALYSER - COMPLETE	2,25,000
1027117 MIRAJ ELECTRICAL & MECHANICAL CO	WELDING MACHINE OF SINGLE PHASE 230 V	1,770
1006802 INSTRUMENTATION LTD	PNEUMATIC ACTUATOR VA2D ILP MAKE	29,585
1005811 SAM TURBO INDUSTRY PVT LTD	VO 125/405+LC:COMPLETE ASSY.	73,306
1018313 TRF LTD	PE2312:BOOM NON DRIVE PULLEY	6,11,494
1037627 WPIL LTD	RF90TC: LINE SHAFT	4,33,237
1074314 Madhav Engineers Pvt Ltd	SECONDARY INJECTION KIT 1PH	1,36,328
1102049 GOLDEN ENGINEERING INDUSTRIES	1400:DRIVE PULLEY DXL1000X1600 SHAFTD200	41,40,429
1005911 SIEMENS LTD	NUMERICAL FEEDER PROTECTION RELAY 1A	1,44,506
1121056 PENTAIR VALVES AND CONTROLS INDIA	KEYSTONE PNEUM ACTUATOR MODEL F79U 006	23,317
1004016 OBLUM ELECTRICAL INDUSTRIES	216KV (245KV CLASS) LIGHTNING ARRESTOR	29,41,860
1112243 ELECON EPC PROJECTS LTD	ASK965:LUFF HYDR.CYLINDER+MANIFOLD	45,70,360
2005383 FLOWSERVE US INC	L120-190 LIMITORQUE ELECT.ACTUATOR,60RPM	16,08,930
1052787 ALFA LAVAL INDIA LTD	SOL.V/V: 48V,DIRECT ACT,NC,2PORT,3/8"BSP	30,111
1002344 HONEYWELL AUTOMATION INDIA LTD	HMI SERVER OPERATOR INTERFC AS PER SPECS	18,65,535
1037238 SUMESH PETROLEUM	COMPRESSOR+AIR DRYING UNIT	83,500
1055675 A P EARTH MOVERS	DLWSPR:TURBO CHARGER ASSLY	2,53,300
1044201 I-TORQ(INDIA)PRIVATE LIMITED	INFLATABLE JACK-40T-50T COMPLETE ASSY	16,638
1120375 HINDUSTHAN TECHNOLOGIES PVT LTD	FIRE FIGHTING SYSTEM MOBILE FIRE EXTINGU	52,155
1003656 MINAR HYDRO SYSTEMS PVT LTD	HYDRAULIC STUD TENSIONER STUD:M68*6	14,721
1053022 GODREJ & BOYCE MFG CO LTD	HAND OP:HYD PALLET TRUCK;CAP:2.5T	45,524
1055675 A P EARTH MOVERS	DLWSPR:TURBOSUPER CHARGER 3100/3300HP	4,86,190
1080251 Clyde Pumps India Pvt Ltd	FA1B75:COMPLETE PUMP ASSY.	45,69,600
1053425 KIRLOSKAR BROTHERS LTD	KIRLOSKAR PUMP ASSY MODEL DSM 125/40	33,894
1053425 KIRLOSKAR BROTHERS LTD	BHM130:HEAD SHAFT	8,21,579

1000079 ABB India Limited	DRIVE CONTROL MODULE: UTAC-01; MAKE: ABB	40,53,752
1002285 HINDUSTHAN ENGINEERING & INDUSTRIES	T CODE:BOBR COMPLETE WAGON	1,70,64,275
1029731 SMAP ENGINEERS PVT LTD	CABINET:SAFETY LOCK OUT BOX:SPEC	27,302
1039410 PROGILITY TECHNOLOGIES PVT LTD	BATTERY CHARGER	35,248
1011112 MASS-TECH CONTROLS PVT LTD	ELEC.VEHICLE CHARGING STN.: 230V AC, 16A	23,600
1039410 PROGILITY TECHNOLOGIES PVT LTD	MONITOR: LED,SIZE:55", RESOLN:1920X1200	3,973
1105030 VARELI TECNAC PVT LTD	COMPUTER WITH ACCESSORIES	6,38,554
1039410 PROGILITY TECHNOLOGIES PVT LTD	VIDEO WALL: 55"(2X2MATRIX),1920X1080	1,70,463
1039410 PROGILITY TECHNOLOGIES PVT LTD	24PORT10/100/1000 BASE-T ETHERNET SWITCH	64,900
1021374 BOMBAY TOOLS SUPPLYING AGENCY	MICROMETER - INTERNAL IS:2966, 50-500MM	350
1054429 BNA TECHNOLOGY CONSULTING LTD	LAYER-3 ETHERNET SWITCH/ 19" 42U RACK/NM SW	4,75,000
1056183 USHA INTERNATIONAL LTD	FAN:EXHAUST:251-300MM SWEEP	39,027
1055977 CROMPTON GREAVES LTD	FAN: CEILING, 1200MM SWEEP	9,657
1030364 YORCO SALES PVT LTD	HOT AIR OVEN	3,991
1006471 SAVANT INSTRUMENTS PVT LTD	CHEM-OXYGEN DEMAND ANALYZER :COMP ASSY	2,442
1003881 NEVCO ENGINEERS PVT LTD	OPTICAL PYROMETER	2,163
1024311 DETECH DEVICES PVT LTD	SEARCH LIGHT-LONG BEAM/RANGE PORTABLE	53,900
1053022 GODREJ & BOYCE MFG CO LTD	WINDOW AIR CONDITIONER 1.5 TON	1,62,625
1099776 LABINDIA ANALYTICAL INSTRUMENTS PVT	:ALLOY ANALYZER:COMP ASSY	1,17,549
1103978 THERMOSYSTEMS PVT LTD	Design, Engineering, Supply, Erection, Testing & Commissioning of Fire detection & Protection System of Stage-II CHP (Supply of main equipment).(CAPITAL ADDITION BUDGET)	10,95,084
1103978 THERMOSYSTEMS PVT LTD	Design, Engineering, Supply, Erection, Testing & Commissioning of Fire detection & Protection System of Stage-II CHP (Erection & Commissioning). (CAPITAL ADDITION BUDGET)	4,79,624
1103978 THERMOSYSTEMS PVT LTD	Design, Engineering, Supply, Erection, Testing & Commissioning of Fire detection & Protection System of Stage-II CHP (Civil Works). (CAPITAL ADDITION BUDGET)	91,471
1057697 SRI DURGA CONDEV PVT LTD	Peripheral filling (Ph-VII) at Zone 'A' & 'D' of Lagoon-2 Stage-II ash dyke of NTPC/TSTPS,Kaniha	90,38,738
1076165 Subhash Infra Engineers Pvt Ltd	Filling at peripheral area of 'C' & 'D' zone of Lagoon-1 ,Stage # II dyke (Phase # VI).	74,18,356
1130893 GREEN POWER INTERNATIONAL PVT LTD	SET UP OF 400 TR FLUE GAS WASTE HEAT AIR CONDITION	51,36,658
1037120 SIDHARTH CONSTRUCTION &	Construction of 6th raising of Lagoon-1, Stage-II Ash Dyke of TSTPS Kaniha (4X500MW).	2,08,94,670
1052687 BUDHRAJA MINING & CONSTRUCTION LTD	Construction of 6th Raising of Lag-2, St-II, Ash dyke.	4,25,30,730
1052647 B K ENTERPRISES & CO	Removal of existing MS pipe in Ash Slurry Disposal Line and Erection of 450NB Basalt Pipe.	1,68,818
1130893 GREEN POWER INTERNATIONAL PVT LTD	SET UP OF 400 TR FLUE GAS WASTE HEAT AIR CONDITION	4,54,847
1057697 SRI DURGA CONDEV PVT LTD	Construction of 7th Raising of lagoon-1, St#II ash dyke of TSTPS, Kaniha.	83,62,006
	GRAND TOTAL	**33,48,79,193**

PART 1
FORM-T

Summary of issue involved in the petition

Name of the Company :		NTPC Limited
Name of the Power Station :		Talcher Super Thermal power Station Stage-II
1	Petitioner:	NTPC Limited
2	Subject	Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for approval of tariff of Talcher Super Thermal Power Station, Stage-II (2000MW) for the period from 01.04.2019 to 31.03.2024
3	**Prayer:** i) Approve tariff of Talcher Super Thermal Power Station, Stage-II (2000MW) for the tariff period 01.04.2019 to 31.03.2024. ii) Allow the recovery of filing fees as & when paid to the Hon'ble Commission and publication expenses from the beneficiaries. iii) Allow reimbursement of Ash Transportation Charges directly from the beneficiaries quarterly on net basis. iv) Pass any other order as it may deem fit in the circumstances mentioned above.	
4	Respondents	
	Name of Respondents	As per petition
	a.	
	b.	
	c.	
5	Project Scope	
	Cost	
	Commissioning	
	Claim	
	AFC	
	Capital cost	
	Initial spare	
	NAPAF (Gen)	
	Any Specific	

PETITIONER

4928 9-4 (65)

ANNEX-I

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-eicwr.od@nic.in)

Lr. No. : HWD/Estr./2019-20 1469-72 /WE /Dated 26/3/19

To

1. The General Manager (O & M), M/s N.T.P.C. Ltd.
   At/P.O. : Deepsikha, Kaniha, 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 license fee/ Special Water rate w.e.f. 01.04.2019 .

Ref : Letter No. 10718/WE Dtd. 04.04.2018.

Sir,

In enclosing herewith the letter on the subject cited above, it is to intimate that as per Odisha Irrigation (Amendment) Rules, 2016, 23 A (2) (f) , the license fees for drawal 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 i.e. 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 license fees @ 10% on water cess will be effective from 01.04.2019 as it has already been clarified 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 i.e. Rs. 5.60/ M^3.

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 Govt. in DoWR is enclosed herewith for your information and necessary action at your end.

Encl : As above

Yours faithfully,

26/3/19
Executive Engineer,
Head Works Division, Samal

Memo No. 1473-74 /WE /Dated 26/3/19

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

26/3/19
Executive Engineer

P.t.o....

06/4/19

Memo No. 1475-76/WB /Dated 26/3/19

Copy along with the enclosures submitted to the Chief Engineer, Water Services, Secha Sadan, BBSR/ Chief Engineer & Basin Manager, Brahmani Basin, Samal for favour of kind information and necessary action.

26/3/19
Executive Engineer

Memo No. 1477/WB /Dated 26/3/19

Copy along with the enclosures submitted to the Addl. Project Director-cum-C.C.E., Rengali Irrigation Project, Samal for favour of kind information and necessary action.

26/3/19
Executive Engineer

ANNEX-II

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]
A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-0674-2564033 / EPABX : 2561909/2562847
E-mail: paribesh1@ospcboard.org/ Website: www.ospcboard.org

No. 4606 / IND-I-CON-105 Dt. 27.03.17

CONSENT ORDER

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 online application **ID No. 954215, Dt. 26.12.2016**

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. D Sarkar, Group General Manager**

Address- **At-Deepsikha , Dist-Angul-759 147**

This consent order is valid for the period **from 01.04.2017 to 31.03.2018**

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)	2x500MW 4x500MW

P.T.O

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 (mg/Nm^3)			
				PM	SO_2	NO_x	Hg
Emission standards applicable up to 06.12.2017							
1	Stack attached to ESPs of Unit-1 &2	275	583	100	--	--	--
2	Stack attached to ESPs of Unit-3 & 4	275	574		--	--	--
3	Stack attached to ESPs of Unit-5 & 6	275	574		--	--	--
Emission standards applicable w.e.f. 07.12.2017							
1	Stack attached to ESPs of Unit-1 & 2	275	583	100	200	600	0.03
2	Stack attached to ESPs of Unit- 3 & 4	275	574	50	200	300	0.03
3	Stack attached to ESPs of Unit- 5 & 6	275	574	50	200	300	0.03

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 TPD	--	--	--	Utilization as per new fly ash notification. Rest to be disposed through lean slurry to ash pond.

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 lace 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.

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)

P.T.O

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.

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.

F. SPECIAL CONDITIONS

F1. (Air Pollution Control)

1. All the online continuous stack emission monitoring systems (CEMS) for measurement of particulate matter and gaseous pollutants shall be operated effectively and uninterruptedly and the online monitoring data so generated shall be transmitted to SPCB and CPCB server on a continuous basis.
2. All the online continuous ambient air quality monitoring stations (CAAQMS) shall be operated effectively and uninterruptedly and the online monitoring data so generated shall be transmitted to SPCB and CPCB server on a continuous basis.
3. Air pollution control measures installed at different potential dust generating points shall be operated continuously and effectively to control fugitive dust emission.
4. Steps shall be taken for regular monitoring of Mercury (Hg) in the stack of boilers and submit data to the Board.
5. 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.
6. Steps shall be taken for installation of Flue Gas Desulpurisation (FGD) system in future if required to keep the SO2 level within 600mg/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.
7. 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.
8. 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.
9. 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.
10. 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.
11. Ambient air quality shall conform to the National Ambient Air Quality standards as prescribed under E P Rules , 1986.

12. 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.254(E),dt. 25.01.2016 of MOEF, Govt. of India.

13. Supply of fly ash to Brick Manufacturing units shall be done on free of cost. Further, transportation cost of fly ash within 100km radius of your plant shall be borne by you or a subsidy of Rs.150/- per ton of fly ash shall be provided to all the fly ash brick, tile, road construction or other fly ash based construction materials manufacturing units or for use in road making if utilizing your fly ash.

14. 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.

15. 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.

16. 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.

17. Good housekeeping practices shall be followed to improve the work environment. All roads and shop floors shall be cleaned regularly.

18. 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.

19. Care shall be taken so that ambient noise level shall conform to the standards prescribed under E(P) Act ,1986.

20. Periodical maintenance of all equipment, plant piping (including pollution control system) shall be carried out including calibration and testing.

21. 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

22. 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.

23. 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

P.T.O

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.

24. 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 3.5m3/MWh by 6th Dec, 2017 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. Concrete drains will be constructed along the pipeline corridor to prevent any discharge of ash slurry to any natural stream.
5. The pipeline corridor from the plant side up to the ash pond area shall be cleared regularly of vegetation growth.
6. The online continuous effluent quality monitoring system (EQMS) shall be operated effectively and uninterruptedly and the online monitoring data so generated shall be transmitted to SPCB and CPCB server on a continuous basis.
7. The Effluent Treatment Plant (ETP) and the Sewage Treatment Plant (STP) shall be operated effectively and continuously through a dedicated in house team or through continued AMC so as to confirm to the prescribed norms.
8. 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.

P.T.O

9. 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.

10. The unit shall submit monthly returns in prescribed format to the Cess assessing authority. And pay the assessed Cess dues up-to-date.

11. 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.

12. The safety, stability of the ash dykes study shall be carried out by experts taking all hydraulic parameters into consideration.

13. The slurry pipe lines shall be aligned suitably in the lagoon of ash pond, so that ash is distributed uniformly.

14. The unit shall recycle the effluent of coal settling pit, over flow effluent and seepage effluent of the lagoon to the maximum extent.

15. The unit shall implement recommendations in the surface runoff study report.

16. 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.

17. Ash pond capacity augmentation shall be done to create volume for future storage.

18. Entire wastewater from leakages blow down and DM plant shall be recirculate.

19. The unit shall provide separate settling arrangement for surface runoff from dry ash silo area.

20. The storm water drains shall be maintained separately without being mixed up with the industrial effluent or sewage effluent.

21. 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.

22. The industry shall abide by E(P) Act, 1986 and Rules framed there-under.

23. The industry is required to submit a water balance diagram, affix separate 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.

24. 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.

25. 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.

26. The industry shall take steps for fulfillment of all the stipulations and necessary measures to check pollution.

27. Consent to operate is subject to availability of all other statutory clearances required under relevant Acts/Rules and fulfillment of required procedural formalities.

G. Additional Conditions :

1. The industry shall comply with the new standard prescribed by MoEF & CC in respect of emission PM, SO2, NOx and Mercury by 6th Dec, 2017 as mentioned at Table-'C'. Monitoring system for Mercury shall be installed and data shall be furnished to the Board.

2. The industry shall complete the jobs already committed through bank guarantee within stipulated dateline.

3. Up-gradation of STP shall be completed by 20th April 2017 as per the direction of the CPCB to meet the prescribed standard.

4. Adequate dust suppression system shall be adopted on the surface of the dry portion of the ash pond to avoid generation of fugitive dust to maintain the ambient air.

H.Conditions covered under bank guarantee (B.G. No. 0999614BG0001944, 22.08.2014) for time bound compliance:

(1) Laying cast basalt pipeline replacing MS slurry pipeline for stage-II units to prevent frequent rupture of the ash slurry pipe line shall be completed by 30.09.2017.

(2) Up-gradation of ESPs of Unit -1 and Unit -2 of Stage-I through retrofitting shall be completed by 31.03.2017 and by 31.05.2017 respectively.

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

To

The Group General Manager
M/s. Talcher Super Thermal Power Stations , NTPC Ltd.
PO-Deepsikha, Kaniha
Dist-Angul

MEMBER SECRETARY
State Pollution Control Board, Odisha

P.T.O

Memo No._____/Dt.

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) SEE, Cess (Head Office)
vi) Consent Register
vii) Sr. Env. Scientist (L)

SR. ENV. ENGINEER, L-I (C)
State Pollution Control Board, Odisha

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 5^0C above the receiving water temperature	-------	--------	Shall not exceed 5^0C 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 (20^0C) 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

P.T.O

17.	Cardmium (as Cd) mg/1 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 Sc) mg/l max.	0.05	0.05	--------	0.05
23.	Nickel (as Nil) 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.	Phennolic compounds as (C_6H_5OH) mg/l max.	1.0	5.0	--------	5.0
29.	Radioactive materials a. Alpha emitter micro curle/ml. b. Beta emitter micro curle/ml.	10^7 10^6	10^7 10^6	10^8 10^7	10^7 10^6
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

PART- B:NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(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 (O_3) $\mu g/m^3$	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^3	8 Hours **	02	02	- Non Dispersive Infra Red (NDIR)
		1 Hours **	04	04	Spectroscopy
8.	Ammonia (NH_3) $\mu g/m^3$	Annual*	100	100	-Chemiluminescence - Indophenol Blue Method
		24 Hours**	400	400	
9.	Benzene (C_6H_6) $\mu g/m^3$	Annul *	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 I04 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

ANNEX - III

V.K. ROY
Executive Director,
Traffic Transportation

भारत सरकार
रेल मंत्रालय, (रेलवे बोर्ड)
नई दिल्ली-११० ००१
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
NEW DELHI-110001

D.O. 2004/TT-V/58

New Delhi,
July 20, 2004.

Dear Shri Jain,

As you are aware, NTPC has set up pithead thermal power stations on MGR system all over the country for transportation of coal through its own wagons and locomotives. However, it has been our experience that in a number of cases, railways come in the picture for transportation of coal by rail even to the pithead power stations because of inadequate availability of coal in the coal field linked to the pithead power station or some labour problem and labour strike affecting availability of coal etc.

To cite a few examples, Farakka and Kahalgaon TPSs of NTPC are pithead power stations having their own MGR system. But due to inadequate availability of coal in ECL for about a year and half, railways have been regularly transporting 5-6 lakh tonnes of coal per month by rail even from coal fields other than ECL to meet the requirements of power generation at the above two power stations. In past, movement of coal by rail to Ramagundam TPS (which too is a pithead power station having its own MGR system) had also taken place a number of times on account of labour problems in Singareni coalfields.

Even in respect of Talcher area, railways are moving coal by rail to TTPS power station and, recently, there is a request from NTPC to move coal by rail from Talcher sidings to NTPC, Talcher which again is a pithead power station having its own MGR system.

The above examples amply illustrate that the movement of coal by rail even to pithead power stations of NTPC does become an inescapable need in a number of cases. For this purpose, it would be appropriate to plan proper infrastructure in the shape of layouts such that movement of coal rakes by rail takes place in forward direction not only from the linked coalfields but also from other coalfields in case coal requirement is to be met from other than the linked coalfields. Coal over long distances by rail is always moving in BOXN rakes. NTPC should also plan for tipplers in addition to track hoppers so that coal transported by rail from distant coalfields in BOXN rakes gets released without any hindrance.

... 2/-

I am trying to emphasize this because, in case of pithead power stations, while inalizing the layout for railway sidings and take off etc., NTPC plans only for movement of furnace oil by rail, whereas later on, movement of coal also by rail is required to be lone, as brought out above causing serious operational bottlenecks in movement of coal akes from the base station to the pithead power stations of NTPC.

I shall be grateful if you kindly issue appropriate directives to your planning and project branch to keep the above aspects in mind while preparing plans for railway idings in case of new pithead power stations of NTPC.

Yours sincerely,

(V.K. ROY)

Shri C.P. Jain,
Chairman cum Managing Director,
NTPC,
Scope Complex,
NEW DELHI.

Copy to:

i) Shri AK Kutty, JS(Power), Shram Shakti Bhavan, New Delhi for information.

ii) All COMs for information and necessary action.

iii) EDPP & ED(Plg) Railway Board.

ANNEX - IV

SECRET

F.No.1/6/2011/IT (E-22-Part-1)(246867)
Government of India
Ministry of Power

Shram Shakti Bhavan, Rafi Marg,
New Delhi, Dated: 23rd October , 2019

To

1. Chairperson-CEA
2. CMD-NTPC/NHPC/POWERGRID/PFC/REC/NEEPCO/THDC/POSOCO/SJVNL
3. Chairman-DVC/BBMB
4. DG-BEE/NPTI/CPRI
5. Secretary-CERC/ATE
6. MD-EESL
7. CISO-MoP [Kind.Attn. Shri MAKP Singh, CE(IT), CEA)]
8. CERT-Thermal/Hydro/Transmission/Distribution
9. Sr.Tech.Dir. (NIC)-MoP

All directed

Sir,

I am directed to inform that reliable inputs indicate that Pak based anti-India agencies have prepared a blue print to hack/exploit computer/cyber systems in India and are exploring capabilities towards implementing the same immediately.

2. This new strategy aims to concentrate efforts towards disrupting important Indian economic hubs and vital installations, through cyber attacks and disrupting the computer systems as an alternative to trans-border terrorism. Such attacks, especially on our power, transport, financial and energy related systems, can potentially damage economic activities in the country and cause large scale disruption in affected areas/sectors.

3. Keeping in view of the prevailing security scenario in the country, it is requested to urgently review and strengthen the cyber/computer and physical security of vital installations and critical infrastructure.

4. The matter may be accorded top priority.

Yours Faithfully,

23/10/19

(Praveen Kumar)
Under Secretary to the Govt. of India
Tel.No.23715507 ext. 281
E-mail-mop@nic.in

(10) संबद्ध प्राधिकारी सभी सरकारी स्कीमों या कार्यक्रमों में, उदाहरणार्थ महात्मा गांधी राष्ट्रीय ग्रामीण रोजगार गारंटी अधिनियम, 2005 (मनरेगा), स्वच्छ भारत अभियान, शहरी और ग्रामीण आवासन स्कीम, जहां संनिर्मित क्षेत्र एक हजार वर्ग फुट से अधिक है और अवसंरचना संबंधी संनिर्माण में, जिसके अंतर्गत अभिहित औद्योगिक संपदाओं या पार्कों या विशेष आर्थिक जोनों में भवन निर्माण भी है, ऐश आधारित ईंटों या उत्पादों के आज्ञापक उपयोग को सुनिश्चित करेंगे ।

(11) कृषि मंत्रालय कृषि क्रियाकलापों में ऐश के मृदा अनुकूलक के रूप में उपयोग का संवर्धन करने पर विचार कर सकेगा ।"

5. सभी संबद्ध प्राधिकारियों द्वारा उपरोक्त उपबंधों का अनुपालन करने की समयावधि 31 दिसंबर, 2017 है । कोयला या लिग्नाइट आधारित तापीय विद्युत संयंत्र, उनके द्वारा उत्पादित फ्लाई ऐश के 100 प्रतिशत उपयोग के अतिरिक्त उपरोक्त उपबंधों का अनुपालन 31 दिसंबर, 2017 से पूर्व करेंगे ।

[फा. सं. 9-8/2005-एचएसएमडी]

विश्वनाथ सिन्हा, संयुक्त सचिव

टिप्पण:- मूल अधिसूचना भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना सं. का.आ. 763(अ), तारीख 14 सितंबर, 1999 द्वारा प्रकाशित की गई थी और इसमें पश्चातवर्ती संशोधन अधिसूचना सं. का.आ. 979(अ), तारीख 27 अगस्त, 2003 और का.आ. 2804(अ), तारीख 3 नवंबर, 2009 द्वारा किए गए थे ।

MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 25th January, 2016

S.O. 254(E).—Whereas a draft of certain amendments to the Government of India in the Ministry of Environment, Forests and Climate Change number S.O. 763(E), dated the 14th September, 1999 (hereinafter referred to as the said notification) which the Central Government proposes to make under sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, was published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii), *vide* S.O. 1396(E), dated the 25th May, 2015 inviting objections and suggestions from all persons likely to be affected thereby before the expiry of sixty days from the date on which copies of the Gazette containing the said draft amendments were made available to the public.

And, whereas copies of the said Gazette were made available to the public on 25th May, 2015;

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

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following amendments to the said notification, namely: —

1. In the said notification, in paragraph 1,-

(a) in sub-paragraph 1(A), for the words "hundred kilometers", the words "three hundred kilometers" shall be substituted;

(b) in sub-paragraph (3), for the figures and letters "100 km", the words "three hundred kilometers" shall be substituted;

(c) in sub-paragraph (5), for the words "hundred Kilometers", the words "three hundred Kilometers" shall be substituted;

(d) in sub-paragraph (7), for the words "hundred Kilometers", the words "three hundred Kilometers" shall be substituted.

2. **In the said notification, in paragraph 2:-**

(a) after sub-paragraph (1), the following proviso shall be inserted, namely:-

"provided further that the restriction to provide 20 % of dry ESP fly ash free of cost shall not apply to those thermal power plants which are able to utlise 100 % fly ash in the prescribed manner."

(b) after sub-paragraph (7), the following sub-paragraphs shall be inserted, namely:-

"(8) Every coal or lignite based thermal power plants (including captive and or co-generating stations) shall, within three months from the date of notification, upload on their website the details of stock of each type of ash available with them and thereafter shall update the stock position at least once a Month.

(9) Every coal or lignite based thermal power plants shall install dedicated dry ash silos having separate access roads so as to ease the delivery of fly ash.

(10) The cost of transportation of ash for road construction projects or for. manufacturing of ash based products or use as soil conditioner in agriculture activity within a radius of hundred kilometers from a coal or lignite based thermal power plant shall be borne by such coal or lignite based thermal power plant and the cost of transportation beyond the radius of hundred kilometers and up to three hundred kilometers shall be shared equally between the user and the coal or lignite based thermal power plant.

(11) The coal or lignite based thermal power plants shall promote, adopt and set up (financial and other associated infrastructure) the ash based product manufacturing facilities within their premises or in the vicinity of their premises so as to reduce the transportation of ash.

(12) The coal or lignite based thermal power plants in the vicinity of the cities shall promote, support and assist in setting up of ash based product manufacturing units so as to meet the requirements of bricks and other building construction materials and also to reduce the transportation.

(13) To ensure that the contractor of road construction utilizes the ash in the road, the Authority concerned for road construction shall link the payment of contractor with the certification of ash supply from the thermal power plants.

(14) The coal or lignite based thermal power plants shall within a radius of three hundred kilometers bear the entire cost of transportation of ash to the site of road construction projects under Pradhan Mantri Gramin Sadak Yojna and asset creation programmes of the Government involving construction of buildings, road, dams and embankments".

3. **In the said notification, in paragraph 2, sub-paragraph (2A) be read as sub-paragraph (15) and at the end of the said sub-paragraph, the following sub-paragraph shall be added, namely:-**

"and the coal or lignite based thermal power plants located in coastal districts shall support, assist or directly engage into construction of shore line protection measures."

4. **In the said notification, in paragraph 3, after sub-paragraph (7), the following shall be inserted, namely:-**

"(8) It shall be the responsibility of all State Authorities approving various construction projects to ensure that Memorandum of Understanding or any other arrangement for using fly ash or fly ash based products is made between the thermal power plants and the construction agency or contractors.

(9) The State Authorities shall amend Building Bye Laws of the cities having population One million or more so as to ensure the mandatory use of ash based bricks keeping in view the specifications necessary as per technical requirements for load bearing structures.

(10) The concerned Authority shall ensure mandatory use of ash based bricks or products in all Government Scheme or programmes e.g. Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (MNREGA), SWACHH BHARAT ABIYAN, Urban and Rural Housing Scheme, where built up area is more than 1000 square feet and in infrastructure construction including buildings in designated industrial Estates or Parks or Special Economic Zone.

(11) The Ministry of Agriculture may consider the promotion of ash utilisation in agriculture as soil conditioner."

5. **The time period to comply with the above provisions by all concerned authorities is 31st December, 2017. The coal or lignite based thermal power plants shall comply with the above provision in addition to 100 % utilization of fly ash generated by them before 31st December, 2017.**

[F. No. 9-8/2005-HSMD]

BISHWANATH SINHA, Jt. Secy.

Note:- The principal notification was published in the Gazette of India, Extraordinary, Part II, section 3, Sub-section (ii) *vide* notification S.O. 763(E), dated the 14th September, 1999 and was subsequently amended *vide* notification S.O. 979(E), dated the 27th August, 2003 and S.O. 2804(E), dated the 3rd November, 2009.

Printed by the Manager, Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

ANNEX - VI

		(NOx)	
		पारा (Hg)	0.03 mg/Nm^3

* 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 3.5m^3/MWh within a period

			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

ANNEX - VII

केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
(पर्यावरण एवं वन मंत्रालय, भारत सरकार)
(MINISTRY OF ENVIRONMENT & FORESTS, GOVT. OF INDIA)

File No. A-19014/43/06-MON

Date: 21 April, 2015

To,

The Chairman,
Orissa Pollution Control Board,
A-118, Nilakanta Nagar, Unit –VIII,
Bhubaneshwar - 751012

Directions Under Section 18(1)(b) of the Water (Prevention and Control of Pollution) Act, 1974 regarding treatment and utilization of sewage.

Whereas, amongst others, under Section 16 of the Water (Prevention and Control of Pollution) Act, 1974, one of the functions of the Central Pollution Control Board (CPCB) constituted under the Water (Prevention & Control of Pollution) Act, 1974 is to coordinate activities of the SPCBs/PCCs and to provide technical assistance and guidance to SPCBs/PCCs; and

Whereas, amongst others, under Section 17 of the Water (Prevention and Control of Pollution) Act, 1974, one of the functions of the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs), constituted under the Water (Prevention & Control of Pollution) Act, 1974 is to plan a comprehensive programme for prevention, control or abatement of pollution of streams and wells in the State and to secure the execution thereof;

Whereas, sewage, the single major source for water resources deterioration contributes 70% of the pollution load to water bodies.Consumption of polluted water adversely impact human health and aquatic life.Quality of treated sewage generally of lower standard further adding to problem.Very sizeable gap is observed in generation and treatment of sewage.

Whereas, the Central Pollution Control Board reported during 2010-2011 that out of 38254 MLD of sewage generated by class I cities and class II towns, only 11787 MLD has been treated and thereby leaving huge gap between sewage generation and sewage treatment. Central Pollution Control Board, reassessed sewage generation and treatment capacity for Urban Population of India for the year 2015. The sewage generation estimated to be 62000 MLD approximately and sewage treatment capacity developed so far is only 23277 MLD from 816 STPs.

Whereas, sewage treatment capacity of Orissa State is 1513.55 MLD in contrast to sewage generation of 1121 MLD. 392.55 MLD untreated sewage discharge to water bodies that is responsible for deteriorating its water quality.

Whereas, water quality monitoring results of rivers as indicated that water quality has been affected because of disposal of untreated or partially treated sewage into the water bodies and as a result, there are high number of faecal bacteria making the water body unfit for human consumption or for other uses.

'परिवेश भवन' पूर्वी अर्जुन नगर, दिल्ली-110032
'Parivesh Bhawan', East Arjun Nagar, Delhi - 110032
दूरभाष/Tel. : 43102030, फैक्स/Fax : 22305793, 22307078, 22307079, 22301932, 22304948
ई–मेल/e-mail : cpcb@nic.in वेबसाईट/Website : www.cpcb.nic.in

Whereas, the cities and the towns are not having adequate system for sewage collection and its treatment and thus entire waste water either falls into rivers or lakes or remains inundated on land causing potential risk to the ground water contamination.

Whereas, the majority of the municipal authorities have not sought consents under the Water (Prevention and Control of Pollution) Act, 1974 which is a statutory requirement and also have not provided facilities for sewage treatment.

Whereas, the State Pollution Control Board under Section 17 of the Water Act has been mandated with the following functions which inter-alia including;

(f) to inspect sewage or trade effluents, works and plants for the treatment of sewage and trade effluents and to review plans, specifications or other data relating to plants set up for the treatment of water, works for the purification thereof and the system for the disposal of sewage or trade effluents or in connection with the grant of any consent as required by this Act;

(g) lay down, modify or annul effluent standards for the sewage and trade effluents and for the quality of receiving waters (not being water in an inter-State stream) resulting from the discharge of effluents and to classify waters of the State;

(h) to evolve economical and reliable methods of treatment of sewage and trade effluents, having regard to the peculiar conditions of soils, climate and water resources of different regions and more especially the prevailing flow characteristics of water in streams and wells which render it impossible to attain even the minimum degree of dilution;

(i) to evolve methods of utilization of sewage and suitable trade effluents in agriculture;

(j) to evolve efficient methods of disposal of sewage and trade effluents on land, as are necessary on account of the predominant conditions of scant stream flows that do not provide for major part of the year the minimum degree of dilution;

(k) to lay down standards of treatment of sewage and trade effluents to be discharged into any particular stream taking into account the minimum fair weather dilution available in that stream and the tolerance limits of pollution permissible in the water of the stream, after the discharge of such effluents;

(m) to lay down effluent standards to be complied with by persons while causing discharge of sewage or sullage or both and to lay down, modify or annul effluent standards for the sewage and trade effluents;

Whereas,the Central Board in its 168th meeting held on 27/03/2015 resolved to notify the standards for treated sewage. These standards for discharge of treated sewage from STPs have also been endorsed in the Minster's Conference held during April 6-7, 2015 and 59th Conference of Chairmen & Member Secretaries of Pollution Control Boards and Pollution Control committees held on april 8, 2015;

Whereas, Government of Tamilnadu mandated to develop sewerage system in all the municipalities and all household to mandatorily connect to sewerage system as well as to pay monthly fee for sewage management to cover CAPEX and OPEX;

NOW THEREFORE, in view of the above stated facts and realizing that rivers and water bodies have been polluted and to prevent further deterioration ofsurface, sub-surface and coastal waters, it is essential to issue following directions under section 18(1)(b) of the Water(Prevention and Control of Pollution) Act, 1974. The following directions are hereby issued for compliance;

1. State Pollution Control Board shall make mandatory for local/urban bodies to set up a seweregе system for sewage collection, underground conveyance, treatment and its disposals to cover the entire local/urban area to bridge the widening treatment gap along with enforcement of consent management in line with standards for sewage treatment (Annexure-I).
2. SPCB/PCC shall issue directions to all municipalities and other concerned authorities in the State/UT responsible for treatment and disposal of sewage to the following effect

(I) The existing STPs which are being operated before issuance of these directions shall meet the standards within two years from the date of issuance of these directions.

(II) All the local bodies shall seek consent under Water (Prevention and Control of Pollution) Act, 1974 from the SPCB/Committee within a period of 60 Days.

(III) Secondary treated sewage should be mandatorily sold for use for non potable purposes such as industrial process, railways & bus cleaning, flushing of toilets through dual piping, horticulture and irrigation. No potable water to be allowed for such activities. They will also digest methane for captive power generation to further improve viability of STPs.

(IV) Dual piping system should be enforced in new housing constructions for use of treated sewage for flushing propose.

(V) Each municipal authority and the concerned authority shall submit a time bound action plan for setting up sewerage system covering proper collection, treatment and disposal of sewage generated in the local/urban area and such plan shall be submitted by the municipal authority to the State Board within a period of 90-120 Days.

(VI) In case of disposal of effluents on land or river or any water body including coastal water/creek or a drain, the treated effluents shall meet the suggested standards annexed to these direction.

(VII) The new sewage treatment plants which will come in existence after the issuance of these directions shall be designed to treat and achieve standards as per the suggested standards.

3. The State Board shall acknowledge the receipt of this direction within 10 days and shall communicate the status on the actions taken to achieve before 30 September 2015 informing the status of consents along with the action plan for treatment and disposal of sewage.

Shashi Shekhar 21/4/15

(Shashi Shekhar)
Chairman

ANNEXURE-I

EFFLUENT DISCHARGED STANDARDS FOR SEWAGE TREATMENT PLANT

Sl. No.	Parameters	Parameters Limit (Standards for New STPs Design after notification date) *
1.	pH	6.5-9.0
2.	BOD (mg/l)	Not more than 10
3.	COD (mg/l)	Not more than 50
4.	TSS (mg/l)	Not more than 20
5.	NH_4-N (mg/l)	Not more than 5
6.	N-total (mg/l)	Not more than 10
7.	Fecal Coliform (MPN/100ml)	Less than 100

Note:

(i) These standards will be applicable for discharge in water resources as well as for land disposal. The standards for Fecal Coliform may not be applied for use of treated sewage in industrial purposes.

(ii) * Achievements of Standards for existing STPs within 05 years from the date of notification.

ANNEX - VIII

ODISHA

BY REGD POST

STATE POLLUTION CONTROL BOARD, ODISHA

(Department of Forest & Environment, Govt. of Odisha)
Paribesh Bhawan, A/118, Nilakanthanagar, Unit-VIII
Bhubaneswar – 751012

No. 2755 / Ind-II-NOC-5592 Date 28-02-14

OFFICE MEMORANDUM

In consideration of the application for obtaining Consent to Establish for **Darlipali Super Thermal Power Project of M/s. NTPC Ltd.**, the State Pollution Control Board has been pleased to convey its Consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 to set up of Thermal Power Plant of capacity 1600 MW (2x800 MW, stage-I), **At/Po- Darlipali** (Plot No. & Khata No. as mentioned in application form) in the district of **Sundargarh** with the following conditions.

GENERAL CONDITIONS,

1. This Consent to establish is valid for the raw materials, product, manufacturing process and capacity mentioned in the application form. This order is valid for five years, which means the proponent shall commence construction of the project within a period of five years from the date of issue of this order. If the proponent fails to do substantial physical progress of the project within five years then a renewal of this consent to establish shall be sought by the proponent.
2. Adequate effluent treatment facilities are to be provided such that the quality of sewage and trade effluent satisfies the standards as prescribed under Environment Protection Rule, 1986 or as prescribed by the Central Pollution Control Board and/or State Pollution Control Board or otherwise stipulated in the special conditions.
3. All emission from the industry as well as the ambient air quality and noise shall conform to the standards as laid down under Environment (Protection) Act, 1986 or as prescribed by Central Pollution Control Board/State Pollution Control Board or otherwise stipulated in the special conditions.
4. Appropriate method of disposal of solid waste is to be adopted to avoid environmental pollution.
5. The industry shall comply to the provisions of Environment Protection Act, 1986 and the rules made there under with their amendments from time to time such as the Hazardous Waste Management, Handling and Transboundary Movement Rules 2008 and amendment thereof, Hazardous Chemical Rules, /Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 etc. and amendments there under. The industry shall also comply to the provisions of Public Liability Insurance Act, 1991, if applicable.
6. The industry shall apply for grant of Consent to operate under section 25/26 of Water(Prevention & Control of Pollution)Act, 1974 & Air (Prevention & Control of Pollution)Act, 1981 at least 3 (three) months before the commercial production and obtain Consent to Operate from this Board.
7. This consent to establish is subject to statutory and other clearances from Govt. of Odisha and/or Govt. of India, as and when applicable.

SPECIAL CONDITIONS : -

1. The proponent shall obtain environmental clearance for the proposal as per EIA notification, 2006 and the construction activity for the proposal shall commence after obtaining environmental clearance.
2. The proponent shall carry out the construction activity as per the approved lay out map. Any deviation in approved layout map during construction activity shall be treated as violation of consent condition and appropriate action (including revocation of consent to establish) shall be taken as per law. If the proponent desires to change the approved plant layout map, they can submit a modified plant layout map surrendering the previous one before going for physical construction.
3. The unit shall not use 390 acres land ear-marked for green belt development for other purpose.
4. The industry shall set up its own fly ash brick manufacturing unit along with establishment of unit-I so that fly ash generated from the unit-I can be utilized for fly ash brick making and which will be used for civil construction of unit-II.
5. The industry has proposed to use 30% imported high GCV coal. They shall keep adequate space for installation of flue gas de-sulphurization unit in case substantial increase in GLC concentration of SO_2 is observed.
6. The industry shall construct ash pond over 400 acres of area as earmarked in the revised land use break-up. Under no circumstance land earmarked for ash pond shall be used for any other purpose. Consent to operate for power plant shall only be considered when ash pond will be ready for ash disposal
2. The unit shall suitably divert all the public roads passing through the proposed project.
3. The unit shall develop thick green belt with high boundary wall along the boundary of the project as human habitations are close to the proposed site.
4. The unit shall include rain water harvesting proposal during execution of the project.
5. The unit shall submit year wise along with percentage wise fly ash utilisation plan to the Board in the end of the year.
6. The unit shall be based on zero discharge concepts and in no case any effluents shall be discharge to any water body.
7. The unit shall obtain necessary clearances such as forest clearance, wild life clearance, clearance from water resources department etc. from the appropriate authorities as applicable.
8. The unit shall adopt adequate safety measures in construction of ash dyke and detail constructional feature shall be submitted to the Board within one month from the date of issue of consent to establish.
9. The height of each stack of power plant boiler shall not be less than 275 meters from the ground. The power plant shall have two stacks for flue gas emission.
10. The unit shall install ESP in the stack attached to power plant boiler such that particulate matter emission shall not exceed 50 mg/Nm3. They should make provision for one spare field during the design of ESP. If more than one field of ESP fails, the plant should trip automatically through an interlocking system.

11. The unit shall provide port hole and platform at suitable location with safe approach to conduct emission monitoring at the stack.

12. The unit shall provide dust extraction system at crusher house, boiler bunker to control dust emission. CHP shall be installed in a shed and coal carrying conveyor belts shall be covered.

13. Separate energy meter shall be installed for all the pollution control equipments and the records shall be maintained for verification of the Board from time to time.

14. Necessary preventive measures shall be taken during construction phase so that the ambient air quality including noise shall conform to National Ambient Air Quality standards and standards for noise in industrial area as per Annexure-I. The unit shall install adequate dust extraction as well as dust suppression system at all potential dust generating points to control fugitive dust emission and the ambient air quality inside the factory premises shall conform to the standard with reference to National Ambient Air Quality Standard prescribed by MoEF, Govt. of India dtd 16.11.2009 enclosed as Annexure – II.

15. The construction material which has potential to be air borne, shall be transported in covered trucks.

16. The roads inside the plant premises shall be black topped. Permanent high pressure water sprinkling system shall be installed for regular spraying of water on roads to minimize fugitive dust emission.

17. The unit shall take adequate measures for controlling of fugitive dust emission during transportation of fly ash for utilisation. Good housekeeping practices shall be followed to improve the work environment. All roads and shop floors shall be cleaned regularly.

18. At least 6 continuous ambient air quality monitoring stations around the industry shall be set up to monitor PM-10, PM-2.5, SO2, NOx, CO and other important parameters as given in as per Annexure – II above within at least to the distance in down wind direction and where maximum ground level concentration is anticipated. The exact location of the monitoring stations shall be finalized in consultation with the State Pollution Control Board. The proponent shall install continuous online ambient air quality monitoring and stack monitoring system with display facility at the gate. A detail proposal to this effect shall be submitted.

19. Pneumatic conveyor system shall be provided as dust collection system for ESP dust. Silos shall be provided for collection of bottom ash and fly ash. Conveyor belt shall be closed and bag filter shall be provided at transfer points of conveyor system to control fugitive emission.

20. Air pollution Control devices shall be maintained properly. Fabric bags and cages in bag house shall be checked regularly and replaced whenever required. Adequate availability of spares shall be ensured for immediate replacement.

21. All the wastewater generated shall be discharged to a common monitoring basin before it is reused in the plant for various process.

22. The Blow down shall meet the following standards before it is discharged to the common basin.

Boiler Blow Down :		
Suspended solids	-	100.0mg/l (max)
Oil & Grease	-	20.0 mg/l (max)
Copper (Total)	-	1.0 mg/l (max)
Iron (total)	-	1.0mg/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	-	0.2 mg/l (Max)

23. 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 stored in a common basin (i.e. guard pond) for utilization for plantation, dust suppression ash handling and green belt purpose inside the factory premises. Lining shall be provided in guard pond to prevent any seepage into ground to avoid ground water contamination. The proponent shall submit detail drawing with specification of ETP within 6 months.

24. 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 reduce the load on common monitoring basin.

25. The unit shall furnish details of the control measures at coal loading and unloading points.

26. The acidic water generated during boiler cleaning shall be properly neutralized so that the pH of cleaning water remains within the range of 6.0 – 9.0. After neutralization this water can be discharged to the common monitoring basin.

27. Oil catch pits shall be provided in oil handling area of power plant for collection of spillage

28. The unit shall provide treatment system such as Reverse osmosis plant to treat the waste water generated from cooling tower blow down and reuse the same in the process.

29. The storm water drains shall be maintained separately without being mixed up with the industrial effluent or sewage effluent. The domestic effluent from the industry as well as the colony shall be treated in proper sewage treatment plant to meet the prescribed BIS standard (SS – 30mg/l, BOD – 20mg/l) before being discharged or utilized for green belt development.

30. The industry shall adopt High Concentration Slurry Disposal (HCSD) method for ash disposal. A detail design of the ash disposal area, the dykes, run off and seepage collection system etc shall be made and submitted within 3 months from the date of issue of this consent to establish.

31. A comprehensive ash utilization plan shall be prepared within the frame work of Fly Ash Notification, 2009 and its amendment thereof. The plan should explore all possible means of utilization with realistic timelines and utilization options. The ash utilization plan submitted by the proponent is not adequate. A detailed ash utilization plan is to be submitted keeping in view of less ash at the time of consent to operate application.

32. The proponent shall take precautionary measures to prevent surface run off from ash disposal area during torrential rain. A detailed proposal to this effect is to be submitted within 3 months.

33. Rain water harvesting structure shall be developed inside the plant premises as per concept and practices made by CPCB and maximum efforts shall be made to reuse harvested rain water, with a definite plan and programme to reduce the drawal of fresh water from water bodies.

34. The unit shall explore the possibility of disposal of fly ash in abandoned mine pit for complete utilization of fly ash.

35. The unit shall submit details of hazardous chemicals and storage facility and risk assessment to the Board.

36. The industry shall comply with all the conditions stipulated under Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines in a time bound manner as envisaged there in.

37. A toe drain shall be provided around the ash mound. The seepage water collected in the toe drain shall be monitored every month with respect to pH, SS, O&G and fluoride and shall meet the following standards

pH-6.5 to 8.5
SS-100mg/l
O&G-20mg/l and
Flouride-2.0mg/l

and the monitoring report shall be submitted to the Board quarterly.

38. Regular monitoring of runoff water from the disposal area and excess ash water shall be carried out with respect to pH, SS, O&G and fluoride content and monitoring report shall be submitted to the Board every quarter.

39. Ash pond shall be lined with HDPE or any other suitable impermeable lining such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.

40. The Project Proponent shall carry out detail hydrogeological study of the ash pond site incorporating soil analysis, ground water quality(fluoride& heavy metals), surface water quality(fluoride & heavy metals) and drainage network of the area and the change in hydrological status shall be monitored annually.

41. Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (F, Cd, Hg, Cr, As, Pb) and records shall be maintained and submitted to the Board. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.

42. The entire upstream face of the dyke shall be provided with stone pitching or brick lining or precast tile lining to prevent erosion of the slope by wave action during heavy wind.

43. The entire area of the ash dyke shall be provided with fencing and unauthorized entry within this ash pond area shall be strictly prohibited. Security guards shall be posted for vigilance of the ash dyke area round the clock. This is very important as there are chances of sabotage. The entire dyke perimeter shall have accessible roads. The entire dyke area shall be provided with street lights or flood lights for inspection during night time. A site office shall be constructed with a full time engineer responsible for inspection and monitoring of the ash dyke.

44. The industry shall construct a Sewage Treatment Plant (STP) for treatment of wastewater to be generated from domestic source and the treated sewage shall be discharged to the common monitoring basin.

45. The unit shall explore the possibility to use chlorine di-oxide for treatment of water instead of chlorine gas.

46. Plantation activity shall be planned in such a way so that trees will have better growth by the time the unit starts operation.

47. The proponent shall deploy vehicles which conform to the latest BIS emission specification. The proponent shall also to give a detail proposal to control noise pollution during construction phase. The proponent shall prepare pollution prevention and environment management plan for construction phase and operation phase separately and should submit to the Board three months prior to commencement of construction and operation respectively.

48. The rising temperature during summer in the area is a major concern. The unit shall conduct a detailed study on contribution of thermal heat to atmosphere due to the proposed project and its impact on ambient temperature during different season. The study should also investigate the heat island effect due to the project.

49. The industry shall provide screen at the water intake system of Hirakud reservoir for protection of aquatic life.

50. The industry shall set up a full-fledged environment monitoring laboratory and an environment management cell with qualified personnel for monitoring of pollutants and effective remedial measures in case of necessity. Head of the environmental management cell shall report to the unit head.

51. The civil construction shall be carried out with the fly ash bricks. If the fly ash bricks are not available locally the civil construction may carried out with other bricks with prior intimation to the concerned Regional Office of SPC Board. A statement indicating use of fly ash bricks during construction period shall be submitted to the Board every year for record.

52. The land on which the unit is proposed to be established the power plant shall be converted to industrial use Kisam by the competent authority. The copy of said land conversion document shall be submitted to the Board along with consent to operate application.

53. A green belt of adequate width and density preferably with local species along the periphery of the power 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, in such a manner that, atleast plantation shall be taken up at least in 20% of the total green belt area and progressively achieve 100% in a span of five years.

54. No production activity shall commence prior to installation of the pollution control devices. In case, it is found that the plant is operating without installation of appropriate pollution control equipment(s) and without permission for trial operation from the Board, a direction of closure shall be issued u/s 31-A of Air (PCP) Act, 1981 and /or u/s 33-A of Water (PCP) Act, 1974 without any further notice in this regard.

55. The Board may impose further conditions or modify the conditions stipulated in this order during installation and / or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented and / or any information suppressed in the application form.

Encl: Approved layout Map & Annexures

MEMBER SECRETARY

To

Shri S. K. Reddy, General Manager,
Derlipali Super Thermal Power Project (DSTPP) of
M/s. NTPC Ltd.,
3rd & 4th Floor, Amba Tower Hospital Road,
Sundargarh- 770001.

Memo No. _____ /Dt. _____ /

Copy forwarded to:

1. District Magistrate & Collector, Sundargarh.
2. District Industries Centre, Sundargarh.
3. Director, Factories & Boiler, Bhubaneswar
4. Regional Officer, SPC Board, Rourkela.
5. Sr. Env. Engineer (Consent), SPC Board, Bhubaneswar.
6. DFO, Sundargarh.
7. Hazardous Waste Management Cell, SPC Board, Bhubaneswar.
8. Copy to Guard file.

SR. ENV. ENGINEER (N)

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

CSMC/TFC/CR-13/2013-14

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

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

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

ACM(PES) 17/10/2013

Sir,

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

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

* * *

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

The site clearance is issued subject to the following conditions:

1. The replacing of highly hazardous chlorine with available less hazardous alternative chemicals like chlorine dioxide, sodium hypo chlorite shall be considered.

2. The mobile hydrogen cylinder bank with manifold system shall be adopted in place of loose Hydrogen Cylinders

3. The safety check shall be prepared in storing, handling and usage of Hydrazine and its holding capacity shall be limited to a minimum required quantity

4. The exclusive safety, health and environment (SHE) department shall be formed under the direct control & supervision of the occupier. This department shall be supported by the senior level qualified and competent executives with adequate field staff.

5. The effective online monitoring system shall be adopted to ensure the safe and healthy work environment with special trust to fugitive emition, it radiation, noise level etc.

6. No building of structure shall be constructed with obtaining a prior approval of plans by Director, Department of Factories, Boilers, Industrial Safety and Health.

7. The pre and periodical medical examination shall be carried out to all the category of employees including contract and casual. The medical surveillance shall be carried out by creating a base line health data and shall have the provision for up-dating the same and continuous basis.

v. The mitigation measures submitted in the [illegible] as suggested by committee shall be incorporated in the on-site emergency plan. The same shall be submitted for scrutiny and approval.

vi. The provisions of rule 34 to 251 of Building and Other Construction Workers (Regulation of Employment and condition of service) (Karnataka) Rules 2006 shall be complied to ensure occupational safety and health of the construction workers involved project. The compliance shall be furnished regularly to jurisdiction officers of our department and to the Director of Factories, Boilers, Industrial Safety and Health.

Suggestions:

1. The industry shall adopt the rain - harvesting system to harvest atleast 30% of the [illegible] water.
2. The industry shall adopt solar energy system at least catering to street lighting and in other suitable areas like water heating in the canteen, etc.

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

Your's Faithfully,

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

True copy attached

Annexure- .....

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

CSMS/TFC/CR—13/2013-14

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

Phone No. 080-26531200
Fax No. 080-26531202

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

Sir,

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

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

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

The Site clearance is issued subject to the following conditions:

1. The replacing of highly hazardous chlorine with available less hazardous alternative chemicals like chlorine dioxide, sodium hypochlorite shall be considered.

2. The mobile hydrogen cylinder bank with manifold system shall be adopted in place of loose hydrogen cylinders.

3. The Safety check shall be prepared in storing, handling and usage of hydrazine and its handling capacity shall be limited to a minimum required quantity.

4. The exclusive safety health and environment (SHE) department shall be formed under the direct control and supervision of the occupy. This department shall be supported by he senior level qualified and competent executive with adequate field staff.

5. The effective online monitoring system shall be adopted to ensure the safe and healthy work environment with special trust to fugitive emission, its radiation noise level etc. No building

of structure shall be constructed with obtaining a prior approval of plans by Director, Department of Factories, Boilers, Industrial Safety & Health.

6. No building of structure shall be constructed with obtaining a prior approval of plans by Director, Deptt of factories, boilers, industrial safety and health.

7. The pre and periodical medical examination shall be carried out to all the category of employees including contract and casual. The medical surveillance shall be carried out by creating a base line health data and shall have the provision for updating the same and continuous basis.

8. The mitigation measures as submitted in the presentation and as suggested by committee shall be incorporated in the on site emergency plan. The same shall be submitted for scrutiny and approval.

9. The provision of rule no. 251 of Building and Other Construction Workers (Regulation for employment and condition of service) (Karnataka) Rules 2006 shall be complied to ensure occupational safety and health of construction workers involved in the project. The compliance shall be regularly to jurisdiction officer of our department and to the director of factories, boilers, industrial safety and health.

SUGGESTIONS:

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

Yours faithfully

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

ANNEX - IX

Annexure - C

ODISHA

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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. 480
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.9601/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- Deepsikha, Dist-Angul-759 147

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	583	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 person or need kept fallow.

11. The adoption of these would avoid soil becoming sick or stale, the industry may ensure this in consultation with the Agriculture Department.

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 these persons with their contact telephone numbers shall be intimated to the concerned Regional Office and Head Office of the Board and in case of any change in the same it shall be intimated 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/Nm^3 for all the ESP stacks and take steps to achieve an emission standard of 50 mg/Nm^3 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 economizer 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

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 availuble 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 Charter 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 separate 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.

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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, Cess (Head Office)
iv) Consent Register
v) Sr. Env. Scientist (L)

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

P.T.O

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.