CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 20/2010

Coram: **Dr.Pramod Deo, Chairperson**
Shri S.Jayaraman, Member
Shri V.S.Verma, Member
Shri M.Deena Dayalan, Member

DATE OF HEARING: 31.5.2011 **DATE OF ORDER: 9.4.2012**

IN THE MATTER OF

Fixation of tariff in respect of NLC TPS-I (600 MW) for the period from 1.4.2009 to 31.3.2014.

AND IN THE MATTER OF

Neyveli Lignite Corporation Ltd, Chennai …..Petitioner
Vs
Tamil Nadu Electricity Board, Chennai … Respondent

Parties present:

1. Shri R.Suresh, NLC
2. Shri S.Balaguru, TNEB

ORDER

This petition has been filed by the petitioner, NLC, for determination of tariff in respect of NLC, TPS-I (6 x 50 MW + 3 x 100 MW) (hereinafter referred to as "the generating station") for the period from 2009-14, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The generating station with a total capacity of 600 MW comprises of 6 units of 50 MW each and 3 units of 100 MW each. The date of commercial operation of the different units of the generating station is as under:

Units	Capacity (MW)	Date of commercial operation (COD)
Unit-I	50	23.5.1962
Unit-II	50	23.1.1963
Unit-III	50	11.6.1963
Unit-IV	50	27.10.1963
Unit-V	50	29.4.1964
Unit- VI	50	24.8.1965
Unit-VII	100	28.3.1967
Unit-VIII	100	12.2.1969
Unit-IX	100	21.2.1970

3. The generating station was under extensive R&M during April 1992 to March 1999 under the Life Extension Programme (LEP). As a consequence, the life of the generating station was extended by 15 years, that is, up to 2014. The power generated from the generating station is supplied to the State of Tamil Nadu and thus the respondent is the sole beneficiary of the generating station. The petitioner had entered into a Bulk Power Supply Agreement (BPSA) with the respondent effective from 1.4.1997 to 31.3.2002.

4. The tariff for the generating station for the period from 1.4.2004 to 31.3.2009 was approved by the Commission by order dated 26.9.2006 in Petition No.186/2004 based on the gross block of ₹41970 lakh and net block of ₹18623 lakh as on 1.4.2004. Subsequently, the tariff was revised by Commission's order dated 17.11.2008 in Petition No. 125/2007, after allowing the additional capital expenditure for the period 2004-07. Thereafter, by order dated 18.12.2009 in Petition No. 13/2009, the annual fixed charges of the generating station were revised after considering the additional capital expenditure for the years 2007-08 and 2008-09. The annual fixed charges approved by order dated 18.12.2009 is as under:

(₹in lakh)

	2007-08	2008-09
Interest on Loan	47	45
Interest on Working Capital	1806	1818
Depreciation	1756	1959
Advance Against Depreciation	0	0
Return on Equity	2107	1961
O & M Expenses	10260	10668
Total	**15975**	**16451**

5. By the same order, the petitioner was permitted to recover the energy charge at 132.11 paise/kWh based on the lignite transfer price of ₹797/MT.

6. The petitioner in its original petition filed on 1.1.2010 had claimed additional capital expenditure in terms of Regulations 9(2)(ii), 9(2)(iii) and 9(2)(iv) of the 2009 Tariff Regulations. It had also claimed Special Allowance and Compensatory Allowance in terms of the said regulations. The respondent in its reply vide affidavit dated 22.10.2010, objected to the above said claims and submitted that the tariff petition filed by the petitioner was not in accordance with Regulation 87(1) of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999. However, the petition was heard on 26.10.2010 and the Commission while granting liberty to the petitioner to amend the petition, directed the parties to submit information as under:

(a) Respondent to specifically indicate the period or the number of years for which the respondent wanted the petitioner to run the generating station before the same was to be phased out, along with the highest ceiling of tariff acceptable to it;

(b) Petitioner to revise the tariff petition in line with the 2009 Tariff Regulations after excluding any compensation allowance and special allowance which are not admissible; Also, the expenditure in respect of assets which are required for efficiency improvement are not to be included in the claim for additional capital expenditure;

(c) Petitioner to submit the minimum additional expenditure in respect of assets/works which are essentially required to run the generating station for a specified period of time as indicated by the respondent in their affidavit; and

(d) Petitioner to indicate the requirement of additional Operation & Maintenance (O&M) expenses over and above the normative O&M expenses, if any, giving justification.

7. Pursuant to the above, the respondent by its affidavit dated 21.12.2010 has submitted that it is willing to avail power from the generating station upto 31.3.2014 considering the rates indicated by the petitioner, but in terms of the 2009 Tariff Regulations. The respondent has also clarified that the unit rate at which it was willing to pay for the energy supplied beyond the useful life of the generating station, is to be based on the tariff petition filed by the petitioner in terms of the regulations in force. It has also prayed that in terms of the Tariff Policy, the tariff of the generating station may be fixed in such a manner that it provides a reasonable return to the generator and the consumer is not burdened with higher tariff.

8. Thereafter, the petitioner vide its affidavit dated 21.1.2011 has filed the amended petition claiming annual fixed charges for the period 2009-14, as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Interest on Loan	43.00	42.00	40.00	39.00	37.00
Interest on Working Capital	3680.00	4005.00	4333.00	4643.00	4989.00
Depreciation	2136.00	2494.00	3020.00	3639.00	4414.00
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	3014.00	2862.00	2646.00	2207.00	1483.00
Actual O & M Expenses	22395.00	24202.00	26165.00	28298.00	30617.00
Cost of secondary fuel oil	2602.00	2602.00	2609.00	2602.00	2602.00
TOTAL	**33870.00**	**36206.00**	**38813.00**	**41427.00**	**44141.00**

9. The respondent has filed its reply and the petitioner has filed its rejoinder to the same.

Capital Cost as on 1.4.2009

10. The last proviso to Regulation 7 of the 2009 Tariff Regulations, provides that in case of existing projects, the capital cost admitted by the Commission prior to 1.4.2009 and the capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff.

11. The Commission by its order dated 18.12.2009 in Petition No.13/2009 had admitted the capital cost of ₹46831.00 lakh as on 31.3.2009 for the purpose of determination of tariff for 2004-09. However, the petitioner has considered a capital cost of ₹46907.29 lakh as on 1.4.2009 after considering the additional capital expenditure of ₹76.29 lakh on common assets disallowed by the Commission during 2007-09 in Petition No. 13/2009. The Commission in its order dated 31.8.2010 in Petition No. 230/2009 (pertaining to tariff of TPS-I (Expansion) had disallowed the claim of the petitioner for Common Assets for the reasons stated there under. The same is adopted in the instant case also and the claim of ₹76.29 lakh is rejected. In view of this, the admitted capital cost of ₹46831.00 lakh as on 31.3.2009 has been considered as capital cost as on 1.4.2009.

Projected Additional Capital Expenditure for 2009-14

12. Clause (2) of Regulation 9 of the 2009 Tariff Regulations, as amended on 21.6.2011 provides as under:

(2) The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, 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;

(ii) Change in law;

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

(iv) 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) including due to geological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation; and

(v) 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 of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system:

Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, 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. 1.4.2009.

(vi) In case of gas/liquid fuel based open/ combined cycle thermal generating stations, any expenditure which has become necessary on renovation of gas turbines after 15 year of operation from its COD and the expenditure necessary due to obsolescence or non-availability of spares for successful and efficient operation of the stations.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

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

(viii) Any un-discharged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date, after prudence check of the details of such deferred liability, total estimated cost of package, reason for such withholding of payment and release of such payments etc."

13. As stated in paragraph 6(c) above, the Commission had directed the petitioner to submit the bare minimum additional expenditure in respect of assets/works which are essentially required to run the generating station for a specified period of time and that the expenditure for assets which are required for efficiency improvement are not to be included in the claim for additional capital expenditure.

14. The petitioner has submitted that it has filed the amended petition in terms of the directions of the Commission for fixation of tariff of the generating station for 2009-14. The

respondent vide its reply dated 24.3.2011 has submitted that there has been an increase in the claim of the petitioner and the same is without any justification and is not in line with the directions of the Commission. It has also submitted that the petitioner may be directed to furnish the actual expenditure incurred during 2009-10 and 2010-11 duly certified by auditors. In its reply dated 28.4.2011, the petitioner has clarified that during the final phase of the tariff period 2004-09, purchase of many items were restricted on the ground that the units were to be retired. Though phasing out of units was planned from the year 2006, it has become necessary to run the units beyond the proposed period of phasing out, due to persistent demand from the State of Tamil Nadu to continue the operation. Thus, in order to operate the units beyond the period 2004-09 without problems, necessary items/assets are required to be purchased. Moreover, the older units warrant more maintenance activities and hence an increase in the claim, the petitioner has stated.

15. On a query by the Commission during the hearing on 26.10.2010, as to whether the assets proposed for capitalisation was absolutely necessary for running the generating station, the petitioner has clarified that the generating station could run for the next five years smoothly, provided certain additional inputs in the form of assets/works as proposed, are undertaken.

16. We have considered the submissions of the petitioner and objections of the respondent. All the units of the generating station have completed the useful life and have undergone R&M activities. These units are in a depleted condition and have been proposed to be phased out. However, considering the acute power shortage in the State of Tamil Nadu and persistent demand by the State to run the generating station till the year 2014, the petitioner has decided to operate the generating station till 2014, subject to approval by the Commission of the expenditure required to keep the generating station in running condition. The petitioner is not entitled for 'Special Allowance' under the provision to Clause (1) of Regulation 10 of the 2009 Tariff Regulations nor does the generating station have any plan to go for another R&M. The petitioner has claimed certain additional capital expenditure considered necessary for the

operation of the generating station without categorising the expenditure under different heads of Regulation 9(2) of the 2009 Tariff Regulations. The claim of the petitioner for additional capital expenditure for 2009-14 is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Direct Assets	887.00	941.55	1117.20	95.50	0.00
Common Assets	643.00	705.00	747.00	790.00	837.00
Total additional capital expenditure	**1530.00**	**1646.55**	**1864.20**	**885.50**	**837.00**

17. Some of the assets for which major expenditure has been claimed by the petitioner under 'direct assets' are as under:

<u>2009-10</u>

₹6.00 lakh claimed is towards Split Casing Fire Pump and Static Excitation system at a cost of ₹106.00 lakh from M/s BHEL, ₹180.00 lakh towards 220 kV & 110 kV Bus bar Protection and ₹17.50 lakh for computerization of ABT, ₹458.16 lakh for renewal of water proofing for PH roof, major overhauling of Unit-1 & Unit-9 for RLA studies etc, ₹74.46 lakh towards RLA Study of Units-1 & Unit-9 and expenditure of ₹31.55 lakh towards RLA study on civil structure.

<u>2010-11</u>

₹78.70 lakh has been claimed for vertical raising of 'H' pond, in order to increase the holding capacity of the 'H' pond for safe disposal of ash slurry, ₹625.25 lakh claimed for renovation of chimneys, strengthening of ash line inspection road, renewal of water proofing for PH roof , 145 KV CT , circulating water pump, major overhauling of Unit-7 for RLA studies etc, ₹82.00 lakh towards 220 kV & 110 kV feeder Numerical Protection Relays, ₹29.45 lakh for RLA Study of Unit-7.

<u>2011-12</u>

₹48.00 lakh for On-line Hydrogen Purity analyzer, ₹75.00 lakh has been claimed towards 5 nos. of 1000 KVA Transformers, ₹62.2 lakh towards Ash Handling Systems Vertical, ₹110.00 lakh for SCADA system for MCR, ₹100.00 lakh for Bus bar Protection & Feeder Protection with numerical relays, ₹275.20 lakh towards the strengthening & widening of lake line Inspection road, laying of bitumen roads outside TPS–l, laying WBM & black topping or road along ACD bund of H Pond, ₹144.55 lakh for assets like 750 KVA Transformers etc

<u>2012-2013</u>

₹18.50 lakh towards Ash Pond, ₹71.50 lakh towards laying WBM & BT, providing drainage arrangements for the road from Silo to Lake Road, re-carpeting of Reservoir Bund Road etc.

18. The claims of the petitioner for additional capitalisation has been considered against the provisions of Regulation 9(2) and it is found that the expenditure cannot be allowed under any of the provisions of Regulation 9(2) of the 2009 Tariff Regulations. These expenditures are required for the successful operation of the generating station. In the 2004 Tariff Regulations applicable for the period 2004-09, Regulation 18(2)(iv) provided for the consideration of capital

expenditure in respect of any additional works/services which have become necessary for efficient operation of the generating station, but not included in the original project cost. This provision was however not continued under the 2009 Tariff Regulations. However, in order to meet the expenses on new assets of capital nature including in the nature of minor assets, the Commission under Regulation 19(e) of the 2009 Tariff Regulations has provided for a separate compensation allowance following the year of completion of 10, 15 or 20 years of useful life of the generating station. In this connection, the observations of the Commission in the Statement of Reasons (SOR) for grant of compensation allowance in respect of coal/lignite based stations under the 2009 Tariff Regulations, is extracted as under:

> *"10.2.5 As regards new works not within the original scope and expenditure on minor assets, a provision has been made in the regulations dealing with O & M expenses for a compensation allowance starting from 11th year from COD of units in respect of coal/lignite based stations as discussed elsewhere in this SOR.*
>
> *xxxxxxxx*
>
> *21.2 Generating companies like NTPC have submitted that amounts of compensation allowance are not sufficient to meet the expenditure on new works required for successful plant operation. NTPC and NLC have sought following compensation allowance.*
>
> *xxxxxxxx*
>
> *21.3 NTPC has sought above compensation allowance excluding additional capital expenditure on buildings, road, spares, batteries etc. citing the expenditure in case of Singrauli STPS, though the claims have not supported with any details. The Commission's decision to introduce compensation allowance was based on available data on additional capitalisation in the tariff petitions of NTPC stations. For this purpose expenditure on new assets in the nature of Environment Action Plan (EAP), arising on account of change of law or dealing with design deficiency etc has not been considered.*
>
> *21.4 In view of the above, the compensation allowance as proposed in the draft regulation has been retained as clause (e) of Regulation 19*

19. As stated, the claim of the petitioner for capitalisation of expenditure for 2009-14 in respect of assets/works do not fall under any of the provisions of Regulation 9(2) of the 2009 Tariff Regulations. Regulation 19(e) of the 2009 Tariff Regulations, provide for a normative compensation allowance for generating stations which have completed 10, 15 or 20 years of useful life. Admittedly, the generating station has completed useful life of 25 years and had also undergone R&M for life extension and is to be phased out by the year 2014. The expenditure claimed by the petitioner in respect of the assets is considered necessary for compliance with

statutory obligations and for sustenance of generation upto the year 2014 as per requirement of the respondent, TANGEDCO. Hence, keeping in view the absence of a provision for consideration of such expenditure under Regulation 9(2) of the 2009 Tariff Regulations and considering the need to maintain a balance between the bare minimum requirement for the generating station and at the same time minimize the financial burden on the respondent, we are of the view that the said expenditure should be allowed by relaxing the provisions of Regulation 19(e) of the 2009 Tariff Regulations, particularly, the allowance meant for the generating station between 21 to 25 years of operation, to be made applicable for this generating station beyond 25 years of operation. Accordingly, in exercise of power under Regulation 44 of the 2009 Tariff Regulations, we relax the provisions of Regulation 19(e) of the 2009 Tariff Regulations to allow compensation allowance @0.65 lakh/MW/year for this generating station for the period 2009-14, in lieu of additional capitalization. In view of this, the compensation allowance allowed for the generating station for 2009-14 is worked out as under:

(₹in lakh)

Year	Capacity (MW)	Compensation Allowance
2009-10	600	390
2010-11		390
2011-12		390
2012-13		390
2013-14		390
Total		**1950**

COMMON ASSETS

20. The petitioner has claimed the following expenditure towards Common Assets/services for the period 2009-14 in respect of the generating station.

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Common Assets	643.00	705.00	747.00	790.00	837.00	3722.00

21. The petitioner has submitted that it is an integrated utility, consisting of production units of mines and power stations and in order to augment the production units, the service units like the centralized material management, services, township administration, corporate office, hospital and regional offices are functioning and the asset additions are apportioned to the service units. These common assets are generally booked under corporate assets and the

normative O&M expenses also include corporate expenses. These expenses are recovered by the petitioner through O&M cost. In view of this, the total expenditure of ₹3722.00 lakh under common assets is not allowed to be capitalized.

Capital cost for 2009-14

22. As stated, the capital cost of the generating station is ₹46831.00 lakh as on 1.4.2009. Based on the above discussions, the capital cost for 2009-14, is as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Capital Cost as on 1st April of the financial year	46831.00	46831.00	46831.00	46831.00	46831.00
Additional Capitalization allowed	0.00	0.00	0.00	0.00	0.00
Capital Cost as on 31st **March of the financial year**	**46831.00**	**46831.00**	**46831.00**	**46831.00**	**46831.00**

Debt-Equity Ratio

23. As the Commission has considered NFA method in the case of the petitioner's generating stations, actual source of funding has been considered for calculating the debt-equity ratio.

Return on Equity

24. Regulation 15 of the 2009 Tariff Regulations, as amended on 21.6.2011 stipulates as follows*:*

> *"(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.*
>
> *(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.*
>
> *Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in Appendix-II.*
>
> *Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.*
>
> *(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.*
>
> *(4) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:*
>
> *Rate of pre-tax return on equity = Base rate / (1-t)*
>
> *Where t is the applicable tax rate in accordance with clause (3) of this regulation.*

(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:

Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations."

25. The petitioner has considered the return on equity @ 23.481% in terms of the provisions of the above regulations. Accordingly, the return on equity for the period 2009-14 works out as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Average Equity	12224	10321	8418	6516	4613
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax rate for the year 2008-09 (MAT)	33.990%	33.990%	33.990%	33.990%	33.990%
Rate of Return on Equity (Pre-Tax)	23.481%	23.481%	23.481%	23.481%	23.481%
Return on Equity (Pre-Tax) – (*annualized)*	**2870**	**2424**	**1977**	**1530**	**1083**

Interest on loan

26. The petitioner has adopted the Net Fixed Asset methodology. The actual loan, actual repayment and actual rate of interest considered for the purpose of calculation of interest on loan vide order dated 18.12.2009 in Petition No. 13/2009 has been considered. The weighted average rate of interest on loan for the period 2009-10 to 2013-14, @ 1.95%, has also been considered for the calculation of interest on loan. As per loan agreement, KFW was to extend to the borrower a loan not exceeding DM 65,000,000 in two portion namely:

Portion - I - DM 32,500,000
Portion - II - DM 32,500,000

27. As per the repayment schedule, Portion -II was to be repaid on 30.6.2006 and the repayment with regard to Portion -I was to commence in 30.12.2006, which would continue till 30.6.2036, well beyond the expiry of LEP of the plant i.e 31.3.2014. Thus, there is a mismatch between LEP and the repayment of the loan. In response to query regarding the treatment of the outstanding loan as on 31.3.2014, the petitioner has clarified that the repayment obligation of the portion of outstanding KFW loan as on 31.3.2014 i.e. after the closure of TPS-I, would be made by debiting the loan

account and crediting the bank account and the Interest and Foreign Exchange thereon will be taken to the general profit and loss account. Therefore, along with other expenses, the outstanding loan as on 31.3.2014 is to be paid by the petitioner from its own resources. The calculation of interest on loan as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Net Loan-Opening	2264	2182	2100	2018	1936
Repayment of loan	82	82	82	82	82
Net Loan-Closing	2182	2100	2018	1936	1854
Average Loan	2223	2141	2059	1977	1895
Rate of Interest	1.95%	1.95%	1.95%	1.95%	1.95%
Interest on loan	**43**	**42**	**40**	**39**	**37**

Depreciation

28. Regulation 17 of the 2009 Tariff Regulations provides as under*:*

(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) 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 stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site:

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

(3) 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.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III 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 date of commercial operation shall be spread over the balance useful life of the assets.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting 3[the cumulative depreciation including Advance against Depreciation] as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) 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.

29. As per methodology adopted in our orders determining tariff of the generating stations of the petitioner in Petition No.125/2007 and Petition No.13/2009, the remaining depreciable value

has been spread over the balance life of the generating station. Accordingly, the necessary computation in support of depreciation allowed is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Average Gross Block	46831	46831	46831	46831	46831
Value of Freehold Land	925	925	925	925	925
Depreciable Value	41315	41315	41315	41315	41315
Balance Useful life of the asset	5.0	4.0	3.0	2.0	1.0
Remaining Depreciable Value	9924	7939	5954	3969	1985
Depreciation	**1985**	**1985**	**1985**	**1985**	**1985**
Cumulative Depreciation	33377	35361	37346	39331	41315

Interest on Working Capital

30. Sub-clause (a) of clause (1) of Regulation 18 of the 2009 Tariff Regulations provide for working capital for Coal-based/lignite-fired thermal generating stations, as under:

(i) Cost of coal or lignite and limestone, if applicable, for 1½ months for pithead generating stations and two months for non-pit-head generating stations, for corresponding to the normative annual plant availability factor;

(ii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil.

(iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 19.

(iv) Receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor, and

(v) Operation and maintenance expenses for one month.

31. Clause (3) of Regulation 18 of the 2009 Tariff Regulations as amended on 21.6.2011 provides as under:

> *"Rate of interest on working capital shall be on normative basis and shall be considered as follows:*
>
> *(i) SBI short-term Prime Lending Rate as on 01.04.2009 or on 1st April of the year in which the generating station or unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the unit or station whose date of commercial operation falls on or before 30.06.2010.*
>
> *(ii) SBI Base Rate plus 350 basis points as on 01.07.2010 or as on 1st April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the units or station whose date of commercial operation lies between the period 01.07.2010 to 31.03.2014.*
>
> *Provided that in cases where tariff has already been determined on the date of issue of this notification, the above provisions shall be given effect to at the time of truing up."*

Fuel component in working capital

32. The petitioner has claimed the following cost for fuel component in working capital based on the weighted average price and Gross Calorific Value (GCV) of fuels:

(₹ in lakh)

	2009-10	2010-11		2011-12	2012-13	2013-14
Cost of lignite for 1.5 months	7550.42	8044.18	8387.07	9022.06	9662.62	10396.40
Cost of secondary fuel oil for 2 months	433.65	433.65		433.65	433.65	433.65

33. It is noticed that the petitioner has calculated the cost of lignite in working capital based on the yearly lignite price during the period 2009-10 to 2013-14 which is incorrect. The Lignite transfer price in respect of the generating stations of the petitioner is determined year-wise and hence there is no variation in the lignite cost in a particular year. For computation of working capital as per Regulations 18 (1) and 18 (2) of the 2009 Tariff Regulations, the cost of lignite shall be actual landed cost of lignite for three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.

34. In case of the generating stations of the petitioner, the price of fuel for the preceding three months i.e. January, 2009, February, 2009, and March, 2009 would mean the price of lignite for the year 2008-09. The lignite transfer price for the generating station allowed for 2008-09 was ₹873/MT as per Commission's order dated 17.11.2008 in Petition No. 125/2007.

35. The following table indicates the weighted average prices and GCV of fuel as indicated in the petition and as adopted by us for calculations for the fuel component in working capital and Energy charges for two months as receivables.

	As adopted by petitioner	As adopted by Commission
Price of Lignite (₹/MT)	As per petition	873
GCV of Lignite (Kcal/kg.)	2735	2735
Price of Secondary fuel oil (₹/KL)	19644	18247
GCV of Sec. Fuel oil (Kcal/Kg)	10000	10460

36. Based on the weighted average GCV and price of fuels as allowed by the Commission, the fuel component in working capital for different years of the period 2009-14, is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12 (*Leap year*)	2012-13	2013-14
Cost of lignite for 1.5 months	5984.41	5984.41	6000.81	5984.41	5984.41
Cost of secondary fuel oil for 2 months	402.81	402.81	403.91	402.81	402.81
Variable Charges for 2 months	7979.22	7979.22	8001.08	7979.22	7979.22

37. The lignite transfer price of ₹873/MT has been considered only for the purpose of computation of lignite cost for 1.5 months and Variable charges for two months in the working capital.

Maintenance Spares

38. In terms of Regulation 18(1)(a)(iii), the maintenance spares for the generating station has been worked out @ 20% of the operation and maintenance expenses specified in regulation 19, and allowed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance spares	3240	3425	3622	3828	4048

Receivables

39**.** In terms of Regulation 18(1)(a)(iv), receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor, has been computed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Fixed charges	4462	4549	4648	4751	4868
Variable charges	7979	7979	8001	7979	7979
Receivables	**12442**	**12528**	**12649**	**12730**	**12847**

Operation & Maintenance expenses

40. In terms of Regulation 18(1)(a)(v), operation & maintenance expenses for one month, as part of the working capital, is worked out as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	1350	1427	1509	1595	1687

Rate of interest on working capital

41. In terms of clause (3) of Regulation 18 of the 2009 Tariff Regulations, SBI PLR of 12.25% as on 1.4.2009 has been considered in the computation of interest on working capital.

42. Based on the above, the interest on working capital allowed for the period 2009-14, is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Fuel Stock	5984	5984	6001	5984	5984
Secondary Fuel oil cost	403	403	404	403	403
O&M expense	1350	1427	1509	1595	1687
Maintenance Spares	3240	3425	3622	3828	4048
Receivables	**12442**	**12528**	**12649**	**12730**	**12847**
Total Working Capital	**23419**	**23767**	**24184**	**24540**	**24969**
Interest Rate	12.25%	12.25%	12.25%	12.25%	12.25%
Interest on Working Capital	**2869**	**2911**	**2963**	**3006**	**3059**

O&M Expenses

43. Clause (a) of Regulation 19 of Regulation of the 2009 Tariff Regulations provide the Normative operation and maintenance expenses for Coal based and lignite fired (including those based on CFBC technology) generating stations, as under*:*

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses MW	27.00	28.54	30.18	31.9	33.73

44. The petitioner has claimed O&M charges for the period 2009-14 as under:

(₹in lakh)

	2009-10 *(actuals)*	2010-11	2011-12	2012-13	2013-14
Actual O&M cost claimed	22395	24202	26165	28298	30617

Reasons for increase in actual O&M expenses

45. The petitioner has submitted the reasons for its claim for increase in O&M expenses as under**:**

(i) Pay revision for the Executives and non- Executives with effect from 1.1.2007 as per the wage policies issued by the Department of Public Enterprises on various dates.

(ii) Wage revision for labour with effect from 1.1.2007

(iii) Abnormal increase in dearness allowance over and above the assumption made.

(iii) Increase in payment to Contracts due to increase in rate of Minimum wage for un-skilled, semi-skilled and skilled workers of Contract.

(v) Increase in wages and salaries in respect of Central Industrial Security Force (CISF) with effect from 1.1.2006,

46. Against the O&M norm of 27.00/MW for 2009-10, the actual O&M expenses claimed by the petitioner is ₹37.33 lakh/MW. From the justification furnished by the petitioner, it is observed that the rise in O&M expenses is on account of increase in employee cost and not due to any increase in repair and maintenance cost of the generating station which is in a depleted condition. The Commission has specified the O&M expense norms after providing for 50% increase in the employee cost. In view of the above, and considering the fact that these units are to be phased out, it is expected that the petitioner would reduce its man power gradually and manage its expenditure within the O&M norm specified by the Commission. Therefore, the claim of the petitioner for actual O&M expenses for 2009-10 has not been allowed. Accordingly, the normative O&M expenses as per provisions of the 2009 Tariff Regulations have been considered for the purpose of tariff.

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
O&M expenses	16200.00	17124.00	18108.00	19140.00	20238.00

Normative Annual Plant Availability Factor (NAPAF)

47. The NAPAF considered for the generating station for the period 1.4.2009 to 31.3.2014 is 72%.

Cost of Secondary Fuel Oil

48. Clause (1) of Regulation 20 of the 2009 Tariff Regulations provides as under:

"20. Expenses on secondary fuel oil consumption for coal-based and lignite-fired generating station. (1) Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause (iii) of regulation 26, in accordance with the following formula:

SFC – Normative Specific Fuel Oil consumption in ml/kWh

= SFC x LPSFi x NAPAF x 24 x NDY x IC x 10

Where,

LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs/ml considered initially.

NAPAF – Normative Annual Plant Availability Factor in percentage

NDY – Number of days in a year

IC - Installed Capacity in MW.

49. Based on the weighted average GCV and price of secondary fuel oil and the operational parameters as discussed above, the cost of secondary fuel oil considered in tariff for the period 2009-14 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of Secondary Fuel Oil	2416.84	2416.84	2423.46	2416.84	2416.84

Annual fixed charges

50. The annual fixed charges approved for the generating station period 2009-14 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	2870	2424	1977	1530	1083
Interest on Loan	43	42	40	39	37
Depreciation	1985	1985	1985	1985	1985
Interest on Working Capital	2869	2911	2963	3006	3059
O&M Expenses	16200	17124	18108	19140	20238
Cost of secondary fuel oil	2417	2417	2423	2417	2417
Separate Compensation Allowance	390	390	390	390	390
Total	**26774**	**27292**	**27886**	**28506**	**29208**

51**.** The recovery of the annual fixed charges shall be subject to truing up in terms of Regulation 6 of the 2009 Tariff Regulations

Energy Charges

52. Sub-clause (a) of clause (6) of Regulation of the 2009 Tariff Regulations provides as under:

"Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:

ECR = {(GHR-SFC x CVSF) x LPPF / CVPF+ LC x LPL} X 100 / (100-AUX)

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Gross calorific value of primary fuel as fired, 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, per litre or per standard cubic metre, as applicable, during the month.

SFC = Specific fuel oil consumption, in ml per kWh.

53. The Energy charges (year- wise) claimed by the petitioner for 2009-14 is as under:

(₹ in lakh)

	2009-10	**2010-11**		**2011-12**	**2012-13**	**2013-14**
		1.4.2010 to 30.6.2010	**1.7.2010 to 31.3.2011**			
Energy charges (ex-bus) ₹/kWh	1.814	1.932	2.015	2.161	2.321	2.497

54. The energy charges (year- wise) claimed is based on the pooled lignite price as worked out by it. For computation of Energy Charge Rate (ECR), the following norms have been considered.

	Unit	
Gross Station Heat Rate (normative)	Kcal/kWh	4000
Secondary Oil Consumption	Ml/kWh	3.5
Auxiliary Energy consumption	%	12.00

Base rate of Energy Charge

55. The base rate of energy charges has been computed based on the pooled lignite transfer price, the weighted average GCV of lignite and oil as above. The base rate of energy charge is worked out based on the computations as under:

(₹ in lakh)

	2009-10	**2010-11**		**2011-12**	**2012-13**	**2013-14**
		1.4.2010 to 30.6.2010	**1.7.2010 to 31.3.2011**			
Energy charges (ex-bus) ₹/kWh	1.814	1.932	2.015	2.161	2.321	1.814

56. The petitioner shall be entitled to compute and recover the annual fixed charges and energy charges in accordance with Regulation 21 of the 2009 Tariff Regulations.

Lignite Transfer Price

57. The petitioner has submitted that it has considered the lignite transfer prices (year-wise) based on the guidelines dated 11.6.2009 laid down by the Ministry of Coal, Govt. of India, the order of the Commission dated 23.3.2007 in Petition No. 5/2002 and the lignite transfer price certified by statutory auditors. The lignite transfer price certified by auditor is as under:

	2009-10	2010-11	2011-12	2012-13	2013-14
Lignite Transfer Price (₹/MT)	1101	1173	1262	1359	1466

58. However, due to clean Energy cess levied as per notification of the Government of India dated 22.6.2010 at the rate of ₹50/tonne for goods removed from the mines of the petitioner, the landed price of lignite claimed by the petitioner is allowed as under:

	2009-10	2010-11		2011-12	2012-13	2013-14
		1.4.2010 to 30.6.2010	1.7.2010 to 31.3.2011			
Lignite Transfer Price (₹/MT)	1101	1173	1223	1312	1409	1516

59. The Operational norms considered by the petitioner and allowed is as under:

Secondary Oil Consumption	ml/kWh	3.5
Auxiliary Energy Consumption	%	12.00
Gross Station Heat Rate	Kcal/kWh	4000

Mine closure cost

60. The petitioner has submitted that cost of mine Closure has been submitted to Ministry of Coal for approval and the Standing committee appointed by the Ministry of Coal, Government of India has approved the Mine closure Cost. It has also been submitted that the revised calculations of Lignite transfer price would be filed before the Commission along with Auditor Certificate and any excess or shortfall, if any, would be adjusted based on the order of the Commission. Considering the fact that the mine closure is obligatory on the part of the user of

mine, we allow the estimated cost of mine closure as considered by the petitioner in the lignite transfer price, subject to adjustment, as and when the mine closure cost is approved by the Ministry of Coal, Government of India.

Application fees and other charges

61. The petitioner has sought approval for the reimbursement of the fee of ₹12.00 lakh each for the years 2009-10, 2010-11 and 2011-12 deposited by it towards filing fee for the tariff petition and the expenses amounting to ₹1,93,821/-incurred for publication of notices in newspapers in connection with the said petition.

62. In terms of Regulation 42 of the 2009 Tariff Regulations and in line with our decision contained in order dated 11.1.2010 in Petition No. 109/2009, the expenses towards filing of tariff application and the expenses incurred on publication of notices are to be reimbursed. Accordingly, the expenses incurred by the petitioner for petition filing fees for the years 2009-10, 2010-11 and 2011-12 and for publication of notices in connection with the present petition shall be directly recovered from the beneficiaries, on *pro rata* basis. The filing fees in respect of the balance years would be recoverable as and when paid by the petitioner in terms of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2008 and /or its amendments thereof.

63. In addition to the above, the petitioner is entitled to recover other taxes etc., levied by statutory authorities in accordance with the 2009 Tariff Regulations, as applicable.

64. Petition No. 20/2010 is disposed of in terms of the above.

Sd/-	*Sd/-*	*Sd/-*	*Sd/-*
[M.DEENA DAYALAN] MEMBER	**[V.S.VERMA] MEMBER**	**[S.JAYARAMAN] MEMBER**	**[DR.PRAMOD DEO] CHAIRPERSON**