

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 292/GT/2014

Coram:

**Shri. Gireesh B. Pradhan, Chairman
Shri A.K.Singhal, Member
Dr. M. K. Iyer, Member**

**Date of Hearing: 19.04.2016
Date of Order : 24.01.2017**

In the matter of

Approval of tariff of Ramagundam Super Thermal Power Station Stage-I & II (2100 MW) for the period from 1.4.2014 to 31.3.2019

And in the matter of

NTPC Ltd
NTPC Bhawan,
Core-7, SCOPE Complex,
7, Institutional Area, Lodhi Road,
New Delhi-110003)

.....Petitioner

Vs

1. AP Eastern Power Distribution Company Ltd.
Corporate Office, P&T Colony, Seethammadhara,
Visakhapatnam – 530 013 - (AP)
2. AP Southern Power Distribution Company Ltd.
Back Side Srinivasa Kalyana Mandapam
Tiruchhanur Road, Kesavayana Gunta,
Tirupathi – 517 503 (AP)
3. Telangana State Northern Power Distribution Company Ltd.
formerly Andhra Pradesh Northern Power Distribution Company Ltd.
H.No. 2-5-31/2 Vidyut Bhavan, Nakkalagutta,
Hanamkonda Warangal – 506 001
4. Telangana State Southern Power Distribution Company Ltd.
formerly AP Central Power Distribution Company Ltd.
Mint Compound, Corporate Office
Hyderabad – 500 063.
5. Bangalore Electricity Supply Company Ltd.
Krishna Rajendra Circle
Bangalore – 560 001.



6. -Mangalore Electricity Supply Company Ltd .
Paradigm Plaza, A.B. Shetty Circle, Pandeshwar, Mangalore – 575 001.
7. Chamundeshwari Electricity Supply Corp. Ltd.
Corporate Office, No. 927, L.J.Avenue,
New Kantharaj Urs Road, Saraswathipuram
Mysore – 570 009.
8. Gulbarga Electricity Supply Company Ltd.
Main road, Gulbarga, 585 102,Karnataka.
9. Hubli Electricity Supply Company Ltd.
Corporate office,
P.B.Road, Navanagar, Hubli – 580 025.
10. Kerala State Electricity Board Ltd.
Vaidyuthi Bhavanam,
Pattom Thiruvananthapuram – 695 004.
11. Tamil Nadu Generation & Distribution Corporation Ltd.
7th Floor ,NPKRR Maligai,
144, Anna Salai, Chennai – 600 002.
12. Electricity Department Govt. of Puducherry
137, NSC Bose Salai, Puducherry – 605 001
13. Electricity Department Government of Goa
Vidyut Bhavan, 3rd Floor
Panaji, GOA – 403 001

....Respondents

Parties present:

For Petitioner: Shri Ajay Dua, NTPC
 Shri Nishant Gupta, NTPC
 Shri Bhupinder Kumar, NTPC
 Shri Rajeev Choudhary, NTPC
 Shri V.K. Garg, NTPC
 Shri Rohit Chhabra, NTPC

For Respondents: Shri S. Vallinayagam, Advocate, TANGEDCO

ORDER

This petition has been filed by the petitioner, NTPC for approval of tariff of Ramagundam Super Thermal Power Station Stage-I & II (3X200 MW + 3X500 MW) (hereinafter referred to as “the generating station”) for the period 2014-19 in accordance with the provisions of the Central



Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (herein after referred to as “the 2014 Tariff Regulations”).

2. The generating station with a capacity of 2100 MW comprises of three units of 200 MW and three units of 500 MW. The dates of commercial operation of the different units of the generating station are as under:

| Units | Dates of commercial operation |
|-------------------------------------|-------------------------------|
| Unit-I | 1.3.1984 |
| Unit-II | 1.11.1984 |
| Unit-III | 1.5.1985 |
| Unit-IV | 1.11.1988 |
| Unit-V | 1.9.1989 |
| Unit-VI / Generating Station | 1.4.1991 |

3. The Commission vide order dated 27.6.2016 in Petition No. 217/GT/2014 had revised the tariff of the generating station for the period 2009-14 after truing-up of the additional capital expenditure in terms of Regulation 6 (1) of the 2009 Tariff Regulations , considering the capital cost of ₹230569.84 lakh as on 31.3.2014. The annual fixed charges approved by the order dated 27.6.2016 is as under:

| | (₹ in lakh) | | | | |
|-----------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | 2009-10 | 2010-11 | 2011-12 | 2012-13 | 2013-14 |
| Depreciation | 0.00 | 0.00 | 48.13 | 617.59 | 2396.41 |
| Interest on Loan | 129.77 | 131.45 | 141.49 | 217.94 | 259.47 |
| Return on Equity | 26779.77 | 26377.87 | 26030.91 | 26097.13 | 26837.67 |
| Interest on Working Capital | 10345.41 | 10458.29 | 10604.34 | 10710.74 | 10884.15 |
| O&M Expenses | 30420.00 | 32154.00 | 33999.00 | 35946.00 | 38004.00 |
| Cost of Secondary Fuel Oil | 3199.93 | 3199.93 | 3208.70 | 3199.93 | 3199.93 |
| Compensation Allowance | 935.00 | 955.00 | 975.00 | 975.00 | 975.00 |
| Special Allowance | 1000.00 | 2114.40 | 3353.02 | 3544.81 | 3747.57 |
| Total | 72809.88 | 75390.95 | 78360.58 | 81309.13 | 86304.20 |

4. The petitioner vide affidavit dated on 11.8.2014 has filed this petition for approval of tariff of the generating station in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner for the period 2014-19 are as under:



Capital Cost

(₹ in lakh)

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|
| Opening Capital Cost | 231355.07 | 234248.00 | 234455.00 | 236770.00 | 237070.00 |
| Add: Additional capital expenditure | 2892.93 | 207.00 | 2315.00 | 300.00 | 2257.00 |
| Closing Capital Cost | 234248.00 | 234455.00 | 236770.00 | 237070.00 | 239327.00 |
| Average Capital Cost | 232801.54 | 234351.50 | 235612.50 | 236920.00 | 238198.50 |

Annual Fixed Charges

(₹ in lakh)

| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|-----------------------------|-----------------|-----------------|------------------|------------------|------------------|
| Depreciation | 1206.93 | 158.21 | 224.79 | 293.83 | 361.33 |
| Interest on Loan | 240.76 | 282.86 | 355.15 | 425.25 | 485.12 |
| Return on Equity | 23487.10 | 23581.86 | 23658.95 | 23738.88 | 23817.05 |
| Interest on Working Capital | 15642.68 | 15777.19 | 15947.33 | 16128.16 | 16319.70 |
| O&M Expenses | 39712.23 | 42214.37 | 44872.04 | 47700.59 | 50706.40 |
| Compensation Allowance | 1000.00 | 500.00 | 0.00 | 0.00 | 0.00 |
| Special Allowance | 7735.54 | 12214.87 | 17231.89 | 18326.11 | 19489.82 |
| Total | 89025.24 | 94729.36 | 102290.15 | 106612.83 | 111179.42 |

5. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies on the respondents. The respondents, KSEB, TANGEDCO have filed their replies and the petitioner has filed its rejoinder to the same. We now proceed to examine the claim of the petitioner based on the submissions of the parties and the documents available on record as discussed in the subsequent paragraphs.

Capital Cost as on 1.4.2014

6. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

“The Capital cost of an existing project shall include the following:

(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;

(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and

(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”



7. The annual fixed charges claimed by the petitioner are based on opening capital cost of ₹231355.07 lakh as on 1.4.2014 as against ₹230569.84 lakh as on 31.3.2014 admitted vide order dated 27.6.2016 in Petition No. 217/GT/2014. Accordingly, the opening capital cost of ₹230569.84 lakh as on 1.4.2014 has been considered.

Projected Additional Capital Expenditure during 2014-19

8. Regulation 14 (3) of the 2014 Tariff Regulations, provides as under:

“14.(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:

(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;

(ii) Change in law or compliance of any existing law;

(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;

(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;

(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;

(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;

(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite based stations or transmission system as the case may be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;

(viii) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;



(ix) In case of transmission system, any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2014:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite based station shall be met out of compensation allowance:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M), repairs and maintenance under (O&M) expenses and Compensation Allowance, same expenditure cannot be claimed under this regulation.”

9. The break-up of the projected additional capital expenditure claimed by the petitioner during 2014-19 is detailed as under:-

| | | | | | | | | (₹ in lakh) |
|--------|---------------------------------|------------------------|---------|---------|---------|---------|---------|-------------|
| S. No. | Head of Work / Equipment | Regulation | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | Total |
| 1 | Ash Dyke/ash pond related works | 14(3)(iv) | 447.69 | 0.00 | 1400.00 | 0.00 | 0.00 | 1847.69 |
| 2 | N2 Dyke strengthening | 14(3)(iv) | 650.00 | 0.00 | 0.00 | 0.00 | 0.00 | 650.00 |
| 3 | DAES | 14(3)(ii) | 1795.24 | 0.00 | 0.00 | 0.00 | 0.00 | 1795.24 |
| 4 | Online CO2, SOX,NOX Analyser | 14(3)(ii) | 0.00 | 167.00 | 0.00 | 0.00 | 0.00 | 167.00 |
| 5 | Online Effluent Analyzers | 14(3)(ii) | 0.00 | 40.00 | 0.00 | 0.00 | 0.00 | 40.00 |
| 6 | MVW system for CHP | 14(3)(ii) & 14(3)(iii) | 0.00 | 0.00 | 690.00 | 0.00 | 0.00 | 690.00 |
| 7 | Wagons | 14(3)(x) | 0.00 | 0.00 | 225.00 | 0.00 | 0.00 | 225.00 |
| 8 | Earth covers for Ash Dyke | 14(3)(iv) | 0.00 | 0.00 | 0.00 | 300.00 | 300.00 | 300.00 |
| 9 | Halon Replacement | 14(3)(ii) | 0.00 | 0.00 | 0.00 | 0.00 | 1357.00 | 1357.00 |



| S. No. | Head of Work / Equipment | Regulation | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 | Total |
|--------|---|------------------------|----------------|---------------|----------------|---------------|----------------|----------------|
| 10 | Mulsifier system for transformers & cable galleries | 14(3)(ii) & 14(3)(iii) | 0.00 | 0.00 | 0.00 | 0.00 | 600.00 | 600.00 |
| | Total Additional Capital Expenditure | | 2892.93 | 207.00 | 2315.00 | 300.00 | 2257.00 | 7971.93 |

10. The projected additional capital expenditure claimed by the petitioner has been discussed in the succeeding paragraphs.

Change in law, Safety and Security-Regulation 14(3)(ii) & 14(3)(iii)

Regulation 14(3)(ii)

11. The petitioner has claimed the projected additional capital expenditure of ₹1795.24 lakh in 2014-15 towards Dry Ash Extraction System(DAES), ₹167.00 lakh in 2015-16 towards Online CO₂,SOX,NOX Analyzer, ₹40.00 lakh in 2015-16 towards Online Effluent Analyzer and ₹1357.00 lakh in 2018-19 towards Halon Replacement. In regard DAES the petitioner has submitted that the same is essential in view of Ministry of Environment and Forest (MoEF) Gol, notification dated 3.11.2009 regarding ash utilisation. It is required to increase dry ash utilisation to 100% as part of maintaining environmental standards. The petitioner has further submitted that the Commission in its order dated 31.8.2012 in Petition No. 278/2009 and order dated 26.2.2014 in Petition No. 189/GT/2013, has allowed the same. It has also submitted that the asset was partly capitalised during 2009-14 and the remaining asset is projected to be capitalised in 2014-15. The petitioner has also submitted that the generating station units are running continuously and the work needs part isolations with careful execution causing extra time to execute the work. Accordingly, the petitioner has submitted that part capitalisation of this work is proposed to be capitalised in 2014-15. The petitioner has further submitted that Central Electricity Authority (CEA) vide the letter dated 18.6.2007 has also approved the expenditure for Dry Ash Extraction system and has accordingly prayed that the same may be allowed.



12. The petitioner has also claimed the projected additional capital expenditure of ₹167.00 lakh towards online CO₂, SOX, NOX Analyzers and ₹40.00 lakh towards Online Effluent Analyzers in 2015-16. The petitioner, in justification of the same has submitted that these works/assets are required as per the Central Pollution Control Board (CPCB) directions to the State Pollution Control Boards (SPCBs) to ensure the installation of these assets. The petitioner has also submitted the SPCB letter dated 5.2.2014 along with the petition.

13. The petitioner has further projected additional capital expenditure of ₹1357.00 lakh in 2018-19 towards Halon Replacement. In justification for the same the petitioner has submitted that 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. It has submitted that 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 1.1.2010) after which the production and servicing of the same was stopped (Vide Schedule IV). The petitioner has further submitted that 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. Accordingly, it has proposed to replace Halon gas fire protection system with alternate inert gas in line with Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulation, 2010 & ODS Rules, 2010. The petitioner has prayed to allow capitalization of Inert gas fire extinguishing system under Regulation 14(3)(ii).

Regulation 14(3)(ii) & 14(3)(iii)

14. In addition to the above the petitioner has also claimed projected additional capital expenditure of ₹690.00 lakh in 2016-17 towards MVW system for CHP and ₹600.00 lakh in 2018-19



towards Mulsifier system for transformers & cable galleries under Regulation 14(3)(ii) & 14(3)(iii) of the 2014 Tariff Regulations. In justification of the same the petitioner has submitted that assessment of availability, reliability and design adequacy of fire detection and protection system of all coal based thermal stations of NTPC was carried out inline with Regulation 12(5) of Central Electricity Authority (Technical Standards for construction of Electrical Plants and Electric Lines) Regulations, 2010, published in 20.8.2010. The petitioner has further submitted that major jobs identified to comply the said regulation with respect to fire detection and protection system at the generating station are: i) Installation of MVW (Medium Velocity Water) spray system for the various coal conveyers of Stage-I and Stage-II CHP, ii) Installation of Mulsifier system for transformers and cable galleries of Stage-I & II. It further submits that augmentation of fire protection system of Coal Handling Plant (CHP) and Stacker Re-claimer area inline with CEA Regulation is essentially required to prevent any catastrophic damage in case fire breaks out in CHP as existence 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. Accordingly, it has prayed that the capitalization on account of Augmentation of fire protection system under Regulation 14(3)(ii) and 14(3)(iii) of 2014 Tariff Regulation may be allowed.

15. The respondent, TANGEDCO in its reply for expenditure towards Halon Replacement has submitted that the CEA Notification dated 2.8.2010 is with regard to the standards to be followed for construction of electrical plants and electrical lines. The last unit of the generating station was commissioned during the year 1991. The respondent has prayed that the Commission may ascertain whether the existing fire detection systems are functioning properly, as the petitioner has not furnished the details for the same. It has submitted that in the event if fire detection devices installed earlier are working satisfactorily, the necessity for allowing the expenditure as claimed one more time is unreasonable and will give double benefit to the petitioner.

16. In regard with expenditure towards Dry Ash Extraction System(DAES), Online CO₂,SOX,NOX Analyzer, Online Effluent Analyzer, MVW system for CHP, Halon Replacement and



Mulsifier system for transformers & cable galleries, the respondent, TANGEDCO has pointed that the petitioner has claimed Compensation Allowance during 2014-19. Since the Compensation Allowance is admissible to the petitioner the additional capital expenditure claimed under Regulation 14(3)(ii) & (iii) should be met from Compensation Allowance. Accordingly the claim of the petitioner may be rejected.

17. In response, the petitioner has submitted that the CEA Regulations are applicable for new as well as all existing power plants and since the generating station came into existence prior to these guidelines, are to be complied now. Accordingly the petitioner has stated that expenditure is admissible under Regulation 14(3)(ii) and 14(3)(iii) of the 2014 Tariff Regulation.

18. We have considered the submission of the parties. The petitioner has opted for both Compensation and Special Allowance. The Special Allowance is provided for meeting the requirement of expenses including R&M beyond the useful life of the generating station during the period 2014-19. Since the petitioner is allowed Special Allowance in terms of Regulation 16 of the 2014 Tariff Regulations for the period 2014-19 for meeting the requirement of expenses including R&M beyond the useful life of the generating station, the projected additional capital expenditure claimed by the petitioner under Regulation 14(3)(ii) & 14(3)(iii) is disallowed as the provisions under Regulation 14(3) are for the period of normal useful life of station. Hence, the projected additional capital expenditure claimed for dry ash extraction system, online CO₂, SO_x, NO_x analyzer, online effluent analyzers, MVW system for CHP, Halon replacement and Mulsifier system for transformers & cable galleries under Regulation 14(3)(ii) & (iii) of the 2014 Tariff Regulations is not admissible. Accordingly, the petitioner shall meet the expenses from the "Special Allowance" permitted to the generating station during 2014-2019.

Ash Dyke/ Ash Dyke Strengthening - Regulation 14(3)(iv)

19. The petitioner has claimed projected additional capital expenditure of ₹1097.69 lakh in 2014-15 (₹447.69 lakh for Ash Dyke/Ash Pond and ₹650.00 lakh for N₂ dyke strengthening works), and



₹1400.00 lakh in 2016-17 towards works related to Ash Dyke/Ash Pond. In justification petitioner has submitted that the projected expenditure is for the planned work related to Ash handling and Ash pond which are continuous in nature during the operational life of the generating station. The petitioner has further submitted that Ash pond management is of dynamic nature with respect to geographic usage, involves modifications such as raising pond height, re-routing of roads, relocating piping, re-aligning spraying requirements etc. Ash pond needs capacity enhancement and strengthening periodically. Accordingly activities like ash dyke raising, pipe re-routing etc are needed periodically. The petitioner has prayed that the Commission may allow the same.

Earth Cover for Ash Dyke- Regulation 14(3)(iv)

20. The petitioner has claimed projected additional capital expenditure of ₹300.00 lakh in 2017-18 and ₹300.00 lakh in 2018-19 towards Earth covers for ash dyke and has submitted that after complete filling of ponds with ash, earth cover is required to prevent fugitive emissions and to facilitate growth of vegetation. It has pointed that the Commission in its order dated 31.8.2012 in Petition No. 278/2009 had allowed the same however, the Commission has recognized the deferment of this work in order dated 26.2.2014 in Petition No. 189/GT/2013. The petitioner has prayed that the Commission may allow the same.

21. The respondent, KSEB has submitted that separate funds are allocated for the works related to ash dyke and pond and the same may not be allowed under additional capital expenditure. The earth covers for ash dyke may be considered under the O&M expenses. The respondent, TANGEDCO has submitted that the generating station has completed 25 years in 2015-16 and hence it is only eligible for the special allowances and other claims of the petitioner under additional capital expenditure in respect of the ash dyke or pond is unjustified and the same may be disallowed. In response to KSEB, the petitioner has submitted that additional capital expenditure related to the ash dyke or pond and earth covers has been claimed under Regulation 14(3)(iv) of the 2014 Tariff Regulation. The petitioner has further submitted that the Commission had approved the capitalization of earth cover in its order dated 31.8.2012 in Petition No. 278/2009. In response to the



respondent, TANGEDCO the petitioner has submitted that the special allowance as per the Regulation 16 of the 2014 Tariff Regulation does not envisage capital expenditure necessitated for other reasons falling under Regulation 14 of the 2014 Tariff Regulation such as change in law, ash related schemes therefore the special allowance and additional capital expenditure carried out under regulation 14 can co-exist.

22. We have examined the matter. Regulation 16 of 2014 Tariff Regulations provides as under:

“16. Special Allowance for Coal-based/Lignite fired Thermal Generating station:

(1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing R&M may opt to avail a „special allowance“ in accordance with the norms specified in this regulation, as compensation for meeting the requirement of expenses including renovation and modernisation beyond the useful life of the generating station or a unit thereof, and in such an event, revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost:

Provided that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.

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(3) In the event of granting special allowance by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed to furnish details of such expenditure.”

23. Regulation 27(7) of 2014 Tariff Regulations provides as under:

“27(7): The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.”

24. The generating station was declared under commercial operation on 1.4.1991. Accordingly the useful life in term of Regulation is 25 years. It is observed that the petitioner in this petition has claimed projected additional capital expenditure for the above works during the fag end of the completion of useful life of 25 years. The petitioner has also not submitted any comprehensive scheme of R&M for extension of life of the generating station. In terms of Regulation 16 of the 2014 Tariff Regulations, the petitioner has opted for “Special Allowance” from the year 2014-15 onwards



in order to meet the requirement of expenses including R&M beyond the useful life of the generating station. In this background, we are not inclined to allow the projected additional capital expenditure of ₹447.69 lakh and ₹650.00 lakh in 2014-15 and ₹1400.00 in 2016-17 as claimed by the petitioner towards Ash dyke or ash pond related works and N2 Dyke strengthening, we are also not allowing ₹300.00 lakh in 2017-18 and ₹300.00 lakh in 2018-19 towards Earth covers for ash dyke. Accordingly, the petitioner shall meet the expenses from the “Special Allowance” permitted to the generating station for 2014-2015.

Wagons -Regulation 14(3)(x)

25. The petitioner has claimed projected additional capital expenditure of ₹225.00 lakh in 2016-17 towards replacement of Wagons under Regulation 14(3)(x) of the 2014 Tariff Regulations. The petitioner has submitted that six no. of wagons are to be procured for replacement of damaged wagons and de-capitalisation of these wagons have been taken into account by the Commission while approving additional capitalisation for 2007-09 in Petition No. 142/2009 with 36/2009. It has further submitted that the Railway wagons were also allowed by the Commission in order dated 31.8.2012 in Pet No 278/2009 and in order dated 26.2.2014 in Petition No 189/GT/2013 under Regulation 9(2)(vii) of 2009 Tariff Regulations however due to high gestation period and limited number of vendors, the same could not be capitalised in 2009-14. Accordingly, the petitioner has submitted that same is projected to be capitalised in 2016-17.

26. The respondent, TANGEDCO has submitted that the Commission in its order dated 31.8.2012 in Petition No. 278/2009 had allowed the additional capital expenditure of ₹228.00 lakh in 2011-12, and thereafter the expenditure was shifted in 2013-14 in order dated 26.2.2014 in Petition No. 189/GT/2013 shifted the projected expenditure of ₹228.00 lakh was allowed in 2013-14,. The petitioner has stated that the expenditure allowed was partly capitalised in 2009-14 and the remaining is projected to be capitalised during 2014-19. The respondent has further submitted that the petitioner has again shifted the expenditure from the previous period 2009-14 to the present



period 2014-19 and has stated that the expenditure claimed for the year 2016-17 is on projected basis. Accordingly, the respondent, TANGEDCO has prayed to direct the petitioner to claim the expenditure on actual basis at the time of truing up after finalization of vendors and procurement of wagons.

27. In response, the petitioner has submitted that the Commission had approved the expenditure for Wagons in order dated 31.8.2012 in Petition No. 278/2009 and order dated 26.2.2014 in Petition No. 189/GT/2013. The petitioner has further clarified that due to high gestation period and limited no. of vendors available the same could not be capitalized in 2009-14 and the expenditure towards the wagons is expected to be capitalized in 2016-17. It has further submitted that the details of the capitalization requested by the respondent shall be submitted at the time of filing of true-up petition.

28. We have considered the submission of the parties. The projected additional capital expenditure claimed towards replacement of wagons, after expiry of useful life of 25 years of the generating station, is in the nature of R&M. As stated, the petitioner has opted for Special Allowance for meeting the requirement of expenses including R&M beyond the useful life of the generating station during the period 2014-19. Since the petitioner is allowed Special Allowance in terms of Regulation 16 of the 2014 Tariff Regulations for the period 2014-19 for meeting the requirement of expenses including R&M beyond the useful life of the generating station, the projected additional capital expenditure of ₹225.00 lakh in 2016-17 is disallowed. The petitioner shall meet the expenses from the Special Allowance allowed to the generating station.

29. Based on the above discussions, the projected additional capital expenditure claimed for the period 2014-19 as in para 9 above has not been allowed.

30. Accordingly, the capital cost for the period 2014-19 is allowed as under

| | <i>(₹ in lakh)</i> | | | | |
|-----------------------------|--------------------|----------------|----------------|----------------|----------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Opening Capital Cost | 230569.84 | 230569.84 | 230569.84 | 230569.84 | 230569.84 |



| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--|-----------|-----------|-----------|-----------|-----------|
| Add: Additional capital expenditure | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Capital Cost | 230569.84 | 230569.84 | 230569.84 | 230569.84 | 230569.84 |

Debt-Equity Ratio

31. Regulation 19 of the 2014 Tariff Regulations provides as under:

(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

(i) where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:

(ii) the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:

(iii) any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.

Explanation - *The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

(2) The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt:equity ratio has not been determined by the Commission for determination of tariff for the period ending



31.3.2014, the Commission shall approve the debt:equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

32. Accordingly, the gross normative loan and equity amounting to ₹115984.97 lakh and ₹114584.88 lakh, respectively as on 31.3.2014 as considered in order dated 27.6.2016 in Petition No. 217/GT/2014, has been considered as gross normative loan and equity as on 1.4.2014. The normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to truing-up in terms of the 2014 Tariff Regulations.

Return on Equity

33. Regulation 24 of the 2014 Tariff Regulations provides as under:

“24. Return on Equity: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted



Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

34. Regulation 25 of the 2014 Tariff Regulations provides as under:

“Tax on Return on Equity

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where “t” is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.

35. The petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate of 23.939%. The respondent, KSEB has submitted the petitioner has not provided any documentary proof for considering the effective tax rate of 23.939%, and hence the petitioner may be directed to true up the grossed up rate of return on equity at the end of every financial year strictly as per Regulation 25(3) of the 2014 Tariff Regulation. In response, the petitioner has submitted that the effective tax rate has been calculated based on the estimated profit and tax to be paid for the financial year 2014-15 as per Regulation 25(2) of the 2014 Tariff Regulation and the



same rate has been considered upto 31.3.2019. However this rate shall be revised as per Regulation 25(3) for the billing of the relevant financial year.

36. We have considered the submissions. This issue being not confined to a single petition and being generic in nature as the issue is applicable to all NTPC petitions uniformly need deliberation. We have examined the documents submitted and observed that the regulation prescribe computation of effective tax rate on the basis of tax paid, still we deem it proper to allow grossing up on MAT rate considering the fact that the matter is getting decided in the year 2016-17. Accordingly, the effective tax rate (MAT) of 20.961% has been considered for the year 2014-15 and 21.342% for the year 2015-16 onwards up to the year 2018-19 for the purpose of grossing up of base rate of 15.5%. Accordingly, the rate of Return on Equity works out to 19.610% for the year 2014-15 and 19.705% for the year 2015-16 onwards. This is however, subject to true-up. Accordingly, return on equity has been worked out as under:

| | (₹ in lakh) | | | | |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Notional Equity- Opening | 114584.88 | 114584.88 | 114584.88 | 114584.88 | 114584.88 |
| Addition of Equity due to additional capital expenditure | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Normative Equity-Closing | 114584.88 | 114584.88 | 114584.88 | 114584.88 | 114584.88 |
| Average Normative Equity | 114584.88 | 114584.88 | 114584.88 | 114584.88 | 114584.88 |
| Return on Equity (Base Rate) (%) | 15.500 | 15.500 | 15.500 | 15.500 | 15.500 |
| Tax Rate for the year (%) | 20.961 | 21.342 | 21.342 | 21.342 | 21.342 |
| Rate of Return on Equity (Pre Tax) (%) | 19.610 | 19.705 | 19.705 | 19.705 | 19.705 |
| Return on Equity (Pre Tax) annualised | 22470.09 | 22578.95 | 22578.95 | 22578.95 | 22578.95 |

Interest on Loan

37. Regulation 26 of the 2014 Tariff Regulations provides as under:

“26. Interest on loan capital: (1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.
(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.



(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such refinancing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.”

38. Interest on loan has been worked out as under:

- a. The gross normative loan of ₹115984.97 lakh as on 1.4.2014 has been considered.
- b. Cumulative repayment of loan of ₹113695.86 lakh as on 31.3.2014 as considered in order dated 27.6.2016 in Petition No.217/GT/2014 has been considered as on 1.4.2014.



- c. Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.
- d. Depreciation allowed has been considered as repayment of normative loan during the respective years of the tariff period 2014-19. Accordingly, net normative closing loan as on 31.3.2015 works out to ₹919.42 lakh. However, considering the fact that the petitioner has recovered the entire depreciable value corresponding to the admitted capital cost as on 31.3.2015, the remaining balance normative loan of ₹919.42 lakh shall be repaid by the petitioner out of depreciation recovered till 31.3.2015. Accordingly, for the purpose of tariff ₹919.42 lakh has been considered as additional repayment during the year 2014-15.
- e. In line with the provisions of the regulation, the weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the generating station. In case of loans carrying floating rate of interest the rate of interest as provided by the petitioner has been considered for the purpose of tariff. The calculations for weighted average rate of interest on loan have been enclosed as Annexure-I to this order. The necessary calculation for interest on loan is as under:

| | (₹ in lakh) | | | | |
|---|---------------|-------------|-------------|-------------|-------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Gross opening loan | 115984.97 | 115984.97 | 115984.97 | 115984.97 | 115984.97 |
| Cumulative repayment of loan upto previous year | 113695.85 | 115984.97 | 115984.97 | 115984.97 | 115984.97 |
| Net Loan Opening | 2289.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| Addition due to additional capital expenditure | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Repayment of loan during the year | 1369.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| Additional Repayment of loan | 919.42 | 0.00 | 0.00 | 0.00 | 0.00 |
| Less: Repayment adjustment on account of de-capitalization | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Add: Repayment adjustment on account of discharges corresponding to un-discharged liabilities deducted as on 1.4.2009 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Net Repayment | 2289.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| Net Loan Closing | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Loan | 1144.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| Weighted Average Rate of Interest of loan (%) | 10.186 | 10.204 | 10.223 | 10.242 | 10.250 |
| Interest on Loan | 116.58 | 0.00 | 0.00 | 0.00 | 0.00 |



Depreciation

39. Regulation 27 of the 2014 Tariff Regulations provides as under:

“27. Depreciation: (1) *Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) *The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.*

(3) *The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:*

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) *Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

(5) *Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-II** to these regulations for the assets of the generating station and transmission system:*

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) *In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.*



(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.”

40. The cumulative depreciation amounting to ₹203766.01 lakh as on 31.3.2014 as considered in order dated 27.6.2016 has been considered for the purpose of tariff. Further, the value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing depreciation) for the year 2014-15 works out to ₹205135.71 lakh. Since the useful life of the generating station as on 1.4.2014 exceed 12 years from the effective station COD, depreciation for the period 2014-19 has been calculated by spreading over the remaining depreciable value over the balance useful life of the generating station for respective years.

41. Accordingly, depreciation has been computed as follows:

| | (₹ in lakh) | | | | |
|--|----------------|-------------|-------------|-------------|-------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Opening Capital Cost | 230569.84 | 230569.84 | 230569.84 | 230569.84 | 230569.84 |
| Add: Additional Capital Expenditure | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Capital Cost | 230569.84 | 230569.84 | 230569.84 | 230569.84 | 230569.84 |
| Average Capital Cost | 230569.84 | 230569.84 | 230569.84 | 230569.84 | 230569.84 |
| Balance useful life at the beginning of the period | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Depreciable value (excluding land) @ 90% | 205135.71 | 205135.71 | 205135.71 | 205135.71 | 205135.71 |
| Balance depreciable Value | 1369.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| Depreciation (annualized) | 1369.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cumulative depreciation up to previous year | 203766.01 | 205135.71 | 205135.71 | 205135.71 | 205135.71 |
| Less: Cumulative Depreciation adjustment on account of un-discharged liabilities | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Less: Cumulative Depreciation reduction due to de-capitalization | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Cumulative depreciation (at the end of the period) | 205135.71 | 205135.71 | 205135.71 | 205135.71 | 205135.71 |



Compensation Allowance

42. Regulation 17(1) of the 2014 Tariff Regulations provides as under:

“17. Compensation Allowance: (1) In case of coal-based or lignite-fired thermal generating station or a unit thereof, a separate compensation allowance shall be admissible to meet expenses on new assets of capital nature which are not admissible under Regulation 14 of these regulations, and in such an event, revision of the capital cost shall not be allowed on account of compensation allowance but the compensation allowance shall be allowed to be recovered separately.

(2) The Compensation Allowance shall be allowed in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:”

| Years of operation | Compensation Allowance (₹ lakh/MW/year) |
|--------------------|---|
| 0-10 | Nil |
| 11-15₹ | 0.20 |
| 16-20 | 0.50 |
| 21-25 | 1.00 |

43. The petitioner has claimed compensation allowance (unit-wise) to meet the expenses on new assets of capital nature including in the nature of minor assets as under:

| (₹ in lakh) | | | | |
|-------------|---------|---------|---------|---------|
| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 1000.00 | 500.00 | 0.00 | 0.00 | 0.00 |

44. It is observed that Units I to IV of the generating stations have completed 25 years of useful life up to 2013-14 and Unit V & VI would complete 25 years of useful life in years 2014-15 and 2015-16 respectively. Accordingly the compensation allowance claimed by the petitioner is allowed as under:

| (₹ in lakh) | | |
|----------------|---------------|----------------|
| Description | Unit V | Unit VI |
| Capacity in MW | 500 | 500 |
| 2014-15 | 500.00 | 500.00 |
| 2015-16 | 0.00 | 500.00 |
| 2016-17 | 0.00 | 0.00 |
| 2017-18 | 0.00 | 0.00 |
| 2018-19 | 0.00 | 0.00 |
| Total | 500.00 | 1000.00 |



Special Allowance

45. Regulation 16 of the 2014 Tariff Regulations provides for Special Allowance for Coal-based

/Lignite fired Thermal Generating stations as under:

“ (1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing R&M may opt to avail a „special allowance” in accordance with the norms specified in this regulation, as compensation for meeting the requirement of expenses including renovation and modernization beyond the useful life of the generating station or a unit thereof, and in such an event, revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost:

Provided that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.

(2) The special Allowance shall be @Rs. 7.5 lakh/MW/year for the year 2014-15 and thereafter escalated @ 6.35 % every year during the tariff period 2014-15 to 2018-19, unit-wise from the next financial year from the respective date of completion of useful life with reference to the date of commercial operation of the respective unit of generating station:

Provided that in respect of a unit in commercial operation for more than 25 years as on 1.4.2014, this allowance shall be admissible from the year 2014-15:

Provided further that the special allowance for the generating stations, which, in its discretion, has already availed of a „special allowance” in accordance with the norms specified in clause (4) of regulations 10 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff Determination) Regulations, 2009, shall be allowed Special Allowance by escalating the special allowance allowed for the year 2013-14 @6.35% every year during the tariff period 2014-15 to 2018-19.

(3) In the event of granting special allowance by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed to furnish details of such expenditure.

46. The Special Allowance claimed by the petitioner in is as follows:-

| Special Allowance | (₹ in lakh) | | | | |
|-------------------|-------------|----------|----------|----------|----------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| | 7735.54 | 12214.87 | 17231.89 | 18326.11 | 19489.82 |

47. Accordingly, the Special Allowance as per clause 16(2) of 2014 Tariff Regulations, for Stage-I and Stage-II of the generating station have been worked out and allowed as under:-

| Units | Capacity in MW | Date of Commercial operation | Year of completion of Useful life | (₹ in lakh) | | | | |
|-------|----------------|------------------------------|-----------------------------------|-------------|---------|---------|---------|---------|
| | | | | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| I | 200 | 1.3.1984 | 2008-09 | 1328.51 | 1412.87 | 1502.59 | 1598.00 | 1699.47 |
| II | 200 | 1.11.1984 | 2009-10 | 1328.51 | 1412.87 | 1502.59 | 1598.00 | 1699.47 |
| III | 200 | 1.5.1985 | 2010-11 | 1328.51 | 1412.87 | 1502.59 | 1598.00 | 1699.47 |
| IV | 500 | 1.11.1988 | 2013-14 | 3750.00 | 3988.13 | 4241.37 | 4510.70 | 4797.13 |



| | | | | | | | | |
|----------------------|-----|----------|---------|----------------|-----------------|-----------------|-----------------|-----------------|
| V | 500 | 1.9.1989 | 2014-15 | 0.00 | 3988.13 | 4241.37 | 4510.70 | 4797.13 |
| VI | 500 | 1.4.1991 | 2016-17 | 0.00 | 0.00 | 4241.37 | 4510.70 | 4797.13 |
| Total Allowed | | | | 7735.54 | 12214.87 | 17231.89 | 18326.11 | 19489.82 |

48. The petitioner has been allowed ₹74998.23 lakh as special allowance in tariff period 2014-19 and has also allowed ₹13759.78 lakh during 2009-14 period as special allowance. The petitioner is directed to maintain separately the details of expenditure incurred or utilized from special allowance for 2009-14 and 2014-19 period and shall make the details available to the Commission at the time of truing up. The petitioner shall also furnish the plan of action for utilization balance amount of special allowance recovered/ expected to be recovered at the time of true up.

O&M Expenses

49. Regulation 29 (1) (a) of the 2014 Tariff Regulations provides the year-wise O&M expense norms claimed for the generating station of the petitioner as under:

| Unit Size (MW) | (₹ in lakh) | | | | |
|----------------|-------------|---------|---------|---------|---------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 200 | 23.90 | 25.40 | 27.00 | 28.70 | 30.51 |
| 500 | 16.00 | 17.01 | 18.08 | 19.22 | 20.43 |

50. Proviso to the Regulation 29 (1) (a) of the 2014 Tariff Regulations states as under:

“Provided that the above norms shall be multiplied by the following factors for arriving at norms of O&M expenses for additional units in respective sizes for the units whose COD occurs on or after 1.4.2014 in the same station:

| | | |
|------------------|--|------|
| 200/210/250 MW | Additional 5 th & 6 th units | 0.90 |
| | Additional 7 th & more units | 0.85 |
| 300/330/350 MW | Additional 4 th & 5 th units | 0.90 |
| | Additional 6 th & more units | 0.85 |
| 500 MW and above | Additional 3 rd & 4 th units | 0.90 |
| | Additional 5 th & above units | 0.85 |

51. Accordingly, the year-wise O&M expenses claimed by the petitioner in terms of the above said norms are allowed as under:

| (₹ in lakh) | | | | |
|-------------|----------|----------|----------|----------|
| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 38340.00 | 40755.00 | 43320.00 | 46050.00 | 48951.00 |



52. As the generating station has 3 units of 200 MW capacity in Stage-I and 3 units of 500 MW capacity in Stage-II and all these units have achieved COD prior to the period 2009-14, the multiplication factors as per proviso to Regulation 19 (a) of the 2009 Tariff regulations and proviso to Regulation 29 (1) (a) of the 2014 tariff regulations are not applicable in this case. Accordingly, the multiplication factor has not been considered while determining the O&M expenses for generating station for the period 2014-19. Consequently, the normative O&M expenses claimed by the petitioner in terms of the 2014 Tariff Regulations are allowed.

Water Charges

53. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

“29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:

Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization”

54. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner.

55. The petitioner vide its petition dated 11.8.2014 has claimed water charges applicable for 2013-14 in 2014-15 and escalated the same at 6.35% annually. The water charges claimed by the petitioner are as follows:

| <i>(₹ in lakh)</i> | | | | |
|--------------------|----------------|----------------|----------------|----------------|
| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 1372.23 | 1459.37 | 1552.04 | 1650.59 | 1755.40 |



56. The Commission vide ROP dated 19.4.2016 had directed the petitioner to furnish the details in respect of water charges such as contracted quantum of water and allocated quantity, actual annual water consumption for the last 5 years (2009-14) along with the copy of the notification(s) of water charges. In response to the Commission's directions, the petitioner has submitted the details of the plant, type of cooling water system and water consumption and total water charges for the last 5 years i.e. 2009-14 vide affidavit dated 18.5.2016. The petitioner has revised the water charges for 2013-14 in this submission. The submission of the petitioner are as follows:

| Description | Remarks |
|--------------------------------|------------------------|
| Type of Plant | Coal |
| Type of cooling water system | Closed Circuit Cooling |
| Total water charges in 2013-14 | ₹1521.07 lakh |

| FY | Quantity (MCFT) | Rate (₹/MCFT) | Total Charges (in ₹ lakh) | Remarks |
|---------|-----------------|---------------|---------------------------|--|
| 2009-10 | 2429.90 | 28029.75* | 681.09 | - |
| 2010-11 | 3349.80 | | 938.94 | - |
| 2011-12 | 2731.79 | | 765.71 | - |
| 2012-13 | 2623.88 | | 1132.83 | Water Charges: ₹735.45 lakh Power Charges: ₹397.38 lakh |
| 2013-14 | 2865.95 | | 1521.07 | Water Charges: ₹803.31 lakh Power Charges: ₹717.76 lakh |

*For water drawn from Sriram Sagar Project (SRSP) and Yellampally Project (SYP). Water drawn from Yellampally Project was started from August 2012 for which variable charges for power for lifting the water are also paid in addition to the water charges.

57. The petitioner has also submitted the relevant notification of Irrigation & CAD Department Government of Andhra Pradesh dated 2.4.2002 and notification of Irrigation & CAD Department Government of Telangana State dated 14.8.2014 for applicable rate of water charges for the generating station.

58. As per provisions of Regulation 29(2) of the 2014 Tariff Regulations, Water charges are to be allowed separately. It is observed that there is significant difference in actual water charges of 2013-14 and 2014-15 claimed by the petitioner and water charges has been escalated at the rate of 6.35% on year to year for the period 2014-19. We have considered the submissions of the petitioner in respect of water charges vide its petition dated 11.8.2014 and vide affidavit dated 18.5.2016.



However, the petitioner has not furnished the basis of calculation of quantity of consumptive water during 2014-19 tariff period.

59. In this backdrop, we have considered the water charges claimed by the petitioner in 2014-15 and allowed the same for 2014-19 without any year to year escalation. Based on this, water charges allowed for the period 2014-19 are as under:

| <i>(₹ in lakh)</i> | |
|--------------------|------------------------------|
| Year | Water charges allowed |
| 2014-15 | 1372.23 |
| 2015-16 | 1372.23 |
| 2016-17 | 1372.23 |
| 2017-18 | 1372.23 |
| 2018-19 | 1372.23 |

60. The petitioner is directed to furnish the details such as the contracted quantity, allocation of water, the actual water consumed during 2014-19, the basis of calculation of quantity of consumptive water and computation of water charges at the time of truing-up of tariff in terms of the 2014 Tariff Regulations. In addition, the petitioner shall also confirm / clarify as to whether the water charges have been paid on the basis of contracted quantity or on the basis of allocation.

61. Accordingly, the total O&M expenses including water charges as claimed by the petitioner and allowed for the purpose of tariff is as under:

| <i>(₹ in lakh)</i> | | | | | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| O&M Expenses as claimed | 38340.00 | 40755.00 | 43320.00 | 46050.00 | 48951.00 |
| O&M Expenses as allowed | 38340.00 | 40755.00 | 43320.00 | 46050.00 | 48951.00 |
| Water charges as claimed | 1372.23 | 1459.37 | 1552.04 | 1650.59 | 1755.40 |
| Water charges as allowed | 1372.23 | 1372.23 | 1372.23 | 1372.23 | 1372.23 |
| Total O&M Expenses as claimed (including Water charges) | 39712.23 | 42214.37 | 44872.04 | 47700.59 | 50706.40 |
| Total O&M Expenses as allowed(including Water charges) | 39712.23 | 42127.23 | 44692.23 | 47422.23 | 50323.23 |



Capital spares

62. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up, shall be considered on merits, after prudence check.

Operational Norms

63. The operational norms in respect of the generating station claimed by the petitioner are as under:

| | |
|------------------------------------|---------|
| Target Availability (%) | 83.00 |
| Heat Rate (kcal/kWh) | 2396.43 |
| Auxiliary Energy Consumption (%) | 6.679 |
| Specific Oil Consumption (ml/ kWh) | 0.50 |

64. The operational norms claimed by the petitioner in accordance with Regulation 36 of the 2014 Tariff Regulations and discussed as under:

Normative Annual Plant Availability Factor (NAPAF)

65. Regulation 36 (A) (a) of the 2014 Tariff Regulations provides as under:

“(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) & (e)- 85%.

Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.

The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014.”

66. The petitioner has considered the target availability norm of 83% during 2014-19. The petitioner has submitted that the average PLF at NTPC Stations during the period 2009-10, 2010-11 was 90.81% and 88.29% respectively and during 2011-12, 2012-13 was lower at 85% and 83% respectively due to various factors. The petitioner has further submitted that Commission has prescribed lower/tighter operational norms based on the premise that Indian economy would recover and at Para 37.45 of the "Statement of Reasons" to the Tariff Regulations, 2014 has further stated that there will be improvement in the industrial growth in the country which will induce Discoms to



give more schedules thereby enabling generating stations to achieve improved loading and PLF during the tariff period 2014-19 compared to the period 2011-13. The petitioner has further submitted that in the event power demand continues to remain low and the PLF remains at the lower levels, and accordingly has prayed to grant liberty to approach the Commission for seeking relaxation of Operating Norms as per the actual scenario and PLF during the period 1.4.2014 onwards.

67. The respondent, KSEB vide its reply dated 21.10.2014 has submitted that the generating station has not faced any coal shortages during the past and the petitioner may be directed to adopt NAPAF of 85% instead of 83% allowed for the generating station facing coal shortages. In response, the petitioner has submitted that the reasons of the lower P.L.F. during last 2 years are due to use of imported coal to overcome the shortage of domestic coal, partial loading due to lower demand, use of must run renewable energy etc., which is likely to persist during 2014. The petitioner has further prayed for liberty to approach for relaxation of operating norms in case the underlying assumption based on which the operating norms were fixed does not materialize i.e. PLF % of stations for 2014-19 do not increase compared to 2011-13 and submitted that the contention of the respondent is misplaced and liable to be rejected.

68. We have considered the submission of the parties. The Commission due to shortage of domestic coal supply has relaxed target availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Hence, the target availability of 83% is allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 & 2018-19 in terms of the Regulation 36(A) (a) of the 2014 Tariff Regulations.

Heat Rate (kCal/kWh)

69. The petitioner has claimed the Gross Station Heat Rate of 2396.43 kCal/kWh after computing the weighted average heat rate for the combination of 200 MW and 500 MW units in the generating station.



70. In line with the Regulation 36(C)(a)(i) of the 2014 Tariff Regulations, the Gross Station Heat Rate of the generating station has been computed as under:

| Unit Size (MW) | No. of Units | Type of boiler feed pump | Unit-wise heat rate (kCal/kWh) | Wt. avg. gross station heat rate (kCal/kWh) |
|----------------|--------------|--------------------------|--------------------------------|---|
| 200 | 3 | Electrical | 2450 | 2396.43 |
| 500 | 3 | Steam | 2375 | |

71. The Gross Station Heat Rate computed above for the generating station has been considered for computation of the energy charges for the 2014-19 tariff period.

Auxiliary Energy Consumption

72. The petitioner has claimed Auxiliary Energy Consumption at 6.68% during 2014-19 period as defined by Regulation 36(E)(a) of the Tariff Regulations, 2014 and the same is allowed.

Specific Oil Consumption

73. Regulation 36(D)(a) of the 2014 Tariff Regulations, provides secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station. Hence, the secondary fuel oil consumption considered by the petitioner is as per norms and is allowed.

Interest on Working Capital

74. Sub-section (c) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

“28. Interest on Working Capital:

(1) The working capital shall cover

(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations

(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;

(ii) Maintenance spares @ 30% of operation and maintenance expense specified in regulation 29; and

(iii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel’;



(iv)Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;

(v) Operation and maintenance expenses for one month.”

Fuel Components and Energy Charges in working capital

75. The petitioner has claimed cost for fuel components in working capital based on “as fired” GCV of coal procured and secondary fuel oil burnt for the preceding three months i.e. January 2014 to March 2014 as mentioned below:

| | (₹ in lakh) | | | | |
|--|-------------|----------|----------|----------|----------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Cost of Coal for Stock for 15 days | 12874.32 | 12874.32 | 12874.32 | 12874.32 | 12874.32 |
| Cost of Coal for Generation for 30 days | 25748.63 | 25748.63 | 25748.63 | 25748.63 | 25748.63 |
| Cost of Main Secondary Fuel Oil for 2 months | 559.02 | 559.02 | 559.02 | 559.02 | 559.02 |

76. The issue of “as received” GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon’ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon’ble High Court of Delhi had directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

77. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

“58. In view of the above discussion, the issues referred by the Hon’ble High Court of Delhi are decided as under:

(a) There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.

(b) The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing



shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC.”

78. Further, the petitioner has claimed energy charge rate (ECR) of 219.201 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & oil procured and burnt for the preceding three months. It is observed that the petitioner has not placed on record the GCV of coal on “as received” basis though the petitioner was required to furnish such information with effect from 1.4.2014 in terms of the regulation. In compliance with the direction of the Hon’ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydrolic Augur. The petitioner has not submitted the required data regarding measurement of GCV of coal in compliance with the directions contained in the said order dated 25.1.2016. The present petition cannot be kept pending till the petitioner submits the required information. Hence, the Commission has decided to compute fuel components and the energy charges in the working capital have been computed by provisionally considering the GCV of coal on as “billed basis” and allowing an adjustment for total moisture as per the formula given as under:

$$\frac{\text{GCV} \times (1 - \text{TM})}{(1 - \text{IM})}$$

Where: GCV=Gross Calorific value of coal
 TM=Total moisture
 IM= Inherent moisture

79. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for 2014-15, 2015-16 and 2016-17 and 85% NAPAF for 2017-18 and 2018-19, and based on “as billed” GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January 2014 to March 2014 and allowed as under:

| | (₹ in lakh) | | | | |
|---|-------------|----------|----------|----------|----------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Cost of Coal for stock– 15 days | 9947.89 | 9947.89 | 9947.89 | 10187.60 | 10187.60 |
| Cost of Coal for generation– 30 days | 19895.78 | 19895.78 | 19895.78 | 20375.20 | 20375.20 |
| Cost of secondary fuel oil – two months | 559.02 | 560.55 | 559.02 | 572.49 | 572.49 |



80. Similarly, the Energy Charge Rate (ECR) based on operational norms specified in 2014 Tariff Regulations and on “as billed” GCV of coal for preceding 3 months i.e. January 2014 to March 2014 is worked out as under:

| | Unit | 2014-19 |
|---|----------|----------|
| Capacity | MW | 2100 |
| Gross Station Heat Rate | kCal/kWh | 2396.43 |
| Aux. Energy Consumption | % | 6.68% |
| Weighted average GCV of oil (As fired) | kCal/Lt. | 9078.00 |
| Weighted average GCV of Coal (As Billed) | kCal/kg | 4565.00 |
| Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV Of Coal India | | * |
| Weighted average price of oil | ₹/KL | 43934.48 |
| Weighted average price of Coal | ₹/MT | 3025.73 |
| Rate of energy charge ex-bus | ₹/kWh | 1.722** |

* To be calculated by the petitioner based on the adjustment formula

** To be revised as per the figures at Sr. No. 6

81. The GCV of coal as computed above shall be adjusted in the light of the GCV of coal on “as received basis” computed by the petitioner as per our directions in order dated 25.1.2016 in Petition No. 283/GT/2014.

Maintenance spares

82. The petitioner has claimed maintenance spares in the working capital as under:

| (₹ in lakh) | | | | |
|-------------|---------|---------|---------|----------|
| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 7942.45 | 8442.87 | 8974.41 | 9540.12 | 10141.28 |

83. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provides for Maintenance spares @ 20% of the Operation & Maintenance expenses as specified in Regulation 29. As specified in Regulation 29 (2) of the 2014 Tariff Regulations, the maintenance spares @ 20% of the operation & maintenance expenses, including water charges, are allowed as under:



| (₹ in lakh) | | | | |
|-------------|---------|---------|---------|----------|
| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 7942.45 | 8425.45 | 8938.45 | 9484.45 | 10064.65 |

Receivables

84. Receivables equivalent to two months of capacity charge and energy charges has been worked out and allowed as under:

| (₹ in lakh) | | | | | |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Variable Charges (two months) | 40894.49 | 41006.53 | 40894.49 | 41879.90 | 41879.90 |
| Fixed Charges (two months) | 12755.79 | 12951.07 | 13402.52 | 13925.34 | 14438.89 |
| Total | 53650.28 | 53957.59 | 54297.01 | 55805.24 | 56318.79 |

O&M Expenses

85. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital are as under:

| (₹ in lakh) | | | | |
|-------------|---------|---------|---------|---------|
| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 3309.35 | 3517.86 | 3739.34 | 3975.05 | 4225.53 |

86. Based on the O&M expense norms specified by the Commission and in terms of the Commission's order dated 6.10.2015 in Petition No. 186/GT/2014, the O&M expenses for 1 month is allowed as under:

| (₹ in lakh) | | | | |
|-------------|---------|---------|---------|---------|
| 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| 3309.35 | 3510.60 | 3724.35 | 3951.85 | 4193.60 |

Rate of interest on working capital

87. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

“Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.”



88. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350bps) has been considered for the purpose of calculating interest on working capital. Interest on working capital has been computed as under:

| | (₹ in lakh) | | | | |
|--|-----------------|-----------------|-----------------|------------------|------------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Cost of coal towards stock- 15 days | 9947.89 | 9947.89 | 9947.89 | 10187.60 | 10187.60 |
| Cost of coal towards generation- 30 days | 19895.78 | 19895.78 | 19895.78 | 20375.20 | 20375.20 |
| Cost of secondary fuel oil- 2 months | 559.02 | 560.55 | 559.02 | 572.49 | 572.49 |
| Maintenance Spares | 7942.45 | 8425.45 | 8938.45 | 9484.45 | 10064.65 |
| Receivables- 2 months | 53650.28 | 53957.59 | 54297.01 | 55805.24 | 56318.79 |
| O & M expenses- 1 Month | 3309.35 | 3510.6 | 3724.35 | 3951.85 | 4193.60 |
| Total Working Capital | 95304.77 | 96297.87 | 97362.50 | 100376.82 | 101712.32 |
| Rate of Interest (%) | 13.50 | 13.50 | 13.50 | 13.50 | 13.50 |
| Interest on Working Capital | 12866.14 | 13000.21 | 13143.94 | 13550.87 | 13731.16 |

89. Accordingly, annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:

| | (₹ in lakh) | | | | |
|-----------------------------|-----------------|-----------------|-----------------|------------------|------------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Depreciation | 1369.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| Interest on Loan | 116.58 | 0.00 | 0.00 | 0.00 | 0.00 |
| Return on Equity | 22470.09 | 22578.95 | 22578.95 | 22578.95 | 22578.95 |
| Interest on Working Capital | 12866.14 | 13000.21 | 13143.94 | 13550.87 | 13731.16 |
| O&M Expenses | 39712.23 | 42127.23 | 44692.23 | 47422.23 | 50323.23 |
| Compensation Allowance | 1000.00 | 500.00 | 0.00 | 0.00 | 0.00 |
| Special allowance | 7735.54 | 12214.87 | 17231.89 | 18326.11 | 19489.82 |
| Total | 85270.30 | 90421.26 | 97647.01 | 101878.16 | 106123.17 |

Month to Month Energy Charges

90. Clause 6 sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

“6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:



(a) For coal based and lignite fired stations

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic metre, as applicable.

CVSF = Calorific value of secondary fuel, in kCal per ml.

ECR = Energy charge rate, in Rupees per kWh sent out.

GHR = Gross station heat rate, in kCal per kWh.

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in Rupees per kg.

LPPF = Weighted average landed price of primary fuel, in Rupees per kg

91. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations, 2014 read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014.

92. The petitioner has been directed by the Commission in its order dated 19.2.2016 in Petition No. 33/MP/2014, to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out with the beneficiaries at the Senior Management level.

Application Fee and Publication Expenses

93. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited the filing fees of ₹92.40 lakhs for the period 2014-15 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover *pro rata*, the filing fees and the expenses incurred on publication of notices for the period 2014-15 directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2015-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.



94. The annual fixed charges approved for the period 2014-19 as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

95. Petition No. 292/GT/2014 is disposed of in terms of the above.

**Sd/-
(Dr. M.K.Iyer)
Member**

**Sd/-
(A. K. Singhal)
Member**

**Sd/-
(Gireesh B Pradhan)
Chairperson**



WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2014-19 TARIFF PERIOD

| Particulars | (₹ in lakh) | | | | |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Net loan – Opening | 4310.00 | 4250.00 | 3677.50 | 3105.00 | 2562.50 |
| Additions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Repayments of Loans during the year | 60.00 | 572.50 | 572.50 | 542.50 | 512.50 |
| Net loan – Closing | 4250.00 | 3677.50 | 3105.00 | 2562.50 | 2050.00 |
| Average Net Loan | 4280.00 | 3963.75 | 3391.25 | 2833.75 | 2306.25 |
| Rate of Interest on Loan with monthly rests | 10.1860% | 10.2039% | 10.2231% | 10.2419% | 10.2500% |
| Interest on loan | 435.96 | 404.46 | 346.69 | 290.23 | 236.39 |

