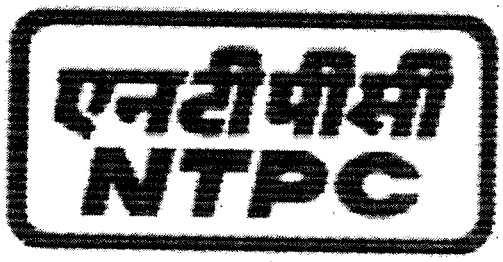
Petition No.....



A Maharatna Company

RAMAGUNDAM SUPER THERMAL POWER STATION
STAGE-I & II

(3X200 +3X500 MW)

PETITION FOR APPROVAL OF TARIFF FOR THE PERIOD 01.04.2019 TO 31.03.2024

BEFORE THE HON'BLE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO.....

IN THE MATTER OF : Petition Under Section 62 and 79 (1) (a) of the Electricity Act, 2003 read with Chapter-V of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Chapter-3, Regulation-9 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for approval of tariff of Ramagundam Super Thermal Power Station Stage- I & II (2100 MW) **for the period from 01.04.2019 to 31.03.2024**.

INDEX

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 Ramagundam Super Thermal Power Station Stage- I & II (2100 MW) **for the period from 01.04.2019 to 31.03.2024.**

AND
IN THE MATTER OF

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

Respondents

1. 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 CESC (Chamundeshwari Electricity Supply Corp. Ltd.)
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 Electricity department
Govt. of Goa
Vidyut Bhavan ,3rd Floor,
Panaji , Goa -403001

The Petitioner humbly states that:

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

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

3) The Petitioner is having power stations/ projects at different regions and places in the country. Ramagundam Super Thermal Power Station Stage- I & II (3x200 +3x500 (hereinafter referred to as RSTPS-I & II) is one such station located in the State of Telangana .The power generated from RSTPS-I & 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 RSTPS-I & II for the period from 01.04.2019 to 31.03.2024 as per the Tariff Regulations 2019.

6) The tariff of the RSTPS-I & II for the tariff period 1.4.2014 to 31.3.2019 was determined by the Hon'ble Commission vide its order dated 24.01.2017 in Petition No. 292/GT/2014 in accordance with the CERC (Terms & Conditions of Tariff) Regulations 2014. The Petitioner thereafter had filed an Appeal (being No. 96 of 2017) in Appellate Tribunal of Electricity on certain aspects of the order dated 24.01.2017 . The appeal is under consideration of the Hon'ble Appellate Tribunal of Electricity. The petitioner vide affidavit dated 14.01.20 had filed a separate true up petition for the period 01.04.2014 to 31.03.2019 for revision of tariff in line with the applicable provisions of Tariff Regulations 2014.

7) It is submitted that Hon'ble Commission vide order dated 24.01.2017 in Petition no .292/GT/2014 has allowed a capital cost of Rs 2305.69 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. 2269.04 Crs based on the actual expenditure after truing up exercise for the period 2014-19. Accordingly, the Petitioner has adjusted an amount of Rs. (-) 36.65 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 2269.04 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 based on the Regulation 19 and Regulation 26 of the Tariff Regulations, 2019.

9) The Petitioner further respectfully submits that as per Regulation 35(1)(6) of the Tariff Regulations 2019, the water charges, security expenses and capital spares consumed for thermal generating stations are to be allowed separately. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2019-24 have been furnished below. 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 actual for the relevant year at the time of truing up and the same shall be subject to retrospective adjustment.

Description	**Remarks**
Type of Plant	Coal Based
Type of cooling water system	IDCT
Consumption of Water	Water for the Station is drawn from Yellampally Project. Tentative consumption for RSTPS-I & II : 2.007 TMC / year In addition, Payment towards power charges are also paid for lifting water as per Notification dated 27.06.2015(copy enclosed at Annex-I)
Rate of Water charges	Rs 7.16 Cr/TMC (Govt. of Telangana has also accorded permission for enhancement of the rate @ 10 % once in two Financial year from the date of issue of Government order.
Total Water Charges (including power charges)	Rs 1863.63 Cr for 2019-20 (Yearly details at Form 3A

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

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

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

32. The Petitioner is granted liberty to approach the Commission at the time of revision of tariff of the generating stations based on 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."

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

13) It is submitted that the Petitioner has already paid the requisite filing fee vide UTR No. CMS1106438370 on 22.04.19 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 recover 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) It is submitted the Petitioner has served the copy of the Petition on to the Respondents mentioned herein above and has posted the Petition on the company website i.e. www.ntpc.co.in

16) It is submitted that the petitioner is filing this tariff petition subject to the outcome of its various appeals/ petitions pending before different courts. Besides, the petitions filed by NTPC for determination of capital base as on 31.3.2014 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, therefore, prays that the Hon'ble Commission may be pleased to:

i) Approve tariff of Ramagundam Super Thermal Power Station Stage- I & II (2100 MW) 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: 28.01.2020

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 Ramagundam Super Thermal Power Station Stage- I & II (2100 MW) **for the period from 01.04.2019 to 31.03.2024**.

AND
IN THE MATTER OF

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

Respondents **1.** 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.

NOTARY R.V. SINGH Advocate Regn.No.2282 Commission Expire on 24-10-2022 Area-Delhi GOVT. OF INDIA

10

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 28th January 2020.

Deponent

NOTARY R. SINGH Regd. No. 2282 Commission Expire on 24-10-2022 Distt. Delhi GOVT. OF INDIA

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

Notary Public, DELHI

28 JAN 2020

TARIFF FILING FORMS (THERMAL)

FOR DETERMINATION OF TARIFF

FOR

Ramagundam Super Thermal power Station Stage-I & 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	✓
FORM- 4	Details of Foreign loans	NA
FORM- 4A	Details of Foreign Equity	NA
FORM-5	Abstract of Admitted Capital Cost for the existing Projects	✓
FORM-5A**	Abstract of Claimed Capital Cost for the existing Projects	✓
FORM- 6	Financial Package upto COD	NA
FORM- 7	Details of Project Specific Loans	NA
FORM- 8	Details of Allocation of corporate loans to various projects	✓
FORM-9A**	Summary of Statement of Additional Capitalisation claimed during the period	✓
FORM-9 ##	Statement of Additional Capitalisation after COD	✓
FORM- 10	Financing of Additional Capitalisation	✓
FORM- 11	Calculation of Depreciation on original project cost	NA
FORM- 12	Statement of Depreciation	✓
FORM- 13	Calculation of Weighted Average Rate of Interest on Actual Loans	✓
FORM- 14	Draw Down Schedule for Calculation of IDC & Financing Charges	NA
FORM- 15	Details of Fuel for Computation of Energy Charges	✓
FORM- 15A	Details of 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	NA

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

List of supporting documents for tariff filing for Thermal Stations

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

* Shall be provided at the time of true up

PART-I
FORM- 1

Summary of Tariff

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Ramagundam Super Thermal power Station Stage-I & II**
Place (Region/District/State):	**Southern Region/ Peddapalli/ Telangana**

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	19.98	300.57	651.15	441.90	65.70	9,450.00
1.2	Interest on Loan	Rs Lakh	97.89	84.43	87.00	70.04	53.08	270.29
1.3	Return on Equity	Rs Lakh	22,423.65	12,802.37	12,843.13	12,870.80	12,874.91	13,194.73
1.4	Interest on Working Capital	Rs Lakh	13,617.60	13,934.98	14,073.38	14,165.34	14,284.37	14,547.58
1.5	O&M Expenses	Rs Lakh	53,587.63	58374.51	60970.10	62879.37	65390.45	67758.26
1.6	Special Allowance (If applicable)	Rs Lakh	0.00	19950.00	19950.00	19950.00	19950.00	19950.00
1.7	Compensation Allowance (If applicable – relevant for column 4 only)	Rs. Lakh	0.00					
	Total	Rs Lakh	**89746.75**	**105446.86**	**108574.76**	**110377.45**	**112618.51**	**125170.87**
2.1	Landed Fuel Cost (coal/gas/RLNG/ liquid)	Rs/Ton	3651.31					
	(%) of Fuel Quantity	(%)	100					
2.2	Landed Fuel Cost Imported Coal		NA					
	(%) of Fuel Quantity							
2.3	Landed Fuel Cost (coal/gas /RLNG/liquid) other than FSA	Rs/Ton	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	0.019					
	Energy Charge Rate ex-bus (Paise/kWh)	Rs/Unit	2.612					

(Petitioner)

PART-I
FORM- 1(I)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Ramagundam Super Thermal power Station Stage-I & 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	2,26,904.35	2,27,515.35	2,28,351.35	2,28,497.35	2,28,497.35
2	Add: Addition during the year/period	611.00	836.00	146.00	-	21,000.00
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	2,27,515.35	2,28,351.35	2,28,497.35	2,28,497.35	2,49,497.35
7	**Average Capital Cost**	**2,27,209.85**	**2,27,933.35**	**2,28,424.35**	**2,28,497.35**	**2,38,997.35**

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	226904.35	227515.35	228351.35	228497.35	228497.35
2	Add: Addition during the year / period	611.00	836.00	146.00	0.00	0.00
3	Less: De-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00
4	Less: Reversal during the year / period	0.00	0.00	0.00	0.00	0.00
5	Add: Discharges during the year / period	0.00	0.00	0.00	0.00	0.00
6	Closing Capital Cost	227515.35	228351.35	228497.35	228497.35	228497.35
7	**Average Capital Cost**	**227209.85**	**227933.35**	**228424.35**	**228497.35**	**228497.35**

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	0.00	0.00	0.00
2	Add: Addition during the year / period	0.00	0.00	0.00	0.00	21000.00
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	0.00	0.00	0.00	21000.00
7	**Average Capital Cost**	**0.00**	**0.00**	**0.00**	**0.00**	**10500.00**

(Petitioner)

PART-I

FORM- 1(IIA)

Name of the Petitioner:	**NTPC Limited**
Name of the Generating Station:	**Ramagundam Super Thermal power Station Stage-I & 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)	1,13,485.23	1,13,668.53	1,13,919.33	1,13,963.13	113963.13
2	Less: Adjustment in Opening Equity	45,413.93				
3	Adjustment during the year		45413.93	45413.93	45413.93	45413.93
4	Net Opening Equity (Normal)	68,071.31	68,254.61	68,505.41	68,549.21	68,549.21
5	Add: Increase in equity due to addition during the year / period	183.30	250.80	43.80	0.00	0.00
7	Less: Decrease due to De-capitalisation during the year / period	0.00	0.00	0.00	0.00	0.00
8	Less: Decrease due to reversal during the year / period	0.00	0.00	0.00	0.00	0.00
9	Add: Increase due to discharges during the year / period	0.00	0.00	0.00	0.00	0.00
10	Net closing Equity (Normal)	68,254.61	68,505.41	68,549.21	68,549.21	68,549.21
11	Average Equity (Normal)	68,162.96	68,380.01	68,527.31	68,549.21	68,549.21
12	Rate of ROE (%)	18.782	18.782	18.782	18.782	18.782
13	Total ROE	**12,802.37**	**12,843.13**	**12,870.80**	**12,874.91**	**12,874.91**

(Petitioner)

PART-I

FORM- 1(IIB)

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

Statement showing Return on Equity at Wtd avg ROI

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	0.00	0.00	0.00
2	Less: Adjustment in Opening Equity	0.00	0.00	0.00	0.00	0.00
3	Adjustment during the year	0.00	0.00	0.00	0.00	0.00
4	Net Opening Equity (Normal)	0.00	0.00	0.00	0.00	0.00
5	Add: Increase in equity due to addition during the year / period	0.00	0.00	0.00	0.00	6300.00
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	0.00	0.00	0.00	6300.00
11	Average Equity (Normal)	0.00	0.00	0.00	0.00	3150.00
12	Rate of ROE (%)	10.143	10.145	10.147	10.150	10.153
13	Total ROE	**0.00**	**0.00**	**0.00**	**0.00**	**319.82**

(Petitioner)

Plant Characteristics

Name of the Petitioner : **NTPC Ltd** **PART-I**

Name of the Generating Station : **Ramagundam STPS -I & II** **FORM-2**

Unit(s)/Block(s)/Parameters	Unit-I	Unit-II	Unit-III	Unit-IV	Unit-V	Unit-VI
Installed Capacity (MW)	200	200	200	500	500	500
Schedule COD as per Investment Approval						
Actual COD /Date of Taken Over (as applicable)	01-Mar-84	01-Nov-84	01-May-85	01-Nov-88	01-Sep-89	01-Apr-91
Pit Head or Non Pit Head	Pit Head					
Name of the Boiler Manufacture	ANSALDO -Italy			BHEL		
Name of Turbine Generator Manufacture	ANSALDO -Italy			BHEL		
Main Steams Pressure at Turbine inlet (kg/Cm²) abs1.	Not Applicable					
Main Steam Temperature at Turbine inlet (°C) 1						
Reheat Steam Pressure at Turbine inlet (kg/Cm²) 1						
Reheat Steam Temperature at Turbine inlet (°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 /**Rated** condition (MW)²						
Unit Gross electrical output under VWO condition (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 (°C)						
Back Pressure						
Steam flow at super heater outlet under BMCR condition (tons/hr)						
Steam Pressure at super heater outlet under BMCR condition) (kg/Cm²)						
Steam Temperature at super heater outlet under BMCR condition (°C)						
Steam Temperature at Reheater outlet at BMCR condition (°C)						
Design / Guaranteed Boiler Efficiency (%)⁴						
Design Fuel with and **without Blending** of domestic/imported coal						
Type of Cooling Tower	Induced Draft Cooling Towers			Induced Draft splash type, Counter flow		
Type of cooling system⁵	Closed			Closed		
Type of Boiler Feed Pump⁶	Motor driven (MDBFP)			2 Nos Turbine driven (TDBFP) and 1 No MDBFP		
Fuel Details⁷						
-Primary Fuel	Coal			Coal		
-Secondary Fuel	HSD / HFO			HFO		
-Alternate Fuels	-			-		
Special Features/Site Specific Features⁸	Merry go round system					
Special Technological Features⁹						
Environmental Regulation related features¹⁰	ESP, FGD is under implementation					
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:	**Ramagundam Super Thermal power Station Stage-I & 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 $$	%	15.50	15.50	15.50	15.50	15.50	15.50
Base Rate of Return on Equity on Add. Capitalization* $$	%	-	8.371	8.372	8.374	8.376	8.379
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	%	6.68	7.04	7.04	7.04	7.04	7.04
Gross Station Heat Rate	kCal/kWh	2396.43	2401.43	2401.43	2401.43	2401.43	2401.43
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 WC	in Months						
Liquid Fuel Stock for WC	in Months						
O&M Expenses	Rs lakh/MW	24.630476	25.495714	26.391429	27.317143	28.281429	29.268571
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	750000					
SBI 1 Year MCLR plus 350 basis point3	%	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 beyond original scope and excluding Change in Law

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

** Storage Cpacity for Ramagundam -I & II and III combined together

Petitioner

Part-I
FORM-3A
ADDITIONAL FORM

Calculation of O&M Expenses

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

Amount in Rs. Lakhs

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	**O&M expenses under Reg.35(1)**					
1a	Normative	53541.00	55422.00	57366.00	59391.00	61464.00
2	**O&M expenses under Reg.35(6)**					
2a	Water Charges ^^ **	1863.63	2049.99	2049.99	2254.99	2254.99
2b	Security expenses **	2969.88	3498.11	3463.38	3744.46	4039.27
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	**58374.51**	**60970.10**	**62879.37**	**65390.45**	**67758.26**

** Subject to true up

^^ Notification of water charges rate is attachd at Annex-I

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

Petitioner

PART-I
FORM-3B
Additional Form

Computation of Special Allowance

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

Rate of Special allowance @lakh/MW/year	**9.5**

(Rs. Lakh)

Unit No.	Capacity (MW)	Date of COD	Year of completion of useful life of 25 yrs.		Special Allowance as per Clause 28				
				Existing 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	200	1-Mar-84	2008-09	1699.47	1900.00	1900.00	1900.00	1900.00	1900.00
2	200	1-Nov-84	2009-10	1699.47	1900.00	1900.00	1900.00	1900.00	1900.00
3	200	1-May-85	2010-11	1699.47	1900.00	1900.00	1900.00	1900.00	1900.00
4	500	1-Nov-88	2013-14	4797.13	4750.00	4750.00	4750.00	4750.00	4750.00
5	500	1-Sep-89	2014-15	4797.13	4750.00	4750.00	4750.00	4750.00	4750.00
6	500	1-Apr-91	2016-17	4797.13	4750.00	4750.00	4750.00	4750.00	4750.00
Year wise Total for the Station				**19489.82**	**19950.00**	**19950.00**	**19950.00**	**19950.00**	**19950.00**

Petitioner

PART 1
FORM- 5

Abstract of Admitted Capital Cost for the existing Projects

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

Last date of order of Commission for the project	**Date (DD-MM-YYYY)**	24-01-2017
Reference of petition no. in which the above order was passed	**Petition no.**	Pet No 292/GT/2014
Following details as admitted on 31.03.19 in the above order by the Commission:		
Capital cost as on 01.04.19	**(Rs. in lakh)**	230569.84
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)		78.8
Gross Normative Debt		115984.97
Cumulative Repayment		115984.97
Net Normative Debt		0
Normative Equity		114584.87
Cumulative Depreciation		205135.71
Freehold land		2641.27

(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 :	**Ramagundam Super Thermal power Station Stage-I & 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 24.01.17	**Rs. Lakhs**	230569.84
Adjustment as per Para (7) of this petition		-3665.49
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)**	226904.35
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)		141.38
Gross Normative Debt		113419.12
Cumulative Repayment		112474.07
Net Normative Debt		945.05
Normative Equity		113485.23
Cumulative Depreciation		201811.15
Freehold land		2641.27

(Petitioner)

Form 8

TRANCHE NO

BP NO 5050000261 **T00001** **D00008**

Unsecured Loan From SBI-VII		
Source of Loan :	**SBI-VII**	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	11.03.2013	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :		
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	4 Years	
Moratorium effective from :	08.07.2011	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	16 Half Yearly Instalments	
Repayment Type :	AVG	
First Repayment Date :	30.09.2015	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	KOLDAM	35,00,00,000
	SOLAPUR	30,00,00,000
	VINDHYACHAL-V	38,00,00,000
	TAPOVAN	18,00,00,000
	BARH-I	57,00,00,000
	MOUDA-II	26,00,00,000
	RIHAND III	32,00,00,000
	KUDGI-I	38,00,00,000
	DADRI SOLAR PV	19,00,00,000
	A&N SOLAR PV	20,00,00,000
	LARA-I	20,00,00,000
	BONGAIGAON	34,00,00,000
	FARAKKA-III	27,00,00,000
	SIMHADRI-II	20,00,00,000
	SINGRAULI-R&M	10,00,00,000
	TTPS-R&M	15,00,00,000
	KAWAS-R&M	15,00,00,000
	GANDHAR-R&M	8,00,00,000
	TSTPP-R&M	10,00,00,000
	RAMAGUNDAM-R&M	8,00,00,000
	BADARPUR-R&M	20,00,00,000
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 5050000261	**T00001**	**D00012**
	Unsecured Loan From SBI-VII	
Source of Loan :	**SBI-VII**	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	2,50,00,00,000	
Date of Drawl	22.07.2013	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :		
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	4 Years	
Moratorium effective from :	08.07.2011	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	16 Half Yearly Instalments	
Repayment Type :	AVG	
First Repayment Date :	30.09.2015	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	BARH-II	67,00,00,000
	FARAKKA-III	35,00,00,000
	SIMHADRI-II	20,00,00,000
	RAMAGUNDAM SOLAR	10,00,00,000
	FGUTPS R&M	14,00,00,000
	VSTPS R&M	28,00,00,000
	RAMAGUNDAM-R&M	18,00,00,000
	KORBA-R&M	17,00,00,000
	KAWAS-R&M	17,00,00,000
	BADARPUR-R&M	14,00,00,000
	TSTPP-R&M	10,00,00,000
Total Allocated Amount		**2,50,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050000261 **T00001** **D00016**

Unsecured Loan From SBI-VII		
Source of Loan :	**SBI-VII**	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	01.02.2014	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :		
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	4 Years	
Moratorium effective from :	08.07.2011	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	16 Half Yearly Instalments	
Repayment Type :	AVG	
First Repayment Date :	30.09.2015	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	MOUDA-I	50,00,00,000
	VINDHYACHAL-IV	50,00,00,000
	RIHAND-III	65,00,00,000
	MOUDA-II	1,80,00,00,000
	BARH-II	25,00,00,000
	SINGRAULI-R&M	30,00,00,000
	RAMAGUNDAM-R&M	15,00,00,000
	KORBA-R&M	20,00,00,000
	VINDHYACHAL-V	35,00,00,000
	KAWAS-R&M	20,00,00,000
	BADARPUR-R&M	10,00,00,000
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 5050000442 **T00001** D0001

Unsecured Loan From SBI-VIII		
Source of Loan :	SBI-VIII	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :		
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	6 Years	
Moratorium effective from :	21.01.2015	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	31.01.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	

Project Code	Project Name	Amount
	BARH-I	1,00,00,00,000
	FARAKKA R&M	25,00,00,000
	TSTPP R&M	40,00,00,000
	SINGRAULI R&M	40,00,00,000
	RAMAGUNDAM R&M	50,00,00,000
	KAWAS R&M	60,00,00,000
	KORBA R&M	60,00,00,000
	GANDHAR R&M	1,25,00,00,000
Total Allocated Amount		**5,00,00,00,000.00**

BP NO 5050000442	TRANCHE NO T00001	D00011
	Unsecured Loan From SBI-VIII	
Source of Loan :	**SBI-VIII**	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	3,00,00,00,000	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	6 Years	
Moratorium effective from :	30.10.2015	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	31.01.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	**Project Name**	**Amount**
	BARH-I	31,00,00,000
	BONGAIGOAN	30,00,00,000
	DARLIPALLI	16,00,00,000
	GADARWARA	72,00,00,000
	KHARGONE	5,00,00,000
	LARA-I	33,00,00,000
	MOUDA-II	26,00,00,000
	NORTH KARANPURA	8,00,00,000
	TANDA-II	15,00,00,000
	TAPOVAN VISHNUGARH	21,00,00,000
	UNCHAHAR-IV	7,00,00,000
	PAKRI BARWADIH	4,00,00,000
	CHATTI BARIATU	9,00,00,000
	SIMHADRI-II	12,00,00,000
	RAMAGUNDAM R&M	11,00,00,000
Total Allocated Amount		**3,00,00,00,000**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050000442 **T00001** **D00018**

Unsecured Loan From SBI-VIII		
Source of Loan :	**SBI-VIII**	
Currency :	INR	
Amount of Loan :	1,00,00,00,00,000	
Total Drawn amount :	1,50,00,00,000	
Date of Drawl	21.04.2016	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	6 Years	
Moratorium effective from :	21.04.2016	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	31.01.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	**Project Name**	**Amount**
	BONGAIGAON	70,00,00,000
	UNCHAHAR-IV	5,00,00,000
	RAMAGUNDAM R&M	15,00,00,000
	TSTPS R&M	21,00,00,000
	GANDHAR R&M	8,00,00,000
	KORBA R&M	6,00,00,000
	DADRI GAS R&M	10,00,00,000
	UNCHAHAR R&M	5,00,00,000
	BADARPUR R&M	5,00,00,000
	KAHALGAON R&M	5,00,00,000
Total Allocated Amount		**1,50,00,00,000**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050000661 **T00001** **D00004**

Unsecured Loan From SBI-XI		
Source of Loan :	**SBI-XI**	
Currency :	INR	
Amount of Loan :	50,00,00,00,000	
Total Drawn amount :	8,00,00,00,000	
Date of Drawal:	22.11.2018	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.35%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	22.11.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	01.10.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	

Project Code	**Project Name**	**Amount**
	BARH-I	40,00,00,000
	TAPOVAN VISHNUGARH	11,00,00,000
	BONGAIGAON	11,00,00,000
	SOLAPUR	20,00,00,000
	LARA-I	50,00,00,000
	GADARWARA	55,00,00,000
	NORTH KARANPURA	36,00,00,000
	DARLIPALLI	40,00,00,000
	TANDA-II	10,00,00,000
	KHARGONE	75,00,00,000
	TELANGANA	75,00,00,000
	TALAIPALI COAL MINE	7,00,00,000
	RAMAGUNDAM I & II R&M	36,00,00,000
	VINDHYACHAL R&M	14,00,00,000
	FARAKKA R&M	10,00,00,000
	KAHALGAON R&M	10,00,00,000
	KHARGONE	2,00,00,00,000
	TELANGANA	1,00,00,00,000
Total Allocated Amount		**8,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050000661 **T00001** **D00005**

Unsecured Loan From SBI-XI		
Source of Loan :	**SBI-XI**	
Currency :	INR	
Amount of Loan :	50,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawal:	11.12.2018	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.35%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	11.12.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	01.10.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	

Project Code	**Project Name**	**Amount**
	BARH-I	6,00,00,000
	TAPOVAN VISHNUGARH	7,00,00,000
	SOLAPUR	12,00,00,000
	LARA-I	40,00,00,000
	GADARWARA	75,00,00,000
	NORTH KARANPURA	10,00,00,000
	DARLIPALLI	60,00,00,000
	TANDA-II	30,00,00,000
	KHARGONE	1,00,00,00,000
	TELANGANA	1,20,00,00,000
	SINGRAULI R&M	20,00,00,000
	RAMAGUNDAM R&M	20,00,00,000
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 5050000531 **T00001** **D0009**

Unsecured Loan From SBI-IX		
Source of Loan :	**SBI-IX**	
Currency :	INR	
Amount of Loan :	30,00,00,00,000	
Total Drawn amount :	2,00,00,00,000	
Date of Drawal:	27.06.2018	
Interest Type :	Floating	
Fixed Interest Rate :	----------	
Base Rate, If Floating Interest	8.25%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	Monthly	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	27.06.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Installments	
Repayment Type :	AVG	
First Repayment Date :	31.03.2021	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	**Project Name**	**Amount**
	BARH-I	25,00,00,000
	TANDA II	30,00,00,000
	TELANGANA	30,00,00,000
	RAMAGUNDAM R&M	25,00,00,000
	TALCHER STPP R&M	40,00,00,000
	KAHALGAON R&M	20,00,00,000
	PAKRI BARWADIH CMB	30,00,00,000
Total Allocated Amount		**2,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050000571 **T00001** **D00003**

Unsecured Loan From Punjab National Bank-III		
Source of Loan :	**Punjab National Bank-III**	
Currency :	INR	
Amount of Loan :	20,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	13.08.2018	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.30%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt. Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	13.08.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	01.02.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	BARH-I	30,00,00,000.00
	SOLAPUR	20,00,00,000.00
	TANDA-II	20,00,00,000.00
	TALLAIPALLI	50,00,00,000.00
	SINGRAULI R&M	80,00,00,000.00
	FARAKKA R&M	80,00,00,000.00
	RIHAND R&M	50,00,00,000.00
	DADRI GAS R&M	40,00,00,000.00
	KORBA R&M	40,00,00,000.00
	RAMAGUNDAM R&M	40,00,00,000.00
	VINDHAYACHAL R&M	30,00,00,000.00
	UNCHAHAR R&M	20,00,00,000.00
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 5050000571 **T00001** **D00004**

Unsecured Loan From Punjab National Bank-III		
Source of Loan :	**Punjab National Bank-III**	
Currency :	INR	
Amount of Loan :	20,00,00,00,000	
Total Drawn amount :	5,00,00,00,000	
Date of Drawl	21.08.2018	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.30%	
Margin, If Floating Interest :	0.00%	
Are there any Caps/ Floor :	Y/N	
Frequency of Intt: Payment	MONTHLY	
If Above is yes, specify Caps/ Floor :		
Moratorium Period :	3 Years	
Moratorium effective from :	21.08.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	01.02.2022	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	SINGRAULI R&M	1,00,00,00,000.00
	KORBA R&M	1,00,00,00,000.00
	RAMAGUNDAM R&M	1,00,00,00,000.00
	VINDHYACHAL R&M	1,00,00,00,000.00
	TANDA R&M	1,00,00,00,000.00
Total Allocated Amount		**5,00,00,00,000.00**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

BP NO 5050000641 **TRANCHE NO** **T00001** **D0001**

Unsecured Loan From HDFC Bank Ltd. VI		
Source of Loan :	**HDFC Bank Ltd. VI**	
Currency :	INR	
Amount of Loan :	15,00,00,00,000	
Total Drawn amount :	2,70,00,00,000	
Date of drawl	26.09.2018	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.45%	
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 :	6 Years	
Moratorium effective from :	26.09.2018	
Repayment Period (Inc Moratorium) :	15 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	26.09.2025	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	
Project Code	Project Name	Amount
	NORTH KARANPURA	70,00,00,000
	SINGRAULI	1,00,00,00,000
	RAMAGUNDAM	1,00,00,00,000
Total Allocated Amount		**2,70,00,00,000**

Statement Giving Details of Project Financed through a Combination of loan

Form 8

TRANCHE NO

BP NO 5050000521 **T00001** **D00004**

Unsecured Loan From HDFC Bank Ltd.-IV		
Source of Loan :	**HDFC Bank Ltd.-IV**	
Currency :	INR	
Amount of Loan :	20,00,00,00,000	
Total Drawn amount :	12,45,00,00,000	
Date of drawl	29.06.2018	
Interest Type :	Floating	
Fixed Interest Rate :		
Base Rate, If Floating Interest	8.45%	
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 :	3 Years	
Moratorium effective from :	29.06.2018	
Repayment Period (Inc Moratorium) :	12 Years	
Repayment Frequency :	9 Yearly Instalment	
Repayment Type :	AVG	
First Repayment Date :	17.04.2021	
Base Exchange Rate :	RUPEE	
Date of Base Exchange Rate :	N.A.	

Project Code	Project Name	Amount
	KORBA R&M	90,00,00,000
	RAMAGUNDAM R&M	2,20,00,00,000
	UNCHAHAR R&M	70,00,00,000
	RIHAND R&M	90,00,00,000
	KAWAS R&M	1,80,00,00,000
	AURAIYA R&M	1,80,00,00,000
	TSTPP R&M	90,00,00,000
	GANDHAR R&M	1,85,00,00,000
	NCTPP R&M	30,00,00,000
	KAHALGAON R&M	30,00,00,000
	ANTA R&M	80,00,00,000
Total Allocated Amount		**12,45,00,00,000**

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	**Ramagundam Super Thermal power Station Stage-I & II**
COD	**01-04-1991**
For Financial Year	**2019-24 (Summary)**

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
		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	Fire detection and protection system	611.00	67.00				Please refer Form -9 of respective year		
2	Medium Velocity Water (MVW) system for CHP		283.00						
3	Replacement of Halon system with inert gas system		486.00	146.00					
	Total (A)	**611.00**	**836.00**	**146.00**	**-**				
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**								
4	Ash dyke buttressing/ raising and other related works					21,000.00	Please refer Form -9 of respective year		
	Total (B)	**-**	**-**	**-**	**-**	**21,000.00**			
Total Add. Cap. Claimed (A+B)		**611.00**	**836.00**	**146.00**	**-**	**21,000.00**			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Ramagundam Super Thermal power Station Stage-I & II
COD	01-04-1991
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	Fire detection and protection system	611.00		611.00		26(1) (b) & 26 (1) (d)	In order to have an adequate fire protection system in the cable gallery and Oil tanks, augmentation of Fire Protection system is being carried out through installation of the fire protection system viz. Mulsifier, Foam system to prevent any catastrophic damage in case fire breaks out in Cable Gallery as existence of cables makes it vulnerable to fire hazard and existing fire protection equipments may not be able to control the spread of fire. Fire detections and Protection system is required to be installed for saftey and security as per the Cetral Electricity Authority (Technical standards for construction of Electric plants and lines), Regulations, 2010 and Cetral Electricity Authority (safety requirement for Construction, Operation and Maintenance of Electric plants and Electric lines), Regulations, 2011 (Placed at Annexure-II). The Hon'ble Commission vide order dated 16.02.17 in Pet No 293/GT/2014 has decided to consult CEA and based on the report of CEA the expenditure for augmenttation of fire fighting/ protection system under change in law was to be considered at the time of true up. Hence Hon'ble Commission may please allow the work to be capitalised under Regulations 26(1)()b) i.e compliance of existing law and 26(1)(d) i.e. security and safety of the plant.	
2								
3								
4								
	Total (A)	**611.00**	-	**611.00**	-			
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)		**611.00**	-	**611.00**	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	NTPC Limited
Name of the Generating Station	Ramagundam Super Thermal power Station Stage-I & II
COD	01-04-1991
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	Fire detection and protection system	67.00		67.00		26(1) (b) & 26 (1) (d)	Plese refer Form 9 for FY 2019-20	
2	Medium Velocity Water (MVW) system for CHP	283.00		283.00		26(1) (b) & 26 (1) (d)	Medium Velocity Water (MVW) system is required to be installed for saftey and security as per the Regulation 12(5) of Cetral Electricity Authority (Technical standards for construction of Electric plants and lines), Regulations, 2010 and Cetral Electricity Authority (safety requirement for Construction, Operation and Maintenance of Electric plants and Electric lines), Regulations, 2011 (Placed at Annexure- II). Augmentation of fire protection system of Coal Handling Plant (CHP) and Stacker Reclaimer area is essentially required to prevent any catastrophic damage in case fire breaks out in CHP as existense of coal in CHP area makes it vulnerable to fire hazard and mobile fire protection equipments may not be able to control the spread of fire.Hence Hon'ble Commission may please allow the work to be capitalised under Regulations 26(1)(b) i.e compliance of existing law and 26(1)(d) i.e. security and safety of the plant	
3	Replacement of Halon system with inert gas system	486.00		486.00		26(1) (b)	Halon fire protection system is provided for permanent fire fighting system and uses substances which are Ozone depleting in nature. As per the Environment (Protection) Act 1986, the Central Government laid down rules for Ozone Depleting Substances (Regulation and Control) Rules, 2000 (Attached as Annexure -III). As per the rules, no person or enterprise shall engage in any activity that uses ozone depleting substances unless he is registered with the authority and the generating companies are allowed to continue with the existing fire fighting system for a period of 10 years(Upto 01.01.2010) after which the production and servicing of the same was stopped (Vide Schedule IV). As per the Montreal Protocol on substances that deplete the Ozone layer, plants using Ozone depleting substances must phase out these systems and adopt systems which use substances that do not deplete the Ozone layer. Hence it is proposed to replace Halon gas fire protection system with alternate inert gas in line with ODS Rules during 2019-24. Honble Commission may allow capitalisation of Inert gas fire extinguishing system under Regulation 26(1)(b)(Compliance of any existing law). Hon'ble Commission was pleased to allow the same work vide order dated 29.07.16 in Petition no 281/GT/2014 for TSTPS-I under change in law.	
	Total (A)	**836.00**	**-**	**836.00**	**-**			
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**							
3								
	Total (B)	**-**	**-**	**-**	**-**			
Total Add. Cap. Claimed (A+B)		**836.00**	**-**	**836.00**	**-**			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Ramagundam Super Thermal power Station Stage-I & II**
COD	**01-04-1991**
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	Replacement of Halon system with inert gas system	146.00		146.00		26(1) (b)	Please refer form -9 for FY 2020-21	
	Total (A)	**146.00**	-	**146.00**	-			
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)		**146.00**	-	**146.00**	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Ramagundam Super Thermal power Station Stage-I & II**
COD	**01-04-1991**
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	NA							
	Total (A)	-	-	-	-			
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**							
2	NA							
	Total (B)	-	-	-	-			
Total Add. Cap. Claimed (A+B)		-	-	-	-			

(Petitioner)

PART-I
FORM- 9

Year wise Statement of Additional Capitalisation after COD

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Ramagundam Super Thermal power Station Stage-I & II**
COD	**01-04-1991**
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								
2						NA		
	Total (A)	-	-	-	-			
B.	**Works beyond Original scope exluding add-cap due to Change in Law eligble for RoE at Wtd. Average rate of Interest**							
1	Ash dyke buttressing/ raising and other related works	21000		21000		26(1)(e)	Capacity of existing lagoons for disposal of ash is exhausted as the Station has operated at much higher levels than that envisaged in early periods when this Station was planned. To enhance the capacity of existing lagoons and further disposal of ash , consultancy project was awarded to Dr. C. R. Patra, Professor NIT Rourkela and Dr. Umesh Dayal, Professor (Retired),IIT Kanpur. To raise the capacity for ash disposal, it has been advised by the consultants for constructing a Peripheral Buttressing Dyke from the Downstream of the Starter Dyke where sufficient space is available for Downstream raising and where there is no space available the buttressing to start above the existing Starter Dyke. It has aslo been advised that after buttressing is done, the dyke shall be raised in multiple stages. Committee has also recommended for new ash dyke. The ash related works are of continious in nature for disposal of ash. These claimed works are beyond the original scope of work. Since the works are necesserily required for sustainable genration, Hence it may please be allowed by the Hon'ble Commission under 26 (1)(e). Extract of committe report are also enclosed at Annex-IV	
	Total (B)	**21,000.00**	-	**21,000.00**	-			
Total Add. Cap. Claimed (A+B)		**21,000.00**	-	**21,000.00**	-			

(Petitioner)

43

PART-I
FORM- 10

Name of the Petitioner	**NTPC Limited**
Name of the Generating Station	**Ramagundam Super Thermal power Station Stage-I & II**
Date of Commercial Operation	**01-04-1991**

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		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 :	**Ramagundam Super Thermal power Station Stage-I & 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	226961.30	2,26,904.35	2,27,515.35	2,28,351.35	2,28,497.35	2,28,497.35
2	Closing Capital Cost	226904.35	2,27,515.35	2,28,351.35	2,28,497.35	2,28,497.35	2,49,497.35
3	Average Capital Cost	226932.83	2,27,209.85	2,27,933.35	2,28,424.35	2,28,497.35	2,38,997.35
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	2,641.27	2,641.27	2,641.27	2,641.27	2,641.27	2,641.27
5	Rate of depreciation						
6	Depreciable value	2,01,862.40	2,02,111.72	2,02,762.87	2,03,204.77	2,03,270.47	2,12,720.47
7.	Balance useful life at the beginning of the period	1.00	1.00	1.00	1.00	1.00	1.00
8	Remaining depreciable value	19.98	300.57	651.15	441.90	65.70	9,450.00
9	Depreciation (for the period)	0.00	300.57	651.15	441.90	65.70	9,450.00
10	Depreciation (annualised)	19.98	**300.57**	**651.15**	**441.90**	**65.70**	**9,450.00**
11	Cumulative depreciation at the end of the period		2,02,111.72	2,02,762.87	2,03,204.77	2,03,270.47	2,12,720.47
12	Less: Cumulative depreciation adjustment on account of un-discharged liabilities deducted as on 01.04.2009	0.00	-	-	-	-	-
13	Add: Cumulative depreciation adjustment on account of liability Discharge	0.00	-	-	-	-	-
14	Less: Cumulative depreciation adjustment on account of de-capitalisation	51.25	-	-	-	-	-
15	Net Cumulative depreciation at the end of the period after adjustments	2,01,811.15	2,02,111.72	2,02,762.87	2,03,204.77	2,03,270.47	2,12,720.47

^^ Shall be provided at the time of true up

(Petitioner)

	Calculation of Interest on Actual Loans	FORM-13				
Name of the Company		NTPC Limited				
Name of the Power Station		Ramagundam I&II				
						Rs lakh
Sl. no.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	SBI VII D-8					
	Gross loan - Opening	800.00	800.00	800.00	800.00	800.00
	Cumulative repayments of Loans upto previous year	400.00	500.00	600.00	700.00	800.00
	Net loan - Opening	400.00	300.00	200.00	100.00	0.00
	Addition					
	Repayments of Loans	100.00	100.00	100.00	100.00	0.00
	Net loan - Closing	300.00	200.00	100.00	0.00	0.00
	Average Net Loan	350.00	250.00	150.00	50.00	0.00
	Rate of Interest	8.2500%	8.2500%	8.2500%	8.2500%	8.2500%
	Interest on loan	28.88	20.63	12.38	4.13	0.00
2	SBI VII D-12					
	Gross loan - Opening	1800.00	1800.00	1800.00	1800.00	1800.00
	Cumulative repayments of Loans upto previous year	900.00	1125.00	1350.00	1575.00	1800.00
	Net loan - Opening	900.00	675.00	450.00	225.00	0.00
	Addition					
	Repayments of Loans	225.00	225.00	225.00	225.00	0.00
	Net loan - Closing	675.00	450.00	225.00	0.00	0.00
	Average Net Loan	787.50	562.50	337.50	112.50	0.00
	Rate of Interest	8.2500%	8.2500%	8.2500%	8.2500%	8.2500%
	Interest on loan	64.97	46.41	27.84	9.28	0.00
3	SBI VII D-16					
	Gross loan - Opening	1500.00	1500.00	1500.00	1500.00	1500.00
	Cumulative repayments of Loans upto previous year	750.00	937.50	1125.00	1312.50	1500.00
	Net loan - Opening	750.00	562.50	375.00	187.50	0.00
	Addition					
	Repayments of Loans	187.50	187.50	187.50	187.50	0.00
	Net loan - Closing	562.50	375.00	187.50	0.00	0.00
	Average Net Loan	656.25	468.75	281.25	93.75	0.00
	Rate of Interest	8.2500%	8.2500%	8.2500%	8.2500%	8.2500%
	Interest on loan	54.14	38.67	23.20	7.73	0.00
4	SBI VIII D-1					
	Gross loan - Opening	5000.00	5000.00	5000.00	5000.00	5000.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	555.56	1111.11
	Net loan - Opening	5000.00	5000.00	5000.00	4444.44	3888.89
	Addition					
	Repayments of Loans	0.00	0.00	555.56	555.56	555.56
	Net loan - Closing	5000.00	5000.00	4444.44	3888.89	3333.33
	Average Net Loan	5000.00	5000.00	4722.22	4166.67	3611.11
	Rate of Interest	8.2500%	8.2500%	8.2500%	8.2500%	8.2500%
	Interest on loan	412.50	412.50	389.58	343.75	297.92
5	SBI VIII D-11					
	Gross loan - Opening	1100.00	1100.00	1100.00	1100.00	1100.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	122.22	244.44

	Net loan - Opening	1100.00	1100.00	1100.00	977.78	855.56
	Addition	0.00	0.00	0.00	0.00	0.00
	Repayments of Loans	0.00	0.00	122.22	122.22	122.22
	Net loan - Closing	1100.00	1100.00	977.78	855.56	733.33
	Average Net Loan	1100.00	1100.00	1038.89	916.67	794.44
	Rate of Interest	8.2500%	8.2500%	8.2500%	8.2500%	8.2500%
	Interest on loan	90.75	90.75	85.71	75.63	65.54
6	**SBI VIII D-18**					
	Gross loan - Opening	1500.00	1500.00	1500.00	1500.00	1500.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	166.67	333.33
	Net loan - Opening	1500.00	1500.00	1500.00	1333.33	1166.67
	Addition	0.00	0.00	0.00	0.00	0.00
	Repayments of Loans	0.00	0.00	166.67	166.67	166.67
	Net loan - Closing	1500.00	1500.00	1333.33	1166.67	1000.00
	Average Net Loan	1500.00	1500.00	1416.67	1250.00	1083.33
	Rate of Interest	8.2500%	8.2500%	8.2500%	8.2500%	8.2500%
	Interest on loan	123.75	123.75	116.88	103.13	89.38
7	**SBI XI D-4**					
	Gross loan - Opening	3600.00	3600.00	3600.00	3600.00	3600.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	0.00	400.00
	Net loan - Opening	3600.00	3600.00	3600.00	3600.00	3200.00
	Addition	-	-	-	-	-
	Repayments of Loans	0.00	0.00	0.00	400.00	400.00
	Net loan - Closing	3600.00	3600.00	3600.00	3200.00	2800.00
	Average Net Loan	3600.00	3600.00	3600.00	3400.00	3000.00
	Rate of Interest	8.3500%	8.3500%	8.3500%	8.3500%	8.3500%
	Interest on loan	300.60	300.60	300.60	283.90	250.50
8	**SBI XI D-5**					
	Gross loan - Opening	2000.00	2000.00	2000.00	2000.00	2000.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	0.00	222.22
	Net loan - Opening	2000.00	2000.00	2000.00	2000.00	1777.78
	Addition	-	-	-	-	-
	Repayments of Loans	0.00	0.00	0.00	222.22	222.22
	Net loan - Closing	2000.00	2000.00	2000.00	1777.78	1555.56
	Average Net Loan	2000.00	2000.00	2000.00	1888.89	1666.67
	Rate of Interest	8.3500%	8.3500%	8.3500%	8.3500%	8.3500%
	Interest on loan	167.00	167.00	167.00	157.72	139.17
9	**SBI IX D-9**					
	Gross loan - Opening	2500.00	2500.00	2500.00	2500.00	2500.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	277.78	555.56	833.33
	Net loan - Opening	2500.00	2500.00	2222.22	1944.44	1666.67
	Addition	-	-	-	-	-
	Repayments of Loans	0.00	277.78	277.78	277.78	277.78
	Net loan - Closing	2500.00	2222.22	1944.44	1666.67	1388.89
	Average Net Loan	2500.00	2361.11	2083.33	1805.56	1527.78
	Rate of Interest	8.2500%	8.2500%	8.2500%	8.2500%	8.2500%
	Interest on loan	206.25	194.79	171.88	148.96	126.04
10	**PNB-III D-3**					
	Gross loan - Opening	4000.00	4000.00	4000.00	4000.00	4000.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	444.44	888.89
	Net loan - Opening	4000.00	4000.00	4000.00	3555.56	3111.11

	Addition	0.00	0.00	0.00	0.00	0.00
	Repayments of Loans	0.00	0.00	444.44	444.44	444.44
	Net loan - Closing	4000.00	4000.00	3555.56	3111.11	2666.67
	Average Net Loan	4000.00	4000.00	3777.78	3333.33	2888.89
	Rate of Interest	8.3000%	8.3000%	8.3000%	8.3000%	8.3000%
	Interest on loan	332.00	332.00	313.56	276.67	239.78
11	**PNB-III D-4**					
	Gross loan - Opening	10000.00	10000.00	10000.00	10000.00	10000.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	1111.11	2222.22
	Net loan - Opening	10000.00	10000.00	10000.00	8888.89	7777.78
	Addition	0.00	0.00	0.00	0.00	0.00
	Repayments of Loans	0.00	0.00	1111.11	1111.11	1111.11
	Net loan - Closing	10000.00	10000.00	8888.89	7777.78	6666.67
	Average Net Loan	10000.00	10000.00	9444.44	8333.33	7222.22
	Rate of Interest	8.3000%	8.3000%	8.3000%	8.3000%	8.3000%
	Interest on loan	830.00	830.00	783.89	691.67	599.44
12	**HDFC VI D-1**					
	Gross loan - Opening	10000.00	10000.00	10000.00	10000.00	10000.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	0.00	0.00
	Net loan - Opening	10000.00	10000.00	10000.00	10000.00	10000.00
	Addition	0.00	0.00	0.00	0.00	0.00
	Repayments of Loans	0.00	0.00	0.00	0.00	0.00
	Net loan - Closing	10000.00	10000.00	10000.00	10000.00	10000.00
	Average Net Loan	10000.00	10000.00	10000.00	10000.00	10000.00
	Rate of Interest	8.4500%	8.4500%	8.4500%	8.4500%	8.4500%
	Interest on loan	845.00	845.00	845.00	845.00	845.00
13	**HDFC IV D-4**					
	Gross loan - Opening	22000.00	22000.00	22000.00	22000.00	22000.00
	Cumulative repayments of Loans upto previous year	0.00	0.00	0.00	2444.44	4888.89
	Net loan - Opening	22000.00	22000.00	22000.00	19555.56	17111.11
	Addition	0.00	0.00	0.00	0.00	0.00
	Repayments of Loans	0.00	0.00	2444.44	2444.44	2444.44
	Net loan - Closing	22000.00	22000.00	19555.56	17111.11	14666.67
	Average Net Loan	22000.00	22000.00	20777.78	18333.33	15888.89
	Rate of Interest	8.4500%	8.4500%	8.4500%	8.4500%	8.4500%
	Interest on loan	1859.00	1859.00	1755.72	1549.17	1342.61
	TOTAL					
	Gross loan - Opening	65800.00	65800.00	65800.00	65800.00	65800.00
	Cumulative repayments of Loans upto previous year	2050.00	2562.50	3352.78	8987.50	15244.44
	Net loan - Opening	63750.00	63237.50	62447.22	56812.50	50555.56
	Addition	0.00	0.00	0.00	0.00	0.00
	Repayments of Loans	512.50	790.28	5634.72	6256.94	5744.44
	Net loan - Closing	63237.50	62447.22	56812.50	50555.56	44811.11
	Average Net Loan	63493.75	62842.36	59629.86	53684.03	47683.33
	Rate of Interest	**8.3706%**	**8.3719%**	**8.3737%**	**8.3763%**	**8.3790%**
	Interest on loan	5314.83	5261.09	4993.23	4496.72	3995.38

Statement No 1

Annexure-B

FORM-15

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014

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

Name of the Company:- NTPC Ltd.,

Name of Power Station:- Ramagundam Super Thermal Power Station

Month:- OCT'18

Stage-I&2

S.No.	Particulars	Unit	Domestic Coal			Imported Coal
			Supplied by MGR	Supplied by Rail	E-Auction coal	
			(i)	(ii)	(iii)	(iv)
1	Quantity of coal supplied by the coal Company inclusive of opening stock of coal	(MT)	663461.55	349177.46	0.00	0.00
2	Adjustment (+/-) in quantity supplied by the coal Company	(MT)				
3	Coal supplied by the Coal Company inclusive of opening stock of coal (1+2)	(MT)	663461.55	349177.46	0.00	0.00
4	Normative transit & handling losses (for coal based projects)	(MT)	1326.92	2793.42		0.00
5	Net coal suplied inclusive of opening stock of coal (3-4)	(MT)	662134.63	346384.04	0.00	0.00
6	Amount charged by the coal company inclusive of value of opening stock of coal	(Rs.)	2610522437	887637918	0.00	0.00
7	Adjustment (+/-) in amount charged by the coal Company	(Rs.)				
8	Total amount charged inclusive of opening stock of coal (6+7)	(Rs.)	2610522437	887637918	0.00	0.00
9	Transportation charges by Rail / Ship / Road Transport	(Rs.)		53531561		
10	Adjustment (+/-) in amount charged by Railways / transport Company	(Rs.)	0	0		
11	Demurrage charges, if any	(Rs.)				
12	Cost of diesel in transporting coal through MGR system	(Rs.)	9109457		-	-
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	9109457	53531561	0.00	0.00
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc)	(Rs.)	10419160	5483567		
14	Total amount charged for coal supplied including transportation (8+13+13A)	(Rs.)	2630051054	946653046	0.00	0.00
15	Landed cost of coal	(Rs./MT)		3,546.49	-	-
16	Blending ratio			100.000	-	-
17	Weighted average cost of coal	(Rs./MT)		3546.49		
18	GCV of Domestic Coal as per bill of Coal Company, EM basis	(kCal/Kg)			4045	
19	GCV of Imported Coal as per bill of Coal Company, AD basis	(kCal/Kg)				0
20	Weighted average GCV of coal as Billed	(kCal/Kg)		4045		
21	GCV of Domestic Coal as received at Station, TM Basis	(kCal/Kg)		3793		
22	GCV of Imported Coal as received at Station, TM Basis	(kCal/Kg)				0
23	Weighted average GCV of coal as received at station	(kCal/Kg)		3793		

बी. रामा राव / B. RAMA RAO
महाप्रबंधक (वित्त) / General Manager (Finance)
दक्षिण क्षेत्र मुख्यालय (एस आर), प्रशासनिक भवन / SSC (SR) - Admn. Building
एनटीपीसी लिमिटेड-सिम्हाद्री / NTPC Limited - Simhadri
विशाखापट्टनम - VISAKHAPATNAM - 531 020

49

V. RAMA & VARMA * HYDERABAD * CHARTERED ACCOUNTANTS

Statement No 1

Annexure-B

FORM-15

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014

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

Name of the Company:- NTPC Ltd.,

Name of Power Station:- Ramagundam Super Thermal Power Station

Month:- NOV'18

Stage-I&2

S.No.	Particulars	Unit	Domestic Coal			Imported Coal
			Supplied by MGR	Supplied by Rail	E-Auction coal	
			(i)	(ii)	(iii)	(iv)
1	Quantity of coal supplied by the coal Company inclusive of opening stock of coal	(MT)	851026.23	297647.78	0.00	0.00
2	Adjustment (+/-) in quantity supplied by the coal Company	(MT)				
3	Coal supplied by the Coal Company inclusive of opening stock of coal (1+2)	(MT)	851026.23	297647.78	0.00	0.00
4	Normative transit & handling losses (for coal based projects)	(MT)	1509.50	2381.18		0.00
5	Net coal suplied inclusive of opening stock of coal (3-4)	(MT)	849516.73	295266.60	0.00	0.00
6	Amount charged by the coal company inclusive of value of opening stock of coal	(Rs.)	3349092930	787842020	0.00	0.00
7	Adjustment (+/-) in amount charged by the coal Company	(Rs.)				
8	Total amount charged inclusive of opening stock of coal (6+7)	(Rs.)	3349092930	787842020	0.00	0.00
9	Transportation charges by Rail / Ship / Road Transport	(Rs.)		42792204		
10	Adjustment (+/-) in amount charged by Railways / transport Company	(Rs.)	0	0		
11	Demurrage charges, if any	(Rs.)				
12	Cost of diesel in transporting coal through MGR system	(Rs.)	8729846		-	-
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	8729846	42792204	0.00	0.00
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc)	(Rs.)	20942718	7324749		
14	Total amount charged for coal supplied including transportation (8+13+13A)	(Rs.)	3378765494	837958973	0.00	0.00
15	Landed cost of coal	(Rs./MT)	3,683.43		-	-
16	Blending ratio		100.000		-	-
17	Weighted average cost of coal	(Rs./MT)	3683.43			
18	GCV of Domestic Coal as per bill of Coal Company, EM basis	(kCal/Kg)	4122			
19	GCV of Imported Coal as per bill of Coal Company, AD basis	(kCal/Kg)				0
20	Weighted average GCV of coal as Billed	(kCal/Kg)	4122			
21	GCV of Domestic Coal as received at Station, TM Basis	(kCal/Kg)	3700			
22	GCV of Imported Coal as received at Station, TM Basis	(kCal/Kg)				0
23	Weighted average GCV of coal as received at station	(kCal/Kg)	3700			

वी. रामा राव / B. RAMA RAO
महाप्रबंधक (वित्त) / General Manager (Finance)
एस एस बी. (एस ओ), सचिवालय भवन / SSC (SR) - Admn. Building
एनटीपीसी लिमिटेड-सिम्हाद्रि / NTPC Limited - Simhadri
विशाखपट्टणम - VISAKHAPATNAM - 531 020

50

Statement No 1

Annexure-B

FORM-15

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014

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

Name of the Company:- NTPC Ltd.,

Name of Power Station:- Ramagundam Super Thermal Power Station

Month:- DEC'18

Stage-I&2

S.No.	Particulars	Unit	Domestic Coal			Imported Coal
			Supplied by MGR	Supplied by Rail	E-Auction coal	
			(i)	(ii)	(iii)	(iv)
1	Quantity of coal supplied by the coal Company inclusive of opening stock of coal	(MT)	984040.11	285314.66	0.00	0.00
2	Adjustment (+/-) in quantity supplied by the coal Company	(MT)	-320.95			
3	Coal supplied by the Coal Company inclusive of opening stock of coal (1+2)	(MT)	983719.16	285314.66	0.00	0.00
4	Normative transit & handling losses (for coal based projects)	(MT)	1590.16	2282.52		0.00
5	Net coal suplied inclusive of opening stock of coal (3-4)	(MT)	982129.00	283032.14	0.00	0.00
6	Amount charged by the coal company inclusive of value of opening stock of coal	(Rs.)	3863915110	760355944	0.00	0.00
7	Adjustment (+/-) in amount charged by the coal Company	(Rs.)				
8	Total amount charged inclusive of opening stock of coal (6+7)	(Rs.)	3863915110	760355944	0.00	0.00
9	Transportation charges by Rail / Ship / Road Transport	(Rs.)		29326515		
10	Adjustment (+/-) in amount charged by Railways / transport Company	(Rs.)	0	0		
11	Demurrage charges, if any	(Rs.)				
12	Cost of diesel in transporting coal through MGR system	(Rs.)	8721092		-	-
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	8721092	29326515	0.00	0.00
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc)	(Rs.)	20250071	5871348		
14	Total amount charged for coal supplied including transportation (8+13+13A)	(Rs.)	3892886273	795553807	0.00	0.00
15	Landed cost of coal	(Rs./MT)		3,705.81	-	-
16	Blending ratio			100.000	-	-
17	Weighted average cost of coal	(Rs./MT)	3705.81			
18	GCV of Domestic Coal as per bill of Coal Company, EM basis	(kCal/Kg)			4131	
19	GCV of Imported Coal as per bill of Coal Company, AD basis	(kCal/Kg)				0
20	Weighted average GCV of coal as Billed	(kCal/Kg)	4131			
21	GCV of Domestic Coal as received at Station, TM Basis	(kCal/Kg)	3658			
22	GCV of Imported Coal as received at Station, TM Basis	(kCal/Kg)				0
23	Weighted average GCV of coal as received at station	(kCal/Kg)	3658			

वी. रामा राव / B. RAMA RAO
महाप्रबंधक (वित्त) / General Manager (Finance)
एस एस सी (एस आर), प्रशासनिक भवन / SSC (SR) - Admn. Building
एनटीपीसी लिमिटेड-सिम्हाद्रि / NTPC Limited - Simhadri
विशाखपट्टणम - VISAKHAPATNAM - 531 020

51

VARMA & VARMA CHARTERED ACCOUNTANTS

Statement No 2.

Annexure-B

FORM-15 A

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014

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

Name of the Company:- NTPC Ltd.,

Name of Power Station:- Ramagundam Super Thermal Power Station

Month:- OCT'18

Stage-I&2

S.No.	Particulars	Unit	HFO	HSD
			(i)	(ii)
1	Quantity of oil supplied by the oil Company inclusive of opening stock of oil	(MT)	5014.292	533.796
2	Adjustment (+/-) in quantity supplied by the oil Company	(MT)		
3	oil supplied by the oil Company inclusive of opening stock of oil (1+2)	(MT)	5014.292	533.796
4	Normative transit & handling losses (for oil based projects)	(MT)		
5	Net oil suplied inclusive of opening stock of oil (3-4)	(MT)	5014.292	533.796
6	Amount charged by the oil company inclusive of value of opening stock of oil	(Rs.)	190317715	37582092
7	Adjustment (+/-) in amount charged by the oil Company	(Rs.)		
8	Total amount charged inclusive of opening stock of oil (6+7)	(Rs.)	190317715	37582092
9	Transportation charges by Rail / Ship / Road Transport	(Rs.)		
10	Adjustment (+/-) in amount charged by Railways / transport Company	(Rs.)		
11	Demurrage charges, if any	(Rs.)		
12	Cost of diesel in transporting oil through MGR system	(Rs.)		0
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	0	0
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc)	(Rs.)		
14	Total amount charged for oil supplied including transportation (8+13+13A)	(Rs.)	190317715	37582092
15	Landed cost of oil	(Rs./MT)	37955.052	70405.346
16	Blending ratio		23.18	76.82
17	Weighted average cost of oil	(Rs./MT)	62881.86	
18	GCV of HFO oil as per bill of oil Company	(kCal/Ltr)	9870	
19	GCV of HSD as per bill of oil Company	(kCal/Ltr)		9062
20	Weighted average GCV of oil as Billed	(kCal/Ltr)	9249	
21	GCV of HFO oil as received at Station	(kCal/Ltr)	9870	
22	GCV of HSD as received at Station	(kCal/Ltr)		9062
23	Weighted average GCV of oil as received at station	(kCal/Ltr)	9249	

बी. रामा राव / B. RAMA RAO
महाप्रबंधक (वित्त) / General Manager (Finance)
एस एस बी. (एस आर), प्रशासनिक भवन / SSC (SR) - Admn. Building
एनटीपीसी लिमिटेड-सिंगरौली / NTPC Limited - Singrauli
विशाखपट्टणम - VISAKHAPATNAM - 531 020

52

VARMA & VARMA CHARTERED ACCOUNTANTS HYDERABAD

Statement No 2.

Annexure-B

FORM-15 A

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014

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

Name of the Company:- NTPC Ltd.,

Name of Power Station:- Ramagundam Super Thermal Power Station

Month:- NOV'18 **Stage-I&2**

S.No.	Particulars	Unit	HFO	HSD
			(i)	(ii)
1	Quantity of oil supplied by the oil Company inclusive of opening stock of oil	(MT)	4933.801	411.529
2	Adjustment (+/-) in quantity supplied by the oil Company	(MT)		
3	oil supplied by the oil Company inclusive of opening stock of oil (1+2)	(MT)	4933.801	411.529
4	Normative transit & handling losses (for oil based projects)	(MT)		
5	Net oil suplied inclusive of opening stock of oil (3-4)	(MT)	4933.801	411.529
6	Amount charged by the oil company inclusive of value of opening stock of oil	(Rs.)	187262675	31274409
7	Adjustment (+/-) in amount charged by the oil Company	(Rs.)		
8	Total amount charged inclusive of opening stock of oil (6+7)	(Rs.)	187262675	31274409
9	Transportation charges by Rail / Ship / Road Transport	(Rs.)		
10	Adjustment (+/-) in amount charged by Railways / transport Company	(Rs.)		
11	Demurrage charges, if any	(Rs.)		
12	Cost of diesel in transporting oil through MGR system	(Rs.)		0
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	0	0
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc)	(Rs.)		
14	Total amount charged for oil supplied including transportation (8+13+13A)	(Rs.)	187262675	31274409
15	Landed cost of oil	(Rs./MT)	37955.052	75995.639
16	Blending ratio		99.46	0.54
17	Weighted average cost of oil	(Rs./MT)	38160.64	
18	GCV of HFO oil as per bill of oil Company	(kCal/Ltr)	9870	
19	GCV of HSD as per bill of oil Company	(kCal/Ltr)		9062
20	Weighted average GCV of oil as Billed	(kCal/Ltr)	9866	
21	GCV of HFO oil as received at Station	(kCal/Ltr)	9870	
22	GCV of HSD as received at Station	(kCal/Ltr)		9062
23	Weighted average GCV of oil as received at station	(kCal/Ltr)	9866	

बी. रामा राव / B. RAMA RAO
महाप्रबंधक (वित्त) / General Manager (Finance)
एस एस सी (एस क्षे), प्रशासनिक भवन / SSC (SR) - Admn. Building
एनटीपीसी लिमिटेड-सिंहाद्रि / NTPC Limited - Simhadri
विशाखपट्टणम - VISAKHAPATNAM - 531 020

53

Statement No 2.

Annexure-B

FORM-15 A

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014

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

Name of the Company:- NTPC Ltd.,

Name of Power Station:- Ramagundam Super Thermal Power Station

Month:- DEC'18 **Stage-I&2**

S.No.	Particulars	Unit	HFO	HSD
			(i)	(ii)
1	Quantity of oil supplied by the oil Company inclusive of opening stock of oil	(MT)	4374.712	408.491
2	Adjustment (+/-) in quantity supplied by the oil Company	(MT)		
3	oil supplied by the oil Company inclusive of opening stock of oil (1+2)	(MT)	4374.712	408.491
4	Normative transit & handling losses (for oil based projects)	(MT)		
5	Net oil suplied inclusive of opening stock of oil (3-4)	(MT)	4374.712	408.491
6	Amount charged by the oil company inclusive of value of opening stock of oil	(Rs.)	166042422	31043535
7	Adjustment (+/-) in amount charged by the oil Company	(Rs.)		
8	Total amount charged inclusive of opening stock of oil (6+7)	(Rs.)	166042422	31043535
9	Transportation charges by Rail / Ship / Road Transport	(Rs.)		
10	Adjustment (+/-) in amount charged by Railways / transport Company	(Rs.)		
11	Demurrage charges, if any	(Rs.)		
12	Cost of diesel in transporting oil through MGR system	(Rs.)		0
13	Total Transportation Charges (9+/-10-11+12)	(Rs.)	0	0
13A	Others (Stone picking charges, Loco driver's salary, Sampling Charges etc)	(Rs.)		
14	Total amount charged for oil supplied including transportation (8+13+13A)	(Rs.)	166042422	31043535
15	Landed cost of oil	(Rs./MT)	37955.052	75995.639
16	Blending ratio		80.42	19.58
17	Weighted average cost of oil	(Rs./MT)	45403.65	
18	GCV of HFO oil as per bill of oil Company	(kCal/Ltr)	9870	
19	GCV of HSD as per bill of oil Company	(kCal/Ltr)		9062
20	Weighted average GCV of oil as Billed	(kCal/Ltr)	9712	
21	GCV of HFO oil as received at Station	(kCal/Ltr)	9870	
22	GCV of HSD as received at Station	(kCal/Ltr)		9062
23	Weighted average GCV of oil as received at station	(kCal/Ltr)	9712	

बी. रामा राव / B. RAMA RAO
महाप्रबंधक (वित्त) / General Manager (Finance)
एस एस बी (एस आर), प्रशासनिक भवन / SSC (SR) - Admn. Building
एनटीपीसी लिमिटेड-सिम्हाद्रि / NTPC Limited - Simhadri
विशाखपट्टणम - VISAKHAPATNAM - 531 020

54

Computation of Energy Charges

Form-15B

Name of the Company	**NTPC Limited**
Name of the Power Station	**Ramagundam Super Thermal power Station Stage-I & II**

Computation of Energy Charges

1	Rate of Energy Charge from Sec. Fuel Oil/ Alternate Fuel (p/kwh) $(REC)_s$	$= (Q_s)_n \times P_s$	1.898
2	Heat Contribution from SFO / Alternate Fuel (H_s)	$= (Qs)_n \times (GCV)_s$	4.935
3	Heat Contribution from coal $(H_p)_s$	$= GHR - H_s$	2396.49
4	Specific Primary Fuel Consumption $(Qp)_n$	$= H_p / (GCV)_p$	0.660
5	Rate of Energy charge from Primary Fuel (p/kwh) $(REC)_p$		240.923
6	Rate of Energy charge ex-bus (p/kWh) (REC)	$= ((REC)_s + (REC)_p / (1-(AUX))$	261.210

		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	%	7.04	7.04	7.04	7.04	7.04
Heat Rate	Kcal/Kwh	2,401.43	2,401.43	2,401.43	2,401.43	2401.428571
Computation of Variable Charges						
Variable Charge (Coal)	p/kwh	259.169	259.169	259.169	259.169	259.169
Variable Charge (Oil)	p/kwh	2.041	2.041	2.041	2.041	2.041
Total	p/kwh	261.210	261.210	261.210	261.210	261.210
Price of fuel from Form-15/15A						
Coal Cost	(Rs./MT)	3651.31	3651.31	3651.31	3651.31	3651.31
Oil Cost	(Rs./KL)	37955.05	37955.05	37955.05	37955.05	37955.05
Computation of Fuel Expenses for Calculation of IWC:						
ESO in a year	(MUs)	14575.61	14535.78	14535.78	14535.78	14575.607
ESO for 40 days	(MUs)	1592.963	1592.963	1592.96	1592.96	1592.963
Cost of coal for 40 Days	(Rs. Lakh)	41284.65	41284.65	41284.65	41284.65	41284.65
Cost of oil for 2 months	(Rs. Lakh)	495.93	494.57	494.57	494.57	495.93
Energy Expenses for 45 days	(Rs. Lakh)	46811.08	46811.08	46811.08	46811.08	46811.08

Coal		**3rd month**	**2nd month**	**1st month**	**Wtd. Avg.**
Wtd. Avg. Price of Coal	Rs./MT	3546.49	3683.43	3705.80	**3651.31**
Wtd. Avg. GCV of Coal as received	kCal/Kg	3793	3700	3658	**3717.00**
Wtd. Avg. GCV of Coal as received after adjustement of 85 kcal/kg					**3632.00**
Sec. Oil					
Wtd. Avg. Price of Secondary Fuel	Rs/KL	37955.05	37955.05	37955.05	**37955.05**
Wtd. Avg. GCV of Secondary Fuel	kCal/L	9870.00	9870.00	9870.00	**9870.00**

PETITIONER

PART 1
FORM- L

Name of the Petitioner — **NTPC Ltd**
Name of the Generating Station — **Ramagundam Super Thermal power Station Stage-I & II**

Statement of Capital cost
(To be given for relevant dates and year wise)

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01.04.19		
		Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening Gross Block Amount as per books	295787.38	1386.33	
	b) Amount of IDC in A(a) above	644.34		
	c) Amount of FC in A(a) above			
	d) Amount of FERV in A(a) above	5.09		
	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: Ramagundam Super Thermal power Station Stage-I & II

Statement of Capital Woks in Progress

(To be given for relevant dates and year wise)

(Amount in Rs. Lakh)

S. No.	Particulars	As on 01.04.19		
		Accrual Basis	Un-discharged Liabilities	Cash Basis
A	a) Opening CWIP as per books	35793.26	4765.84	
	b) Amount of IDC in A(a) above	2240.53		
	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 :	**Ramagundam Super Thermal power Station Stage-I & 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	1,13,458.99	1,13,419.12	1,13,846.82	1,14,432.02	1,14,534.22	1,14,534.22
2	Cumulative repayment of Normative loan up to previous year	1,12,493.96	1,12,474.07	1,12,774.64	1,13,425.79	1,13,867.69	1,13,933.39
3	**Net Normative loan – Opening**	965.03	945.05	1,072.18	1,006.23	666.53	600.83
4	Add: Increase due to addition during the year / period		427.70	585.20	102.20	-	14,700.00
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	19.97	300.57	651.15	441.90	65.70	9,450.00
9	Adj in repayment due to decap	39.86					
10	**Net Normative loan - Closing**	945.06	1,072.18	1,006.23	666.53	600.83	5,850.83
11	**Average Normative loan**	955.04	1,008.61	1,039.20	836.38	633.68	3,225.83
12	Weighted average rate of interest	10.2500	8.3706	8.3719	8.3737	8.3763	8.3790
13	**Interest on Loan**	**97.89**	**84.43**	**87.00**	**70.04**	**53.08**	**270.29**

(Petitioner)

PART 1
FORM- O

Calculation of Interest on Working Capital

Name of the Company :	**NTPC Limited**
Name of the Power Station :	**Ramagundam Super Thermal power Station Stage-I & 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	36,387.08	41284.65	41284.65	41284.65	41284.65	41284.65
2	Cost of Main Secondary Fuel Oil	700.09	495.93	494.57	494.57	494.57	495.93
3	Fuel Cost						
4	Liquid Fuel Stock						
5	O & M Expenses	2,037.65	4864.54	5080.84	5239.95	5449.20	5646.52
6	Maintenance Spares	4,890.36	11674.90	12194.02	12575.87	13078.09	13551.65
7	Receivables	56,855.93	57322.99	57737.42	57959.67	58235.96	59748.07
8	Total Working Capital	100871.11	115643.01	116791.50	117554.71	118542.48	120726.82
9	Rate of Interest	13.5000	12.0500	12.0500	12.0500	12.0500	12.0500
10	**Interest on Working Capital**	**13617.60**	**13934.98**	**14073.38**	**14165.34**	**14284.37**	**14547.58**

Petitioner

FORM-S

Capital laibilities as on 01.04.19

RAMAGUNDAM STG I & II

Amount in (Rs.)

Name of the Party	Name of the work	Undischarged liabilities relating to GB as on 31.03.2019
Vijay fire prot(arbitration)	MVW Spray syst	1,87,965
vijay fire protect syst	MVW Spray syst	1,87,294
ION exchange (1006808)	Arbitration case	28,08,251
Prefab gratings (1004424)	Arbitration case	6,60,135
ABB LTD (1000079)	Repl.of DAS with addl.prov. Of separate UPS for each unit of 1-3	40,36,848
SCHNEIDER ELECTRIC INFRASTRUCTURE	Civil and Electrical Erection and commissioning works of 400KV,63MVAR Bus Reactor Bay.	15,71,609
FREE HOLD LAND	FREE HOLD LAND	50,06,688
ABC ENGG WORKS	Asst in erec of 150 kg/hr chlorinators	9,640
TRANSFORMERS AND ELECTRICALS	Sup of 400 KV Current Transofrmers	6,01,515
HONEYWELL AUTOMATION INDIA LTD	CONTROL INSTRUMENTS	32,67,307
GANESH ENTERPRISES	FOB 10:COMPLETE PUMP ASSY.	2,19,500
Free Hold Land		4,17,224
STAINFAB ENGINEERS	PA FAN IMPELLER (LH)SAOMO2SMA2R0481	200
ABB INDIA LTD	PLCC PANELS(ABB SNGLCHNL 40W)	5,58,380
TRANSFORMERS AND ELECTRICALS	400KV CT 2000A\1000A\500A\1A- 400 KV CTs for Stg-I	3,436
INGERSOLL RAND INDIA LTD	AIR COMPRESSOR	72,304
Ratna Infrastructure Projects	ASH DYKE N1 S1 N2 S2 PONDS	4,02,578
CNR DATONG ELECTRIC LOCO CO LTD	WHEEL AXLE SETS ADAPTORS WAGON :SYSTEM	30,86,409
DRIPLEX WATER ENGINEERING PVT LTD & RITES LTD	DRY ASH EXTRACTION SYSTEM OF U-4	8,16,735
3M ELECTRO & RAYCHEM RPG PVT LTD & SRI LAKSHMI ENTERPRISES	STATION UNIT TRANSFORMERS 29/L2	1,62,740
ATLAS COPCO INDIA LTD	TURBINE GENERATOR UNIT 1 OF STAGE 1	34,88,379
ABB INDIA LTD & EMERSON PROCESS MANAGEMENT (INDIA) & HANUMAN CONSTRUCTIO	CONTROL & INSTRUMENTATION SYSTEM 120/L2	1,95,68,104
FUJI ELECTRIC CO., LTD & ANALYSER INSTRUMENT CO PVT LTD	CEMS-STACK EMISSION MONITORING	0
Freehold Land		4,17,224
ABC ENGINEERING WORKS	FLUE GAS EXHAUST BLOWER FOR ASH POND RECIRCUATION	1,49,007
Wollaque Ventilation & Conditioning	FLUE GAS EXHAUST BLOWER FOR ASH POND RECIRCUATION	1,48,000
GODREJ & BOYCE MFG CO LTD	GODREJ:STORWEL MINOR PLAIN--STMNR010:STD	96,988
GODREJ & BOYCE MFG CO LTD	TABLE:GODREJ-FINESSE ERU-LHSFUFER3616L00	35,420
G-TECH ENGINEERS	RO PLANT SAI SEVA SAMMITI	38,000
KALIN ENGINEERING WORKS	DRAGON SEARCH LIGHT	36,750
BENTLEY SYSTEMS INDIA PVT LTD	STAAD PRO SOFTWARE	21,436
SIEMENS LTD	SIEMENS MAKE 2500A&3200A LT AIR CIRUCIT BREAKERS	0

STOCK REDLER INDIA PVT LTD	VFD CONTOLLER FOR 196 NT MPC FEEDER (STG-II)	1,933
GE T&D INDIA LTD	400KV CIRCUIT BREAKERS WITH & WITHOUT PIR STAGE-I - Erection	2,04,600
SIEMENS LTD	AVR/DVR:DAVR SYSTEM	4,87,183
BTL EPC LIMITED	1400:ND PULLEY DXL 400X1600 SHAFT D100	2,55,161
ADORE CONTRACTORS PVT LTD	28% HeatSurface addition in Stg-2 Eco Co	3,65,000
BHARAT HEAVY ELECTRICALS LTD	IMPELLER FIST STAGE .44 BFP	73,650
SUJYOTI INDIA PVT LTD	BRGROLRSPRLTRSTTYPE CLASS9400/2-1/2INH	7,53,715
Clyde Pumps India Pvt Ltd	FK4E36:CARTRIDGE ASSY	15,00,000
KALI BMH SYSTEMS PVT LTD	1000:PULLEY-DXL500X1150SHAFT D100	42,400
GANESH ENTERPRISES	HAFT LIFT OIL PUMP(JACKING OIL PUMP)	63,400
CG POWER AND INDUSTRIAL	250 MVA Generator Transformer under capital spares for Main Equipment Component.	65,87,248
Indo Tech Transformers Ltd	SUPPLY,ERECTION AND COMMISSIONING OF 16MVA, 18KV/6.9 KV UNIT	9,06,200
FLOWSERVE RALEIGH	SUPPLY OF BFP DISCHARGE NRV, BFP DISCHARGE MOV, ISOLATING MOVs FOR HPHs	4,52,433
KIRLOSKAR ELECTRIC CO LTD	SUPPLY OF 180KW MOTOR FOR CHP CONVEYORS 14A2/B2 UNDER 2013-14 CAPITAL	65,000
EXIDE INDUSTRIES LTD	Supply, Erection Commissioning of Battery Bank	44,071
BIHARIJI TUBES & FITTINGS	SUPPLY OF ESP WATER VALVES FOR STAGE-II	2,42,500
HDC POWER SYSTEMS PVT LTD	Supply, Erection, Commissioning and Testing of 30 Meter and 16 Meter	0
SRINIVASA SALES AND SERVICE PVT LTD	Proc. of DIESEL ENGINE for DG SET.	71,817
BHARAT HEAVY ELECTRICALS LTD	PROCUREMENT OF ECONOMISER COILS FOR ADDITION OF 25% HEAT TRANSFER	1,90,634
HONEYWELL AUTOMATION INDIA LTD	Mandatory Spares for Stage -II DDCMIS R<(>&<)>M package.	2,93,750
GR POWER SWITCHGEAR LTD	SUPPLY AND RETROFITMENT OF ISOLATORS,	2,80,000
GANESH ENTERPRISES	CHP LT MOTORS(Make:CROMPTON GREAVES)	2,00,000
GANESH ENTERPRISES	Supply of energy efficint motors for Stage-I Ash Slurry System under EC	2,90,485
HITACHI SYSTEMS MICRO CLINIC	SUPPLY OF SERVERS FOR NTPC RAMAGUNDAM AS PER RATE CONTRACT	41,265
ANIL TRADING	SUPPLY OF GODREJ FURNITURE UNDER MBOA	0
ANIL TRADING/ GODREJ & BOYCE	PROCUREMENT OF GODREJ FURNITURE ITEMS UNDER MBOA 2016-17	1,21,602
DIVYA COMMUNICATION & CONSULTANCY	Supply of CLI telephones.	67,380
ANIL TRADING	SUPPLY OF CONFERENCE TABLES UNDER MBOA	0

S.D.S ELECTRONICS PVT.LTD	SUPPLY OF DEEP SEARCH METAL DETECTOR UNDER MBOA	45,000
MOHAN MARKETING ASSOCIATES	Supply of LAN Ethernet Tester	708
A K INDUSTRIES	Proc. of PORTABLE FIRE EXTINGUISHERS.	1,20,800
ENGINEERS ENTERPRISES	SUPPLY OF PALLET TRUCK-REG.	25,840
JCB INDIA LIMITED	SUPPLY OF JCB 30 PLUS MINI TRACKED EXCAVATOR -REG.	1,70,000
HIRAL TEKTRONIX PVT LTD.	SUPPLY OF PLANT GATE ACCESS CONTROL SYSTEM FOR CONTRACT LABOUR	1,51,115
CG POWER AND INDUSTRIAL	250 MVA Generator Transformer Main Equipment 1 No. Qty under R&M	62,52,414
FREE HOLD LAND	FREE HOLD LAND	4,17,224
HANUMAN CONSTRUCTIONS	MAIN PLANT BUILDINGS PORJECTS	2,14,848
SRI LAKSHMI ENTERPRISES	STATION UNIT TRANSFORMERS 29/L2	25,390
HONEYWELL AUTOMATION INDIA LTD	CONTROL & INSTRUMENTATION SYSTEM 120/L2	40,84,344
EMERSON PROCESS MANAGEMENT (INDIA)	CONTROL & INSTRUMENTATION TOTAL	32,83,993
FREE HOLD LAND	FREE HOLD LAND	4,17,224
HANUMAN CONSTRUCTIONS/ EMERSON PROCESS MANAGEMENT (INDIA)	CONTROL & INSTRUMENTATION TOTAL	19,32,535
THERMAX LIMITED	STEAM GENERATOR	45,41,095
SCHNEIDER ELECTRIC INFRASTRUCTURE/GE T&D INDIA LIMITED	400KV, 2000A, 40KA CIRCUIT BREAKER-400KV BAY	6,83,598
WTC ENTERPRISES PVT LTD	DIGITAL PORTABLE LEVEL METER FOR PLCC/SWITCHYARD	87,200
MACNEILL ENGINEERING LTD	BATTERY OPERATED FOUR WHEELER PLATFORM/IT	31,500
Technico India Pvt Ltd	M V W Spray System,	2,60,45,712
PRABHAT ENGG. WORKS / MRR ENGINEERING WORKS	STAGE-2 ECONOMISER COILS	8,32,655
MAHINDRA STILLER AUTO TRUCKS LTD	BATTERY OPERATED PLATFORM TRUCK 2T CAPACITY	70,752
SCHNEIDER ELECTRIC INDIA PVT	ABT SYSTEM INCL ENERGY METERS & NETWORK COMPONENTS	18,74,250
GODREJ & BOYCE MFG CO PVT LTD	CRASH RATED BOOM BARRIER SYSTEM	1,55,390
POLIXEL SECURITY SYSTEM	IP Based CCTV System in CHP, including CAMC	46,62,463
KSB MIL CONTROLS LTD	#REF!	4,768
ABB INDIA LTD	RETROFITTING<(>&<)>COMMISSIONING OF DISTANCE PROTECTION RELAYS AGAINST	51,000
ABB INDIA LTD	RETROFITTING OF ET121/21S + NSD 60/61 WITH ETL 41 + NSD 50 IN 400KV	1,32,240
ABC ENGINEERING WORKS	SHIFTING OF ADL's ALONG N2S2 DIVIDER BUND <(>&<)> ALONG WESTSIDE OF N2	89,510
CG POWER AND INDUSTRIAL SOLUTIONS	REPLACEMENT, ERECTION <(>&<)> COMMISSIONING OF 132KV CIRCUIT BREAKERS.	13,612

CG POWER AND INDUSTRIAL SOLUTIONS	REPLACEMENT, ERECTION <(>&<)> COMMISSIONING OF 220KV CIRCUIT BREAKERS.	8,66,179
DRIPLEX WATER ENGINEERING PVT LTD	Supply <(>&<)> Erection, Transportation and Insurance of Dry Fly Ash	11,70,499
EXIDE INDUSTRIES LTD	Proc. of LEAD ACID BATTERY.	6,07,500
GANESH ENTERPRISES	SUPPLY OF L T MOTORS	79,000
GANESH ENTERPRISES	SUPPLY OF CEILING FANS <(>&<)> WALL MOUNTED FANS OF ALMONARD MAKE	15,000
GODREJ & BOYCE MFG CO PVT LTD	SUPPLY OF BOOM BARRIERS.	10,000
GODREJ & BOYCE MFG CO PVT LTD	SUPPLY OF GODREJ FURNITURE-REG.	10,393
GR POWER SWITCHGEAR LTD	RETROFITMENT OF ISOLATORS,E/S AGAINST SUPPLY	45,200
Progility Technologies Pvt Ltd	Upgradation of existing Hipath version 2.0 system to version 7.0.	1,500
SRI KRANTHI BC SC LO LCCS LTD	UNIT 4<(>&<)>5 SILO AREA DEVELOPMENT WITH RCC PAVEMENT.	1,39,479
SCHNEIDER ELECTRIC INDIA PVT LTD	Retrofitting of Stage-I LT Breakers.	10,34,750
EMERSON PROCESS MANAGEMENT (INDIA)	EX-WORKS MANDATORY SPARES SUPPLY FOR DDCMIS R<(>&<)>M OF STG-1	8,20,445
PYROTECH ELECTRONICS PVT. LTD.	SUPPLY OF LED STREET LIGHT FITTINGS.	6,020
THERMAX LIMITED	PO for Insulation application Critical piping Pkg Ramagundam-Unit IV	2,17,608
LEOTRONIC SCALES PVT LTD	PROCUREMENT OF PORTABLE/MOVEABLE WEIGHBRIDGE	30,000
Godrej & Boyce Manufacturing Co Ltd	SUPPLY OF GODREJ FURNITURE-REG.	1,17,477
SCHENCK PROCESS SOLUTIONS	SUPPLY OF RETROFIT OF 196NT GRAVIMETRIC FEEDER CONTROLLER WITH DT9	3,73,824
GODREJ & BOYCE MFG CO LTD	Furniture for Jyothi Bhavan	29,896
GODREJ & BOYCE MFG CO LTD	Furniture for Godavri Bhavan	97,524
LANCO SOLAR ENERGY PVT LTD	Erection and Commissioning of 100 kW Grid connected Solar Panels.	37,200
AVNI ENERGY SOLUTIONS PVT LTD	SUPPLY OF LED STREET LIGHT FITTINGS.	66,700
SCHNEIDER ELECTRIC INFRASTRUCTURE	BBU FOR SUPPLY OF MAIN EQUIPMENT	11,25,189
GE INDIA INDUSTRIAL PVT LTD	TSI server Upgradation	33,750
HALONIX TECHNOLOGIES PVT LTD	PROCUREMENT OF LED FITTINGS.	4,68,100
GANESH ENTERPRISES	Procurement of CT motors under EC Budget	7,00,000
ENERGY EFFICIENCY SERVICES LTD	LED STREET LIGHT 120 W	30,06,307
PENTAIR VALVES AND CONTROLS INDIA	COMP ASSLY DRAIN VALVE DN 50/65 W/O ACTUATOR. STII	2,01,666
EITA INDIA LIMITED	ENCON COMPLETE CT FAN HUB ASSEMBLY STG I C TOWER	23,678
PIONEER ENTERPRISES	HFO/HSD UNLOADING PUMP	1,14,266
BRAY CONTROLS INDIA PVT LTD	400 MM BI-DIRECTIONAL KNIFE GATE VALVE COMP ASSY	71,633
DCL BULK TECHNOLOGIES PVT LTD	TELESCOPIC UNLOADING SPOUT FOR UNIT-7 SILOS	48,000
EITA INDIA LIMITED	BOOM CONVEYOR GEAR BOX	18,339

SIEMENS LTD	Numerical Motor Protection Relay: 7SJ66, SIEMENs	54,536
BHARAT HEAVY ELECTRICALS LTD	WALL SOOT BLOWER COMPL ASSBLY for stage-2 boiler	32,42,628
SCHNEIDER ELECTRIC INFRASTRUCTURE	SF-6 CIRCUIT BREAKER 33KV MG MAKE 1250A	1,72,275
ELECON ENGINEERING CO LTD	ELECON:TAKE UP PULLEY: DIA 630 X 1600	26,984
MELLCON ENGINEERS PVT LTD	REFRIGERATION TYPE HYDROGEN GAS DRIER FOR 500 MW G	1,58,556
SCHENCK PROCESS SOLUTIONS	Stock Gravimetric feeder–DT 9 controller stg-I&II	19,303
TRIDENT EQUIPMENTS PVT LTD	Boiler Drum Water Chloride Analyzer spares	2,32,000
BBS BUSINESS SOLUTIONS	220V 400AH, YKP33 Plante type Lead Acid Battery	3,01,000
NACH ENGINEERING PVT.	Transformer Oil Filteration Plant	2,22,500
CG POWER AND INDUSTRIAL SOLUTIONS	S.SCM-6.6KV:400KW:4P:B3,CACA:FR-400 Stg I	31,86,000
BHARAT HEAVY ELECTRICALS LTD	SH spray NRV Tag:S95&96 -Stg II-BMD	1,18,714
SCHENCK PROCESS SOLUTIONS	REMOTE POWER CABINET WITH DT9 MICROPROCESSOR(New)	12,17,090
Total liability		**13,86,33,381**

PART 1
FORM-T

Summary of issue involved in the petition

Name of the Company :		**NTPC Limited**
Name of the Power Station :		**Ramagundam Super Thermal power Station Stage-I & 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 Ramagundam Super Thermal Power Station Stage- I & II (2100 MW) for the period from 01.04.2019 to 31.03.2024.
3	Prayer: i) Approve tariff of Ramagundam Super Thermal Power Station Stage- I & II (2100 MW) 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	
	a.	As per Petition
	b.	
	c.	
5	**Project Scope**	
	Cost	
	Commissioning	
	Claim	
	AFC	
	Capital cost	
	Initial spare	
	NAPAF (Gen)	**85%**
	Any Specific	

ANNEX-1

GOVERNMENT OF TELANGANA
ABSTRACT

Irrigation & CAD Department – Fixation of water rate for supply of water to Industries and Power generating units from Irrigation Sources in the State – Accorded - Orders – Issued.

IRRIGATION AND CAD (REFORMS) DEPARTMENT

G.O.MS.No. 115

Dated: 27-06-2015
Read the following:

1. G.O.Ms.No.39, I&CAD(PW:QC&IWS/COD)Deptt., dt:02.04.2002
2. From the Engineer-in-Chief (Irrigation), I&CAD Dept., Hyderabad, Lr.No. ENC (I)/ DCE IV/OT- 5/AEE-18/Water Rates / 2014, dated 30.09.2014.

ORDER

*****

In the reference 1st read above, Government have issued orders regarding fixation of water rate for supply of water to Industries and Power generating units from Irrigation Sources in the State and further ordered that the enhancement of rates are to be levied as "Water Rate" to bring in imposition of the same within the competence of the State Government.

2. In the circumstances reported by the Engineer-in-Chief (Irrigation), I&CAD Department, Hyderabad in the reference 2nd read above, Government after careful examination here by re-fix the water rate for supply of water to Industries and Power generating units from Irrigation Sources in the State as follows:

Proposed Revised Rates are:

S.No.	Description	Existing Rates		Proposed Rates		Proposed Rates	
		Water rate for Non Consumptive use of water per 1000 gallons (paise)	Water rate for Consumptive use of water per 1000 gallons (paise)	Water rate for Non Consumptive use of water per 1000 gallons (paise)	Water rate for Consumptive use of water per 1000 gallons (paise)	Water rate for Non Consumptive use of water per Cum (paise)	Water rate for Consumptive use of water per Cum (paise)
1.	For all categories of Industries as defined under Industrial Development and Regulation Act and all Power generation Units, Hydel, Gas, Thermal and Naptha generation						
	a. Water drawn from Natural Sources	1.5	150	3.5	350	0.77	77
	b. Water drawn from reservoirs	3.0	300	6.5	650	1.43	143
	c. Water drawn from canals	4.5	450	9.5	950	2.09	209
2.	For Hydel generation						
	A. Major Hydro Electric Schemes	1.5		3.5	350	0.77	
	B. Mini/Small Hydel Schemes						
	a. For Unit Capacity up to 500 KW	Exempted		Exempted			
	b For Unit Capacity above 500KW and rated head upto 5 mts.						

	1.Upto 5 years from the date of Commissioning	Exempted		Exempted			
	2.After 5 years from the date of Commissioning	1.0		2.5		0.55	
	3.After 10 years from the date of Commissioning	1.5		3.5		0.77	
	c. For Unit Capacity above 500KW and rated head above 5 mts.						
	1.Upto 5 years from the date of Commissioning	1.5		3.5	350	0.77	
	2. After 5 years from the date of Commissioning	3.0		6.5	650	1.43	
	3. After 10 years from the date of Commissioning	4.5		9.5	950	2.09	

3. Government also here by order that, if the water is drawn from reservoirs and gravity canals of lift Irrigation Schemes, the HTCC charges for lifting the water and the maintenance charges of the Schemes would also have to be levied in addition to the above royalty charges based on actual expenditures incurred for the concerned Lift Irrigation Schemes.

4. Government further hereby accord permission for enhancement of the above rate @ 10% once in two financial years (i.e. every alternative year) from the date of issue of Government Orders.

5. The Engineer-in-Chief (Irrigation), Hyderabad shall take further necessary action accordingly.

6. This order issues with the concurrence of Finance (WP) Department vide their U.O.No7444/33/WP/A2/15, dt: 22-06-2015

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

Dr. SHAILENDRA KUMAR JOSHI
PRINCIPAL SECRETARY TO GOVERNMENT

TO
The Engineers-in-Chief (Irrigation), Hyderabad
The Engineer-in-Chief (IW/AW), I & CAD, Hyderabad.
The Managing Director, Telangana, Industrial Infrastructure Corporation,
The Managing Director, GENCO, Hyderabad
All Chief Engineers of I &CAD Department, Hyderabad
All District Collectors in the Telangana State
Copy to:
Revenue/Energy/MA&UD/PR&RD/Housing/Industries/Finance/Law Departments
Accountant General, Telangana, Hyderabad
All Sections in I&CAD Department
The P.S. to Hon'ble Chief Minister
The P.S. to Hon'ble Minister, Irrigation

//FORWARDED::BY ORDER//

SECTION OFFICER

ANNEX - II

रजिस्ट्री सं० डी० एल०-33004/99

REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग III—खण्ड 4
PART III—Section 4
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 211] नई दिल्ली, शुक्रवार, अगस्त 20, 2010/श्रावण 29, 1932
No. 211] NEW DELHI, FRIDAY, AUGUST 20, 2010/SHRAVANA 29, 1932

CENTRAL ELECTRICITY AUTHORITY

NOTIFICATION

New Delhi, the 20th August, 2010

No. CEA/TETD/MP/R/01/2010.—In exercise of the powers conferred by sub-section (2) of Section 177 of the Electricity Act, 2003, the Central Electricity Authority hereby makes the following regulations namely :—

1. **Short Title and Commencement.**—(1) These regulations may be called the Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, 2010.

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

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

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

(b) "Authority" means the Central Electricity Authority established under sub-section (2) of Section 70 of the Act;

(c) "Base Load Operation" means operation at maximum continuous rating (MCR) or its high fraction;

(d) "Basic Insulation Level (BIL)" means reference voltage level expressed in peak (crest) voltage with standard 1.2/50 μs lightning impulse wave. Apparatus should be capable of withstanding test wave of basic insulation level or higher;

(e) "Black Start" means the start up of a generating unit or gas turbine or internal combustion (IC) engine based generating set without use of external power following grid failure;

(f) "Boiler Maximum Continuous Rating (BMCR)" means the maximum steam output, the steam generator (boiler) can deliver continuously at rated parameters;

(g) "Break Time" means interval of time between the beginning of the opening of a switching device and the end of the arcing;

(h) "Cold Start", in relation to steam turbine, means start up after a shut down period exceeding 72 hours (turbine metal temperatures below approximately 40% of their full load values);

(i) "Combined Cycle Gas Turbine (CCGT) module" means gas turbine generator(s), associated heat recovery steam generator (s) and steam turbine generator;

(j) "Control Load", in relation to coal or lignite based thermal generating units, means the lowest load at which the rated steam temperature can be maintained under auto control system;

(k) "Design Head" means the net head at which peak efficiency of hydraulic turbine is attained while operating at rated output;

(l) "Gross Head" means the difference in elevation between the water levels of upstream reservoir and the center line of the turbine runner in case of Pelton turbine and tail race water level at the exit end of the draft tube in case of Francis and Kaplan turbine;

(m) "Gross Heat Rate", in relation to gas turbine based and IC engine based thermal generating stations, means the external heat energy input required to generate one kWh (kilo Watt hour) of electrical energy at generator terminals;

(n) "Gross Turbine Cycle Heat Rate", in relation to coal or lignite based thermal generating station, means the external heat energy input to the turbine cycle required to generate one kWh of electrical energy at generator terminals;

(o) "High Heat Value (HHV)" means the heat produced by complete combustion of one kilogram of solid fuel or liquid fuel or one standard cubic metre (Sm^3) of gaseous fuel as determined as per relevant Indian Standard (IS);

(p) "Highest System Voltage" means the highest root mean square (r.m.s.) line to line value of voltage which can be sustained under normal operating conditions at any time and at any point in the system. It excludes temporary voltage variation due to fault conditions and the sudden disconnection of the large load;

(q) "Hot Start", in relation to steam turbine, means start up after a shut down period of less than 10 hours (turbine metal temperatures approximately 80% of their full load values);

(r) "House Load" means the unit is operating in isolation to the grid and generating electric power to cater to its own auxiliaries;

(ii) The demineralized water shall be stored in minimum 2 nos. DM water storage tanks of total storage capacity equal to 24 hour Station requirement.

(e) *Waste Water Treatment System*

The waste water generated at various locations shall be segregated at the source of generation according to its type. Similar type of waste water shall be collected at one point and treated. The treated water shall be collected in central monitoring basin and recycled for plant use or disposed off complying with the requirements of MOE&F and any other stipulation of the CPCB and SPCB in this regard.

(5) **Fire detection, alarm and protection system**

(a) A comprehensive fire detection, alarm as well as fire protection system shall be installed for the Station in conformity with relevant IS. In addition, all buildings shall conform to National Building Code. Fire protection system shall be designed as per the guidelines of Tariff Advisory Committee (TAC) established under Insurance Act 1938 and /or NFPA.

(b) Automatic fire detection and alarm system shall be intelligent and addressable type and shall be provided to facilitate detection of fire at the incipient stage and give warning to the fire fighting staff.

(c) Major equipment to be used for fire detection and protection system shall be in accordance with Indian Standards or UL (Underwriters Laboratories, USA) or FM (Factory Mutuals, USA) or LPCB (Loss Prevention Certification Board, UK) or VDS (Germany).

(d) Dedicated fire water storage and pumping facilities shall be provided for the fire fighting system as per TAC guidelines. Main fire water pumps shall be electrically driven and standby pumps shall be diesel engine driven.

(e) Hydrant system, complying with TAC guidelines, shall be provided at various locations to cover the entire Station.

(f) All major and minor fire risks in the Station shall be protected against fire by suitable automatic fire protection systems. Following systems shall be generally adopted for various fire risks:

(i) Automatic high velocity water spray system, complying with TAC guidelines, shall be provided for the following areas:

(A) Transformers of rating 10 MVA and above or oil filled transformers with oil capacity of more than 2000 litres;

(B) Alternatively, these transformers may be provided with Nitrogen injection based fire protection system. The transformers of 220kV or higher voltage may preferably be provided with Nitrogen injection based fire protection system in addition to automatic high velocity water spray system;

(C) Lubricating oil systems including storage tanks, purifier units, coolers, turbine oil canal pipelines;

(D) Generator seal oil system tanks, coolers;

(E) Steam generator burner fronts.

(ii) Steam turbine bearing housing and air pre-heater shall be provided with manually actuated high velocity water spray system.

(iii) Automatic medium velocity water spray system, complying with TAC guidelines, shall be provided for the areas relating to:

(A) Cable galleries, cable vaults, cable spreader rooms, cable risers, cable shafts etc.;

(B) Coal conveyors, transfer points, crusher houses etc.;

(C) Fuel oil pumping stations;

(D) LDO and day oil tanks;

(E) DG set building.

(iv) Automatic foam system shall be provided for fuel oil storage tanks as per NFPA guidelines.

(v) Automatic inert gas flooding system, comprising of 2x100% inert gas cylinder batteries and conforming to NFPA, shall be provided for Unit control rooms, control equipment rooms and area above false ceiling of these rooms.

(g) Portable fire extinguishers as per TAC guidelines shall be provided for each room/area of power station in addition to fixed fire protection system to extinguish fire in its early phase to prevent its spread.

(h) Fire station and fire tenders alongwith trained staff shall also be provided for the Station.

(i) Passive fire protection measures such as fire barriers for cable galleries and shafts etc., fire retardant coatings, fire resistant penetration sealing for all openings in floors, ceilings, walls etc., fire proof doors etc. shall be provided to prevent spreading and for containment of fire.

CENTRAL ELECTRICITY AUTHORITY

NOTIFICATION

New Delhi, the 24th, January, 2010

F.No. CEA/TETD/MP/R/02/2011.—In exercise of the powers conferred by section 177 read with clause (c) of section 73 of the Electricity Act, 2003 (36 of 2003), the Central Electricity Authority hereby makes the following regulations, namely:-

1. Short title and commencement.- (1) These regulations may be called the Central Electricity Authority (Safety Requirements for Construction, Operation and Maintenance of Electrical Plants and Electric Lines) Regulations, 2011.

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

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

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

(b) "contractor" means a person or an agency who undertakes to produce a given result, not merely supply of goods or articles of manufacture but including civil works or erection of equipment or testing and commissioning of equipment or operation and maintenance of equipment and includes a sub-contractor;

(c) "Owner" means a company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person, which owns or operates or maintains electrical plants or electric lines and includes,-

(i) "Occupier" as defined in the Factories Act, 1948 (63 of 1948);

(ii) "Employer" as defined in the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 (27 of 1996).

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

3. Regulations not in derogation of any other law.- The provisions of these regulations shall be in addition to and not in derogation of the provisions of any other law for the time being in force.

4. Safety provisions relating to Owner.- (1) The Owner shall make safety an integral part of work processes to ensure safety for employees including employees of contractor, sub-contractor as well as visitors.

(2) The Owner shall obtain accreditation of electric plants and electric lines with IS-18001 certification.

(3) The Owner shall obtain above mentioned certification for all the existing electrical plants and electric lines and those under construction within two years from the date of coming into force of these regulations and for new installations within two years from the date of commencement of construction.

(4) The Owner shall set up a sound and scientific safety management system which shall include,-

(a) formulation of a written statement of policy in respect of safety and health of employees;

(b) defining and documenting responsibilities for all levels of functionaries to carry out safety related activities including responsibilities of the contractors;

(c) preparing detailed safety manual complying with the statutory requirements and manufacturers' recommendations;

(d) establishing procedures to identify hazards that could give rise to the potential of injury, health impairment or death and measures to control impact of such hazards;

(e) providing adequate human, physical and financial resources to implement the safety management system;

5. Tower top patrolling;

6. Thermo vision scanning;

7. Punctured insulator detection;

8. Off-line fault location, signature analysis;

9. Maintenance schedule of electric lines;

10. Safety in washing of live insulators and testing of insulators on live lines;

11. Hot line maintenance;

12. Safety in working in underground systems.

Schedule- III
[See regulation 9(2)]

Elements of on-site emergency management plan for electrical plants and electric lines

1. On-site emergency management plan shall be developed to deal with all probable emergencies which can occur at the premises such as:

(A) Common to all electrical plants:

(a) Major fire in cable gallery;

(b) Major fire in transformer yard.

(B) Specific to thermal generating stations:

(a) Fire in coal handling and conveyor system;

(b) Toxic gas dispersion caused by uncontrolled chlorine toner leakage;

(c) Major leakage in natural gas pipelines (e.g. full bore rupture of gas pipe line) resulting in unconfined natural gas leakage leading to vapour cloud explosion and fire;

(d) Major hydrogen gas leakage from generator leading emergency situation that can lead to fire and explosion;

(e) Boiler drum burst;

(f) Implosion or explosion of boiler furnace;

(g) Large scale fire in fuel oil area, coal storage, naphtha or liquefied natural gas storage area.

(C) Specific to hydro-electric generating stations:

(a) Flooding of powerhouse;

(b) Landslides.

2. On-site emergency management plan shall include the following:-

(a) Name and address of the Chief Incident Controller;

(b) Alarm system and method of reporting and declaring emergency;

(c) Emergency response procedure including response to off-site emergency management plan and crisis and disaster management plan;

(d) Details of the key employees of the emergency team and their responsibilities;

(e) Addresses and contact numbers of local administration, police, hospitals, involved in assisting during emergency;

(f) Risk assessment information giving possible nature of incidents and events giving rise to emergency conditions, risk analysis and impact assessment;

(g) Details about the site:

(i) Locations where emergency may arise;

(ii) Emergency control room and alternate emergency control room;

(iii) Demarcation of safe assembly zone relevant to each type of emergency condition;

(h) Description of hazardous chemicals and fuels at plant site:

(i) Chemicals (quantities and toxicological data);

(ii) Fuels (quantities and storage type);

(iii) Material safety data sheets;

(i) Internal and external communication plan during emergency;

(j) Details of fire fighting and other facilities available to deal with emergency conditions;

(k) Details of first aid and hospital services available and their adequacy;

(l) Post emergency activities:

(i) Collection of records;

(ii) Conducting enquiries and concluding preventive measures;

(iii) Making insurance claims;

(iv) Preparation of enquiry report and suggestion scheme;

(v) Implementation of enquiry report recommendations;

(vi) Rehabilitation of affected persons within plant;

(vii) To re-start the plant.

AMARJEET SINGH, Secy.

[ADVT. III/4/150/10/Exty.]

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

ANNEX – III

THE OZONE DEPLETING SUBSTANCES (REGULATION AND CONTROL) RULES, 2000

MINISTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 19th July, 2000

*S.O.670(E).___Whereas the draft Ozone Depleting Substances (Regulation)Rules,2000 were published, under the notification of the Government of India in the Ministry of Environment & Forests number S.O.69(E), dated, the 25th January,2000, in the Gazette of India, Extra-ordinary, Part-II, Section 3, sub-section(ii) at pages 39-96 on the same date, inviting objections and suggestions from all persons likely to be affected thereby, before the expiry of the period of forty-five days from the date on which the copies of the Gazette containing the said notification are made available to the public;

And whereas copies of the said Gazette were made available to the public on 26.01.2000;

And whereas the objections and suggestions received from the public in respect of the said draft rules have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sections 6,8 and 25 of the Environment (Protection) Act, 1986, the Central Government hereby makes the following rules for regulating ozone depleting substances, namely: -

1. SHORT TITLE AND COMMENCEMENT.-

(1) These rules may be called the **Ozone Depleting Substances (Regulation and Control) Rules, 2000.**

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

2. DEFINITIONS.-

In these rules unless the context otherwise requires,-

(a) "Act" means the Environment (Protection)Act,1986 (29 of 1986);

(b) "authority" means an authority mentioned in columns (4) and (6) of Schedule V;

(c) "base level" means the quantity of ozone depleting substance produced or consumed, as the case may be, in the year or average of the years listed in column (3) of Schedule II and Schedule III;

---

* As published in Govt. of India Gazette vide S.O. 670 (E), dated 19.07.2000.

(d) "consumption" with respect to any ozone depleting substance means the amount of that substance produced in India in addition to the amount imported, less the amount exported;

(e) "calculated level of production, sale, import or export", as the case may be, means level determined by multiplying quantity of the ozone depleting substance by its ozone depleting potential specified in column (5) of Schedule I;

(f) "calculated level of consumption" shall be determined by adding together calculated levels of production and imports and subtracting calculated level of exports;

(g) "Group" means collection of one or more ozone depleting substances as specified in column (4) of Schedule I;

(h) "manufacture" in relation to any ozone depleting substance includes-

(i) any process or part of a process for making, altering, finishing, packing, labeling, blending or otherwise treating or any ozone depleting substance with a view to sell, distribute or use but does not include the repacking or breaking up of any ozone depleting substance in the ordinary course of retail business; and

(ii) any process in which a preparation containing ozone depleting substance is formulated ;

(i) "ozone depleting substance" means the ozone depleting substances specified in column(2) of Schedule I, whether existing by itself or in a mixture, excluding any such substance or mixture (blend) which is in a manufactured product other than a container used for the transportation or storage of such substance;

(j) "parties" means, unless the text otherwise indicates, parties to the protocol;

(k) "pre-shipment applications" are those treatments applied directly preceding and in relation to export, to meet the phytosanitary or sanitary requirements of the importing country or existing phytosanitary or sanitary requirements of the exporting country;

(l) "production" in relation to any ozone depleting substance means the manufacture of an ozone depleting substance from any raw material or feedback chemicals, but does not include-

(i) the manufacture of a substance that is used and entirely consumed (except for trace quantity) in the manufacture of other chemicals; or

(ii) quantities which are produced incidentally in the manufacture of other chemical substances; or

(iii) quantities which are recycled or reused; or

(iv) quantities which are destroyed by technologies to be specified by the Central Government;

(m) "protocol" means the Montreal Protocol On Substances That Deplete The Ozone Layer, adopted on 16th September 1987;

(n) "quarantine applications", with respect to Group VIII of Schedule I ozone depleting substance, are treatments to prevent the introduction, establishment and or spread of quarantine pests (including diseases), or to ensure their control as specified by the Central Government;

(o) "recovery" means collection and storage of ozone depleting substances from machinery, equipment, or containment vessel during servicing or prior to disposal;

(p) "reclamation" means reprocessing and upgrading of a recovered ozone depleting substance through such methods as filtering, drying, distillation and, or chemical treatment in order to restore the substance to a specified standard of performance.

(q) "schedule" means a schedule annexed to these rules.

3. REGULATION OF PRODUCTION AND CONSUMPTION OF OZONE DEPLETING SUBSTANCES.-

(1) No person shall produce or cause to produce any ozone depleting substance after the date specified in column (5) of Schedule V unless he is registered with the authority specified in column (4) of that Schedule:

Provided that for the twelve month period commencing on the date specified in column (6) of Schedule II, and in each twelve month period thereafter, no person shall produce or cause to be produced any group of ozone depleting substances in excess of the corresponding percentage of his calculated base level of production specified in column (4) of that Schedule:

Provided further that calculated level of consumption of such substances in India shall, as a percentage of calculated level of consumption in base years does not exceed the number specified in column (5) of Schedule II.

(2) No person shall produce or cause to produce ozone depleting substances specified as Group I and Group III in column (4) of Schedule I during the period from 1, August, 2000 to 1st January, 2010 in excess of the quantity specified in column (4) of Schedule III and the calculated level of consumption of such substances in India shall as a percentage of calculated level of consumption in base year does not exceed the number specified in column (5) of that Schedule.

(3) A person having received financial assistance from the Multilateral Fund in accordance with article 10 and 10 A of the protocol to which the Central Government is a party for gradual reduction of production of ozone depleting substances specified as Group I and Group III in column (4) of Schedule I shall, limit the production of ozone depleting substances as specified in Group I and Group III in column (4) of Schedule I in each year from 1st August, 2000 to January 1, 2010 to quantities specified in column (4) for each year given in column (6) of Schedule III as per the agreement approved, by the Executive Committee of the Multilateral Fund.

(4) In order to implement the agreement, referred to in sub-rule (3), the Central Government shall introduce implementation modalities, such as, quota system for producing Chlorofluorocarbons and the non-compliance with such modalities shall result in consequential penalties laid out in the agreement.

4. PROHIBITION ON EXPORT TO OR IMPORT FROM COUNTRIES NOT SPECIFIED IN SCHEDULE VI.-

No person shall import or cause to import from or export or cause to export to any country not specified in Schedule VI any ozone depleting substance after the commencement of these rules.

5. OZONE DEPLETING SUBSTANCES ARE TO BE EXPORTED TO OR IMPORTED FROM COUNTRIES SPECIFIED IN SCHEDULE VI UNDER A LICENCE.-

(1) No person shall import or cause to import from or export or cause to export to, any country specified in Schedule VI, any ozone depleting substance unless he obtains a licence issued by the authority.

(2) No licence shall be issued under sub-rule (1) 7 unless the said authority is satisfied that the grant of licence shall not cause calculated level of consumption of that group of ozone depleting substances (except Group I and Group III given in column (4) of schedule I in the relevant twelve month period, as a percentage of corresponding calculated consumption in base years, to exceed the number specified in column (5) of Schedule II.

(3) No licence shall be issued under sub-rule (1) unless the said authority is satisfied that the grant of licence shall not cause calculated level of consumption of ozone depleting substance given in Group I and III in column (4) of Schedule I in the relevant twelve months period as specified in column (6) of Schedule III, as a percentage of calculated consumption in base years to exceed the number specified in column (5) of that Schedule.

(4) The calculated base level of consumption and the calculated base level of production for India as a whole for each group of ozone depleting substances shall be notified by the Central Government.

6. REGULATION OF THE SALE OF OZONE DEPLETING SUBSTANCES.-

(1) No person shall either himself or by any other person on his behalf or enterprise sell, stock or exhibit for sale or distribute any ozone depleting substance after the date specified in column (5) of Schedule V unless he is registered with the authority specified in column (4) of that Schedule.

Provided that no person or enterprise shall sell ozone depleting substances specified in column (3) of Schedule IV for activities specified in column (2) of that Schedule unless the person engaged in that activity has got himself registered with the authority and have given a declaration in accordance with these rules and the person selling ozone depleting substances has verified particulars of the registration given in the declaration with the certificate of registration as per procedure specified in Part II of Schedule XII :

Provided further that after the date specified in column (4) of Schedule IV, no person or enterprise shall sell, stock, distribute or exhibit or cause to be sold, stocked, distributed or exhibited ozone depleting substances specified in column (3)for activities specified in column (2) of that Schedule.

(2) No person shall either himself or by any person on his behalf, or enterprise sell, stock or exhibit for sale or distribute any ozone depleting substance to any person or enterprise who has informed the Central Government that he or that enterprise shall not use the specified ozone depleting substances in manufacturing or other activities after the date specified by such person or as the case may be, the enterprise.

(3) The Central Government shall notify the list of persons, ozone depleting substances and dates informed to it under sub-rule(2).

7. REGULATION ON THE PURCHASE OF OZONE DEPLETING SUBSTANCES.-

No person shall himself or by any person on his behalf or enterprise, purchase ozone depleting substances specified in column (3) of Schedule IV from any person for making stock or for using such ozone depleting substances for activities specified in column (2) of that Schedule unless he has given the declaration specified in Part I of Schedule XII to the seller of such substances within the time period specified in Serial number 4 of column (5) of Schedule V.

8. REGULATION ON THE USE OF OZONE DEPLETING SUBSTANCE.-

(1) No person or enterprise shall engage in any activity specified in column (2) of Schedule IV that uses ozone depleting substances specified in column (3) of that Schedule after the date specified in column (5) of Schedule V unless he is registered with the authority specified in column (4) of that Schedule.

(2) No person shall engage in any activity specified in column (2) of Schedule IV using ozone depleting substances specified in column (3) of that Schedule after the date specified in column (5) of Schedule V unless the products are labeled to indicate the ozone depleting substances they contain.

(3) No person shall engage in any activity specified in column (2) of Schedule IV using ozone depleting substances specified in column (3) after the date specified in column (4) of that Schedule.

(4) No person shall engage in any activity specified in column (2) of Schedule IV without using label indicating absence of use of ozone depleting substance mentioned in column (3) after the date specified in column (4) of that Schedule.

(5) A person, having received financial and technical assistance from the Multilateral Fund in accordance with the Article 10 and 10 A of the Montreal Protocol On Substances That Deplete The Ozone Layer, to which the Central Government is a Party for phasing out of ozone depleting substances specified in column (2) the Schedule II used in activities specified in Column (2) of Schedule IV, either himself or by any person on his behalf or through any enterprise, shall not engage in such activity as specified in column (2) of Schedule IV using ozone depleting substances specified in column (3) of the Schedule, after the date of completion of the conversion work or signing of the Handing Over Protocol, or the submission of the completion report to change from ozone depleting substance technology to non ozone depleting substance technology and the said date be registered with the authority specified in column (4) of the Schedule IV.

(6) Any person or enterprise having received, financial assistance from the Multilateral Fund in accordance with the Article 10 and 10 A of Montreal Protocol On Substances That Deplete The Ozone Layer shall submit an affidavit or declaration with the authority specified in column (4) of Schedule V stating that replaced equipment, resulted from completion of conversion process from ozone depleting substance technology to no ozone depleting substance technology, have been destroyed, dismantled, rendered unusable and that no ozone depleting substance should be used after the date of completion of project and the said date be registered with the authority specified in the column (4) of the Schedule V.

9. PROHIBITION ON NEW INVESTMENT WITH OZONE DEPLETING SUBSTANCES.-

(1) No Prohibition on person shall establish or expand or cause to establish or expand any manufacturing facility for production of any ozone depleting substance after the date specified in column (7) of Schedule II and III.

(2) No person shall establish or expand or cause to establish or expand any manufacturing facility, with a view to manufacturing products which contain, or are made with, any ozone depleting substance after the date specified in column (8) of Schedule II & III.

(3) A person having received financial and technical assistance from the Multilateral Fund in accordance with the Article 10 and 10A of the Montreal Protocol On Substances That Deplete The Ozone Layer for phasing out of ozone depleting substances specified in column (2) of Schedule II used in activities specified in column (2) of Schedule IV to which the Central Government is a Party, shall not establish or expand or cause to establish or expand the manufacturing facility for production of any ozone depleting substances or with a view of manufacturing products which contain or are made with any ozone depleting substances after the approval of the project for conversion and date of completion of the conversion work from the ozone depleting substance technology to non ozone depleting substance technology.

10. REGULATION OF IMPORT, EXPORT AND SALE OF PRODUCTS MADE WITH OR CONTAINING OZONE DEPLETING SUBSTANCES.-

(1) No person shall import or cause to import any product specified in column (2) of Schedule VII which are made with or contain ozone depleting substances specified in column (3) after the date specified in column (4) of that Schedule unless he obtains a license issued by the authority:

Provided that such products which do not contain such ozone depleting substances shall carry a label to that effect before its import is allowed after the date specified in Column 4 of Schedule VII.

(2) No person or enterprise shall export or cause to export any product specified in column (2) of Schedule VII unless such product carries a label specifying whether or not the product has been made with or contains, as the case may be, ozone depleting substances specified in column (3) of that Schedule, after the date specified in column (5) of that Schedule.

(3) No person shall either himself or by any other person or enterprise on his behalf sell, stock or exhibit for sale or distribute any product resulting out of activities, or provide services, specified in column (2) of Schedule IV using ozone depleting substances specified in column (3) after the date specified in column (4) of that Schedule.

11. REGULATION ON RECLAMATION AND DESTRUCTION OF OZONE DEPLETING SUBSTANCES.-

(1) No person shall reclaim or cause to reclaim any ozone depleting substance after the date specified in column (5) of Schedule V unless he has registered with the authority specified in column (4) of that Schedule.

(2) No person shall destroy or cause to destroy any ozone depleting substance after the date specified in column (5) of Schedule V unless he has registered with the authority specified in column (4) of that Schedule.

12. REGULATION ON MANUFACTURE, IMPORT AND EXPORT OF COMPRESSORS.-

(1)No person shall manufacture, import or export compressors after the date specified in column (5) of Schedule V unless he is registered with the authority specified in column (4) of that Schedule.

13. PROCEDURE FOR REGISTRATION, CANCELLATION OR REGISTRATION AND APPEAL AGAINST SUCH ORDERS.-

(1) The procedure for registration and conditions of registration under various provisions of these rules shall be as specified in Schedule IX.

(2) The registering authority shall not register if he is not satisfied that the procedure for registration or conditions of registration are fulfilled.

(3) The registering authority shall cancel the registration if he is satisfied that condition(s) of registration have been violated.

(4) The registering authority shall give the concerned person an opportunity of being heard before passing orders under sub-rules (2) and (3) and the orders shall be made in writing.

(5) An appeal against an order of the registering authority shall lie with the authority specified in column (6) of Schedule V within thirty days of communication of such order.

(6) The registration shall be valid for the period specified in Schedule IX and its renewal shall be necessary.

(7) The procedure for and conditions of renewal of registration shall be the same as applicable to registration.

14. MONITORING AND REPORTING REQUIREMENTS.-

(1)Every person who produces, imports, exports or sells any ozone depleting substances shall maintain records and file reports in the manner specified in Part I of Schedule X.

(2) Every person stocking or purchasing any ozone depleting substances for use in activities specified in column (2) of Schedule IV shall maintain records and file reports in the manner specified in Part II or Schedule X.

(3) Every person who has received technical or financial assistance from any international organization or any financial assistance, which includes concession or exemption from payment of duties, from the Central Government, shall maintain records and file reports in the manner specified in Part III of Schedule X of the list of such persons shall be notified by the Central Government.

(4) Every person who has facility to reclaim on an ozone depleting substance shall maintain record and file reports in the manner specified in Part IV of Schedule X.

(5) Every person who has facility to destroy any ozone depleting substance shall maintain records and file reports in the manner specified in Part V of Schedule X.

(6) Every person who manufactures, imports, exports or sells compressors shall maintain records and file reports in the manner specified in Part VI Schedule X.

(7) The records maintained in accordance with the above sub-rules shall be made available for inspection as specified in Part VII of Schedule X.

15. EXEMPTION. –

(1) Nothing contained in these rules shall apply to applications or circumstances specified in Schedule VIII.

SCHEDULE – I

[See rule 2(e), (n), 3(2) and (3), 5(3)]

List of ozone depleting substances

S. No.	Name of Ozone Depleting Substances	Chemical Composition of Ozone Depleting Substances	Group	Ozone Depleting Potential
(1)	(2)	(3)	(4)	(5)
1.	CFC-11	Trichlorofluoromethane ($CFCl_3$)	I	1.0
2.	CFC-12	Dichlorodifluromethane (CF_2Cl_2	I	1.0
3.	CFC-113	Trichlorotrifluoroethane ($C_2F_3Cl_3$)	I	0.8
4.	CFC-114	Dichlorotetrafluoroethane ($C_2F_4Cl_2$)	I	1.0
5.	CFC-115	Chloropentafluoroethene (C_2F_5Cl)	I	0.6
6.	Halon –1211	Bromochlorodifluoromethane CF_2BrCl)	II	3.0
7.	Halon – 1301	Bromotrifluoromethane (CF_3Br)	II	10.0
8.	Halon – 2402	Dibromotetrafluoroethane ($C_2F_4Br_2$)	II	6.0
9.	CFC-13	Chlorotrifluoromethane (CF_3Cl)	III	1.0
10.	CFC-111	Pentachlorofluoroethane (C_2FCl_5)	III	1.0
11.	CFC -112	Tetrachlordifluoroethane ($C_2F_2Cl_4$)	III	1.0
12.	CFC-211	Heptachlorofluoropropane (C_3FCl_7)	III	1.0
13.	CFC-212	Hexachlorodifluoropropane ($C_3F_2Cl_6$)	III	1.0
14.	CFC-213	Pentachlorotrifluropropane ($C_3F_3Cl_5$)	III	1.0
15.	CFC-214	Tetrachlorotetrafluoropropane ($C_3F_4C_4$)	III	1.0
16.	CFC-215	Trichloropentafluoropropane ($C_3F_5Cl_3$)	III	1.0
17.	CFC-216	Dichlorophexafluoropropane ($C_3F_6Cl_2$)	III	1.0
18.	CFC-217	Chloroheptafluoropropane (C_3F_7Cl)	III	1.0
19.	Carbon tetrachloride	Tetrachloromethane (CCl_4)	IV	1.1
20.	Methyl chloroform	1,1,1-Trichloroethane ($C_2H_3Cl_3$)	V	0.1
21.	HCFC-21	Dichlorofluoromethane ($CHFC1_2$)	VI	0.04
22.	HCFC-22	Dichlorodifluromethane (CHF_2CI_2)	VI	0.055

SCHEDULE-IV

[See rule 6(1),7,8(1),(2),(3),(4) and (5),9(3),10(3)]

Regulation on consumption of ozone depleting substances on end use basis

S.No.	Name of Activities	Name of Group of Ozone Depleting Substances	Phaseout Date*
(1)	(2)	(3)	(4)
1.	Manufacture of Aerosol products or pressurized dispensers (excluding metered dose inhalers for medicinal purpose)	Group I	1-1-2003
2.	Manufacture of Polyol for foam products	Group I	1-1-2003
3.	Manufacture of foam products including foam part of Domestic Refrigerator	Group I	1-1-2003
4.	Manufacture of Fire Extinguishers or Fire Extinguishing Systems	Group II	1-1-2001**
5.	Manufacture of Mobile Air-Conditioners and charging at Automobile industry	Group I	1-1-2003
6.	Manufacture of other Refrigeration and Air-conditioning products (excluding compressors)	Group I	1-1-2003
7.	Manufacture of different products	Group I,III, IV & V	1-1-2010
8.	Servicing of fire extinguishers and fire extinguishing systems	Group II	1-1-2010**
9.	Manufacture of Metered Dose inhalers for medicinal purposes	Group I	1-1-2010
10.	Manufacture of different products	Group VI	1-1-2040
11.	Use of methyl bromide except preshipment & quarantine	Group VII	1-1-2015

* The phaseout date for person or enterprise who has received financial assistance for switching over to non ozone depleting substance technology or to establish or to expand new capacity with non ozone depleting technology is the date of completion of the conversion project or the date given in column (4) of Schedule IV which ever is earlier.

** Except for essential use certified by the essential use panel.

ANNEX-IV

REPORT

BUTTRESSING AND D/S RAISING OF DYKES OF LAGOONS OF N1, S1, N2, S2 OF RSTPS, NTPC LTD. RAMAGUNDAM TELENGANA

1.0 INTRODUCTION & SUMMARY

1.1 Background

Ramagundam Super Thermal Power Station, NTPC Limited, Ramagundam, Telangana (RSTPS) awarded a consultancy project to Dr. C. R. Patra, Professor, Civil Engineering Department, National Institute of Technology Rourkela as the Principal Consultant in association with expert Consultant Dr. Umesh Dayal, Professor (Retired), Indian Institute of Technology Kanpur for buttressing and enhancing the ash storage capacity of the existing Lagoons N1, N2, and S1, S2 vide NTPC PO No. 5500020065-026-1033 dated 02.06.2015. Along with the buttressing, the adjoining land of 155 acres area shall be developed for the ash disposal system, integrating with existing N1, S1, N2 and S2 Lagoons.

RSTPS owns and operates a thermal power plant of 2600 MW which was originally commissioned in the year 1983. Presently it generates about 5 million tons of ash per year by burning of coal out of which about 3 million tons per year are dumped in to the ash pond and the remaining ash is being utilized. The ash is deposited in the form of land fill in the ash ponds by pumping ash slurry in wet form (ash water ratio 1:10 appx.). The total area of the ash disposal pond is approximately 1500 acres which is divided in to four Lagoons namely N_1, S_1, N_2, and S_2 as shown in Figure 1. Natural ground levels (NGL) of lagoons N_2 and S_2 are lower than N_1 and S_1. The Lagoons N_2, S_2 are surrounded by hills on its two sides (North and South sides). The Lagoons N_1, S_1 lie on the west side of N_2, S_2. On the east side of N_2, S_2 a high embankment of starter dyke was constructed and then it has been raised in several stages by upstream method of construction. The natural terrain is sloping in the direction of N_1, S_1 to N_2, S_2.

This report deals with strengthening, buttressing and raisings of dykes of Lagoons N1, N2, S1, and S2. About 155 acres of vacant land exists adjoining western boundary of Lagoons N1 and S1 which shall also be integrated in the ash disposal plan of Lagoons N1, N2, S1, and S2. It is proposed to build a new dyke to develop a lagoon on the adjoining area of 155 acres which would finally be integrated with Lagoons N1, N2, S1, and S2.

It is proposed to raise the existing Dyke by constructing a Peripheral Buttressing Dyke from the D/S of the toe of the Starter Dyke where sufficient space is available for D/S raising and where there is no space available the buttressing will start above the existing Starter Dyke. The Down-Stream Method of construction, in addition to creating additional capacity for ash disposal strengthens the existing dyke if it is judiciously designed and constructed. The D/S buttressing is to be provided up to existing elevation of 201.5m for dykes of Lagoons N1 & S1 and up to existing elevation 197m for dykes of Lagoons N2 & S2. Simultaneously, the proposed dyke of 155 acres will be integrated into the existing Lagoons.. After buttressing is done, the dyke shall be raised by Down Stream Method (D/S) of construction up to El. 208m in multiple stages. The proposed scheme will enhance the life of the existing Lagoons to several years. This report provides design and necessary construction guidelines for strengthening, buttressing and then D/S peripheral dyke raisings of Lagoons N1, N2, S1, S2 and the adjoining area of 155 acres.

This report consists of three parts of design namely part 1 (Design and planning of a new lagoon called SW1 over the adjoining area of 155 acres land), part 2 (Strengthening, Buttressing and D/S raising of existing Lagoons N1, S1, N2, S2, and adjoining155 acres land).