

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri Ashok Basu, Chairperson**
2. **Shri K.N.Sinha, Member**
3. **Shri Bhanu Bhushan, Member**
4. **Shri A.H. Jung, Member**

Petition No 162/2004

In the matter of

Approval of tariff in respect of National Capital Thermal Power Station, Dadri for the period from 1.4.2004 to 31.3.2009.

And in the matter of

National Thermal Power Corporation Ltd.

.....**Petitioner**

Vs

1. Uttar Pradesh Power Corporation Ltd., Lucknow
2. Delhi Transco Ltd, New Delhi

..**Respondents**

The following were present

1. Shri V.B.K. Jain, NTPC
2. Shri I.J. Kapoor, NTPC
3. Shri S.D. Jha, NTPC
4. Shri Manoj Saxena, NTPC
5. Shri Shankar Saran, NTPC
6. Shri D.G. Salpekar, NTPC
7. Shri A.S. Sardana, NTPC
8. Shri Gaurav Maheshwari, NTPC
9. Shri R. Singhal, NTPC
10. Shri S.K. Samvi, NTPC
11. Shri Balaji Dubey, NTPC
12. Shri T.K. Srivastava, UPPCL
13. Shri B.K. Paliwal, DTL
14. Shri V.K. Malhotra, DTL

**ORDER
(DATE OF HEARING : 21.2.2006)**

This petition has been filed by the petitioner, a generating company owned or controlled by the Central Government for approval of tariff in respect of National

Capital Thermal Power Station, Dadri (hereinafter referred to as “the generating station”) for the period from 1.4.2004 to 31.3.2009 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004, (hereinafter referred to as “the 2004 regulations”)

2. The generating station with a total capacity of 840 MW comprises of 4 units of 210 MW each. The first unit of the generating station was declared under commercial operation on 1.1.1993 and the fourth unit on 1.12.1995.

3. The tariff for the generating station for the period ending 31.3.2004 was approved by the Commission vide its order dated 20.7.2004 in Petition No 40/2001 based on capital cost of Rs. 164181 lakh as on 31.3.2001 and included FERV up to that date. In the petition, the petitioner had claimed additional capitalisation of a total expenditure of Rs. 3979 lakh on works for the years 2001-02, 2002-03 and 2003-04 based on budgetary projections. This additional capitalisation claimed by the petitioner was not considered in the order dated 20.7.2004 for tariff determination. Subsequently, vide order dated 12.5.2005 in Petition No 180/2004, the Commission approved the additional capital expenditure of Rs. 7235 lakh for the period 1.4.2001 to 31.3.2004 and FERV of Rs.206 lakh as claimed by the petitioner and arrived at the capital base of Rs. 171622 lakh as on 31.3.2004, for the purpose determination of tariff as on 1.4.2004, against the aggregated approved cost of Rs. 171718 lakh. The Commission further ordered that the cost of servicing of investment on the additional expenditure would be reimbursed to the petitioner during tariff for 2004-09. The details of the capital expenditure approved are given hereunder:

(Rs. in lakh)

2001-2002	3186
2002-2003	2224
2003-2004	1825
Total	7235

4. Consequent to approval of the additional capital expenditure by order dated 12.5.2005, the petitioner filed the amended petition to claim tariff for the period 2004-05 to 2008-09. This order is in the context of the amended petition subsequently filed.

5. The details of the fixed charges claimed by the petitioner in the present petition are given hereunder:

(Rs. in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	2340	1762	1201	720	367
Interest on Working Capital	3840	3857	3875	3905	3922
Depreciation	6625	6625	6625	6625	6625
Advance against Depreciation	0	0	0	0	0
Return on Equity	12014	12014	12014	12014	12014
O & M Expenses	8736	9089	9450	9828	10223
TOTAL	33554	33345	33164	33091	33150

6. The details of working capital furnished by the petitioner and its claim for interest thereon are summarised hereunder:

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Coal Stock	13806	13806	13806	13843	13806
Oil stock	345	345	345	345	345
O & M expenses	728	757	788	819	852
Spares	2838	3008	3189	3380	3583
Receivables	19743	19708	19678	19704	19676
Total Working Capital	37460	37624	37806	38091	38262
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest on Working capital	3840	3857	3875	3905	3922

7. In addition, the petitioner has claimed energy charges. The petitioner initially claimed energy charges @ 146 paise/kWh. Later on, based on escalated coal price with effect from 15.6.2004 the petitioner claimed energy charges @ 158.50 paise/kWh. The energy charges claimed are subject to adjustment for fuel price.

8. The reply to the petition was filed by the Uttar Pradesh Power Corporation Ltd. The other respondent has not filed its reply. The petitioner has published notices in accordance with the procedure specified by the Commission. However, no objections or suggestions have been received in response to these notices.

9. Before we consider the details of tariff, a general issue regarding treatment of depreciation when it exceeds repayment of loan in a year raised by the beneficiaries in certain other petitions filed by the petitioner is being considered since this is one of the first order for the period 1.4.2004 to 31.3.2009 in a petition filed by the petitioner and this will set precedent for decision in other cases.

10. Before we attempt detailed analysis of the matter, the relevant provisions of the 2004 regulations need to be taken note of. These regulations, *inter alia*, provide as under:

- (a) In case any moratorium period is availed of by the generating company or the transmission licensee, depreciation provided for in the tariff during the years of moratorium is treated as repayment during those years and interest on loan capital is calculated accordingly.

- (b) Depreciation is calculated annually, based on straight line method over the useful life of the asset and at the rates prescribed in the regulations.

The residual life of the asset is considered as 10% and depreciation is allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost is excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset includes additional capitalization on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.

- (c) On repayment of entire loan the remaining depreciable value is to be spread over to the balance useful life of the asset.
- (d) In addition to allowable depreciation, the generating company or the transmission licensee is entitled to Advance Against Depreciation, computed in the manner given hereunder:

AAD = Loan repayment amount as per regulation 21 (i) subject to a ceiling of $1/10^{\text{th}}$ of loan amount as per regulation 20 minus depreciation as per schedule

Advance Against Depreciation is permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year and Advance Against Depreciation in a year is restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

11. From the above, it is to be seen that the 2004 regulations do not contain any express provision as regards the adjustment of depreciation against repayment of loan when it exceeds the amount of repayment in a year. Some of the State utilities in other petitions have in their replies argued that notwithstanding absence of any specific provision for adjustment of excess depreciation against the repayment of loan, the combined reading of the above-noted provisions of the 2004 regulations, leads to an inference that the excess depreciation has to be taken as repayment of loan.

12. In the first instance, we take notice of the historical background. Prior to 1992, the tariff in respect central power sector utilities was determined through the Power Purchase Agreements signed by such utilities with the State beneficiaries, as single part tariff. The Central Government constituted a Committee under the Chairmanship of Shri K.P. Rao, the then Member CEA to formulate principles and normative parameters for working out tariff for sale of power from NTPC and NHPC generating stations. The Committee in its report, *inter alia*, recommended two-part tariff and merit order operation of the power plant. The Committee recommended that the loans would be progressively reduced to the extent these have been repaid as per repayment schedule and once the loans are totally repaid and reduced to zero, the tariff would not include any interest element and the equity element would remain constant up to that stage. It was further provided in the report that after the loans were reduced to zero, equity component would progressively be reduced to the extent of further depreciation and return on equity would be determined on the basis of the equity component as reduced from year to year. The Central Government vide Department of Power letter dated 5.7.1991 conveyed that the Committee's report should be adopted without any modification with effect from 1.4.1991. Incidentally, till

that time there was no specific provision in law under which the Central Government could lay down norms for determination of tariff though as owner of the petitioner and NHPC, it could issue suitable guidelines to these utilities.

13. With effect from 15.10.1991 section 43A was introduced in the Electricity (Supply) Act, 1948, which enabled the Central Government and CEA to prescribe financial and operational norms respectively for determination of tariff. The newly added section 43A (2) also empowered the Central and State Governments to determine the terms, conditions and tariff for sale of electricity in respect of the generating companies wholly or partly owned by these Governments. Despite the fact that the Central Government had decided to adopt the report without any modification, the particular recommendation regarding reduction of equity was not given effect to either in the general notification dated 30.3.1992 issued under section 43A (2) of the Electricity (Supply) Act, 1948 or the project-specific notifications in respect of NTPC and NHPC generating stations. On the question of interest on loan it was provided in the notifications that interest on loan capital would be computed on the outstanding loans, including the schedule of repayment, as per the financial package approved by CEA. It was further provided that return on equity would be computed on the paid up and subscribed capital. Under the notifications, depreciation was recoverable in tariff based on the rates of depreciation notified by the Central Government from time to time.

14. The terms and conditions prescribed by the Central Government were continued up to 31.3.2001. With effect from 1.4.2001, the terms and conditions for determination of tariff as contained in the Central Electricity Regulatory Commission

(Terms & Conditions of Tariff) Regulations, 2001 (the 2001 regulations) became applicable. The 2001 regulations provided that interest on loan capital would be computed on the outstanding loans, taking into account the schedule of repayment as per the financial package approved by CEA or an Appropriate Agency. It was provided that return on equity would be computed on the paid up and subscribed capital. It would thus be seen that as regards interest on loan and return on equity, the provisions of the notifications earlier issued by the Central Government were generally retained. However, certain changes were made as regards recovery of depreciation. In the 2001 regulations it was provided that the value base for the purpose of depreciation would be the historical cost of the asset and would be calculated annually as per straight line method at the specified rates. It was further provided that total depreciation during the life of the project would not exceed 90% of the approved original cost and on repayment of loan, the remaining depreciable value would be spread over the balance useful life. A new concept of Advance Against Depreciation was made applicable to thermal power generating stations. According to this, Advance Against Depreciation was permitted in addition to allowable depreciation where originally scheduled loan repayment exceeded the depreciation allowable. Therefore, under the 2001 regulations for the first time, some linkage was established between depreciation and the repayment of loan. The Commission in its order dated 20.12.2000 gave the following reasons for allowing Advance Against Depreciation:

“It is worthwhile to bring about uniformity in the method of charging depreciation across the entire electricity sector covering the thermal and hydro generation as well as transmission. This could be achieved either by providing further accelerated depreciation for hydro and transmission projects or by providing advance against depreciation for repayment of loans in the case of thermal and transmission projects as well. Along with extending advance against depreciation, it is appropriate that the depreciation rates would then have to be linked to the fair life of the various assets. Thus, depreciation rates which were

prevailing before 1992 could broadly become the relevant rates subject of course to any revision in estimation of useful life of the asset which was done in 1992 and 1994. This would smoothen out the tariff, reduce tariff shocks due to excessive front loading of tariff, bring uniformity of depreciation rates across various utilities etc. As far as the utilities are concerned, their debt service obligations are to be fully met subject to application of test of prudence with regard to the duration of loan which has been recognised as 12 years in the case of existing hydro stations. The utilities would also do well to manage their finance by resorting to refinancing etc by which they can create opportunities for optimising their financing cost and reduce interest burden, which shall accrue to them exclusively.

We do recognise that the above may result in some reduction in the cash flow to utilities which are presently using accelerated depreciation. However, no utility shall suffer on account of lack of funds for repayment of loans as the concept of advance against depreciation is a flexible measure. It should be ensured that once the loans are repaid the depreciation rates are readjusted to spread the balance depreciable value over the balance life of the assets.”

15. The terms and conditions as contained in the 2001 regulations were valid up to 31.3.2004. Therefore, the Commission undertook an exercise for formulation of terms and conditions for determination of tariff applicable from 1.4.2004. In the first instance, the Commission had invited views of the stakeholders and other interested persons on the 2001 regulations. In response, a suggestion was made that the loan repayment should match the depreciation because in some cases loan repayment could start later due to moratorium period. It was also suggested that the provision for Advance Against Depreciation should be omitted or it should be provided only when the cumulative depreciation allowable is less than the original scheduled loan repayment on cumulative basis. The State utilities had also raised the issue of reduction of equity corresponding to recovery of depreciation after the loan is fully repaid, as recommended by the K.P. Rao Committee. These aspects were deliberated in the Discussion Paper on terms and conditions of tariff circulated by the Commission in June 2003. On further consideration of the responses received on the Discussion Paper, the Commission formulated draft regulations on the terms and

conditions of tariff applicable from 1.4.2004, elaborately dealing with the genesis for the provisions made therein. The draft regulations provided that interest on loan capital would be computed duly taking into account the schedule of repayment and actual interest rate. It was provided that in case of the existing projects, the normative loan outstanding would be considered as the opening loan and the repayment would be worked out on normative basis. On the question of return on equity, the suggestion made by the State utilities for its reduction corresponding to depreciation recovered was not incorporated in the draft regulations. As regards depreciation and Advance Against Depreciation, the provisions made in the 2001 regulations were generally retained in the draft regulations.

16. The suggestions and objections received on the draft regulations were considered by the Commission in its order dated 29.3.2004. In response to the draft regulations, the State utilities had pleaded that in the past, central power sector utilities contracted loans with a moratorium period extending beyond the date of commercial operation and in all such cases the interest on loan was passed on to the beneficiaries without considering any repayment during the moratorium period. This issue was considered threadbare and the Commission decided that in case any moratorium period is availed of by the central power sector utilities, the repayment during such period should be reckoned as depreciation provided in tariff during that year and the interest on loan would be calculated accordingly. The relevant extract from the order is placed below:-

“89. We have also applied our mind to the issue of moratorium period after the commercial operation date. The effect of moratorium period is to increase the liability on account of interest on loan. In case the loan is repaid from the date of commercial operation, the interest liability would be going down on a

year to year basis. We are, therefore, of the view that the moratorium period only benefits the central power sector utilities at the cost of the beneficiaries. We are keen to correct this situation and accordingly we have decided that in case any moratorium period is availed of by the central power sector utilities, the depreciation shall be reckoned as repayment during such moratorium period and the interest on loan shall be calculated accordingly. This arrangement is equitable to both i.e. the central power sector utilities and the beneficiaries inasmuch as the central power sector utilities would have sufficient cash flows during the moratorium period of loans, while the beneficiaries would get the benefit of reduction in the interest.”

17. The above decision of the Commission has been notified in the 2004 regulations, as given at para 10(a) above. In this manner, the 2004 regulations moved towards further strengthening the bond between depreciation and loan repayment and this has brought material change in the position on the nexus between the two.

18. It would, however, be seen that when the terms and conditions for determination of tariff applicable from 1.4.2004 were being formulated, the issue was raised on behalf of the State beneficiaries to co-relate depreciation with repayment of loan so that depreciation recovered should be treated as repayment in case of loans with moratorium period. The issue of adjusting excess depreciation against repayment of loan generally was not raised or considered or decided.

19. The argument for adjusting excess amount of depreciation against repayment of loan is that the 2004 regulations provide for considering depreciation against repayment of loan where there is a moratorium period. The 2004 regulations also provide for Advance Against Depreciation where depreciation is less than the amount of repayment, (subject to 1/10th of the gross loan) to provide for cash flow to facilitate repayment. It has been urged that though the 2004 regulations are silent on the

question of adjustment of depreciation, when depreciation exceeds repayment amount, provision has to be read into these regulations by implication, that being a situation in between the two positions expressly covered. It is also urged that unless the provision is so implied, the central power sector utilities, by not repaying the loans or contracting loans with longer tenor, be able to recover depreciation at accelerated rates, since so long as loan is outstanding, and is not fully paid, depreciation is recoverable in tariff based on the depreciation rates specified by the Commission and after entire repayment of loan, the amount of depreciation each year gets considerably reduced, because in such case, balance recoverable depreciation is spread over the balance useful life of the asset, in accordance with para 10(c) above.

20. There is a well known principle of statutory interpretation called "*expressio unius est exclusio alterius*" which means that express enactment shuts the door to further implication. This has been interpreted to mean that where an expressly prescribed one or more particular modes of dealing with property are provided, such expression always excludes any other mode, except as specifically authorised. It has, however, been held that for application of the principle it is not enough that the express and the tacit are incongruous; it must be clear that they cannot be reasonably be intended to co-exist. The courts have observed that the rule has to be applied with great caution for it is neither conclusive nor of universal application. The Hon'ble Supreme Court in *Asstt Collector of Central Excise Vs National Tobacco Co.* [(1972) 2 SCC 560] observed that the rule, is often a valuable servant, but a dangerous master and further held that the rule is subservient to the basic principle that courts must endeavour to ascertain the legislative intent and purpose, and then adopt a rule of construction which effectuates rather than the one that may defeat them. Maxwell on Interpretation

of Statutes (12th Edition – Page 296) has stated that “the maxim ought not be applied when its application, having regard to the subject-matter to which it is to be applied, leads to inconsistency and injustice”.

21. The strict application of the principle will lead to the conclusion that when depreciation recovered exceeds the amount of repayment, the excess amount cannot be considered as repayment since the express provisions in the 2004 regulations are made for other purposes, and not for this purpose.

22. But, such an interpretation will appear to be inconsistent with the other provisions of the 2004 regulations and will do injustice to the State beneficiaries. The 2004 regulations provide that whenever the repayment amount exceeds the depreciation recovered, excess amount is to be allowed as Advance Against Depreciation. The converse of it should also be taken as true, which would mean that where depreciation exceeds the actual repayment, the excess amount is taken as repayment of loan; otherwise the State beneficiaries will be put to hardship and will be subjected to injustice. It is also to be noted that under the 2004 regulations when there is no actual repayment, (as during the moratorium period) the depreciation recovered is adjusted against loan repayment. Non-adjustment of depreciation against repayment of loan where depreciation is more will lead to illogical results. For example, where amount of repayment is only nominal, depreciation is not adjusted against repayment of loan, but when repayment is 'nil', depreciation is considered as repayment of loan. This interpretation may afford opportunity to the central power sector utilities for maneuvering their affairs in such a manner that they contract loans in such a manner that the loan repayments, howsoever small in amount, always

remain outstanding. This cannot be the intention of the 2004 regulations which were based on equitable considerations, as extracted at para 16 above. Thus, rigid observance of the maxim "*expressio unius est exclusio alterius*" in this case would lead to a wholly irrational situation, make other provisions of the 2004 regulations inconsistent and absurd, and result in injustice. Therefore, strict interpretation of the 2004 regulations based on the rule should not be permitted. It was an omission not to consider the matter in the context of the issue presently before us. The conclusion, therefore, is that when depreciation recovered in a year is more than the amount of repayment during that year, the entire amount of depreciation is to be considered as repayment of loan for tariff computation. This interpretation will coexist with the specific provisions of the 2004 regulations, adverted to at para 10 above, and will be in consonance with the intent and object the provision of these regulations which lays down that in case of moratorium, deprecation will be considered as repayment of loan.

23. Similar approach has been adopted by the Commission, while approving tariff in respect of the transmission assets of PGCIL, and in the interest of consistency and continuity of approach same methodology needs to be followed in case of the petitioner also.

CAPITAL COST

24. As per the second proviso to Regulation 17 of the 2004 regulations in case of the generating stations existing up to 31.3.2004, the capital cost admitted by the Commission for determination of tariff prior to 1.4.2004 shall form the basis for determination of tariff.

25. The petitioner has considered the capital expenditure of Rs. 171622.50 lakh after accounting for additional capitalization of Rs. 7235 lakh on works already approved and Rs. 206.00 lakh on account of FERV of for the period 1.4.2001 to 31.3.2004 over the capital expenditure of Rs. 164181 lakh admitted by the Commission in the order dated 20.7.2004 *ibid*. The details of FERV claimed by the petitioner are as follows:

(Rs. In lakh)				
Year	2001-02	2002-03	2003-04	Total
FERV	(-)30	236.00	0	206.00

26. The petitioner, vide affidavit filed on 15.12.2005 has confirmed that all the assets included in the balance sheet for 2003-04 of the generating station were in use as on 1.4.2004. The petitioner has further submitted that the assets that will be out of use in the tariff period 2004-09 will be decapitalised and the details of such assets not in use/amounts decapitalized shall be furnished to the Commission along with the claims of capitalisation to be filed separately.

27. The Commission vide its order dated 12.5.2005 in Petition No.180/2004 has decided that the opening capital cost (excluding FERV) for the purpose of tariff for the period 2004-09 as on 1.4.2004 shall be Rs.171416 lakh. This has been adopted for the purpose of tariff determination in the present petition. Now we consider the question of additional capitalisation on account of FERV.

FERV/Extra Rupee Liability during the years 2001-04

28. Regulation 1.13 (a) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2001 provided as under:

- (a) Extra rupee liability towards interest payment and loan repayment actually incurred, in the relevant year shall be admissible; provided it directly arises out of foreign exchange rate variation and is not attributable to Utility or its suppliers or contractors. Every utility shall follow the method as per the Accounting Standard-11 (Eleven) as issued by the Institute of Chartered Accountants of India to calculate the impact of exchange rate variation on loan repayment
- (b) Any foreign exchange rate variation to the extent of the dividend paid out on the permissible equity contributed in foreign currency, subject to the ceiling of permissible return shall be admissible. This as and when paid, may be spread over the twelve-month period in arrears

29. Regulation 1.7 of the 2001 regulations further provided that recovery of foreign exchange rate variation would be done directly by the utilities from the beneficiaries without filing a petition before the Commission. In case of any objections by the beneficiaries to the amounts claimed on these counts, they may file an appropriate petition before the Commission.

30. The petitioner's claim for capitalization of Rs.206.00 lakh on account of FERV, is matching with calculations submitted and is in accordance with AS-11 applicable up to 31.3.2004. The respondents have not objected to the petitioner's claim under this head. The claim has accordingly been admitted for tariff calculations.

31. Based on the above, after adjustment of FERV of Rs 206.00 lakh, the gross block as on 1.4.2004 comes to Rs.171622 lakh as per details given hereunder:

(Rs. in lakh)

Capital cost admitted as on 31.3.2001.	164181
Additional Capitalization as approved for the years 2001-2004	7235
FERV admitted for the tariff period 2001-2004	206
Opening Capital cost as on 1.4.2004 for the tariff period 2004-2009	171622

DEBT-EQUITY RATIO

32. Clause (1) of Regulation 20 of the 2004 regulations *inter alia* provides that in case of the existing generating stations, debt-equity ratio Considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff.

33. The Commission, while approving tariff vide its order dated 20.7.2004 in Petition No 40/2001 for the period from 1.4.2001 to 31.3.2004 had considered the normative debt-equity ratio of 50:50. Therefore, for the purpose of present petition, debt-equity ratio of 50:50 has been adopted in the working. Accordingly, an amount of Rs. 85811 lakh has been considered as equity as on 1.4.2004.

TARGET AVAILABILITY

34. The petitioner has considered Target Availability of 80%, based on the provisions of the 2004 regulations. Accordingly, Target Availability of 80 % has been considered for recovery of full fixed charges and computation of fuel element in the working capital for the period from 1.4.2004 to 31.3.2009.

RETURN ON EQUITY

35. As per clause (iii) of Regulation 21 of the 2004 regulations, return on equity shall be computed on the equity base determined in accordance with regulation 20 @

14% per annum. Equity invested in foreign currency is to be allowed a return in the same currency and the payment on this account is made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

36. The petitioner has claimed return on equity of Rs. 85811 lakh after accounting for equity on account of additional capitalization on works and FERV for the period 1.4.2001 to 31.3.2004. This claim has been accepted. The return on equity has been worked out on the average normative equity. The charges payable by the respondents on account of return on equity as under:

(Rs in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Opening Balance	85811	85811	85811	85811	85811
Increase/ Decrease due to FERV	0	0	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0	0	0
Closing Balance	85811	85811	85811	85811	85811
Average	85811	85811	85811	85811	85811
Rate of Return on Equity	14.00%	14.00%	14.00%	14.00%	14.00%
Return on Equity	12014	12014	12014	12014	12014

INTEREST ON LOAN

37. Clause (i) of regulation 21 of the 2004 regulations *inter alia* provides that,-

- (a) Interest on loan capital shall be computed loan-wise on the loans arrived at in the manner indicated in regulation 20.
- (b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan as per regulation 20 minus cumulative repayment as admitted by the Commission for the period up to 31.3.2004. The repayment for the period 2004-09 shall be worked out accordingly on normative basis.
- (c) The generating company shall make every effort to swap the loan as long as it results in net benefit to the long-term transmission customers. The

costs associated with such swapping shall be borne by the long-term transmission customers.

(d) The changes to the loan terms and conditions shall be reflected from the date of such swapping and benefits passed on to the beneficiaries.

(e) In case any moratorium period is availed of by the transmission licensee, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.

38. The fixed charges for the period prior to 1.4.2004 were allowed by the Commission on normative loan. Therefore, the interest on loan has been worked out as under in accordance with the methodology specified by the Commission:

(a) The gross opening normative loan amount has been taken as per the Commission' order dated 20.7.2004 in petition no. 40/2001, to which ACE and FERV for the period 2001-04 have been added.

(b) The cumulative repayment of loan up to 31.3.2004 has also been taken as per Commission's order dated 20.7.2004 in Petition No.40/2001.

(c) The annual repayment amount for the years 2004-05 to 2008-09 has been worked out as follows:

actual repayment during the year x normative net loan at the beginning of the year/ actual net loan at the beginning of the year,

(d) Where the normative re-payment of the year is less than the depreciation of the same year, the re-payment has been considered to the extent of depreciation, as decided above.

- (e) The weighted average rate of interest has been worked taking into account the rate of interest on loans applicable to the loans identified to this project and the same has been applied on the normative average loan during the year to arrive at the interest on loan.
- (f) The petitioner had various GOI loans in its debt portfolio in the year 2001-02. These loans were carrying interest rates in the range of 14% to 17% per annum. All these loans were considered while finalizing the tariff for the period 2001-04. During the financial year 2002-03, the petitioner refinanced these high interest rate bearing GOI loans with Bonds (XIII Series A, XIII Series B and XIV Series). The interest rates applicable to these Bonds are in the range 8.05% to 9.55%. The details of refinancing of loans are given in the table below:

(Rs. In lakh)

Nature of Loan	Bonds – XIII A series	Bonds XIII-B series	Bonds –XIV series
Date of Re-financing	18.4.2002	30.4.2002	1.8.2002
Amount	3871.82	21473.48	16871.99
Rate of Interest including Surveillance fee	9.55% + 0.03%	9.55% + 0.03%	8.05% + 0.03 %
Moratorium period	6 years from 18.4.2002	6 years from 30.4.2002	4 years from 1.8.2002
Repayment period	10 years	10 years	2 years
Re-payment effective from	18. 4.2008	30.4.2008	1.8.2006

The petitioner has considered GOI loans in its tariff calculations. The Commission during the course of hearing had asked the petitioner to submit cost-benefit analysis of the refinanced loans. The petitioner has submitted that because of moratorium period involved in Bonds, there is no benefit to

respondents. The petitioner has submitted analysis comparing interest payable on GOI loans and that payable on Bonds during the tariff period 2004-09. Subsequently, the petitioner submitted analysis on entire life period of debt, as directed by the Commission, wherein the petitioner compared interest payable on GOI loans with interest payable on Bonds, without considering cash outflow due to repayment.

The cost-benefit analysis carried out in the Commission revealed that Bonds are cheaper than GOI loans. For carrying out the Net Present Value (NPV) analysis, cash flow comprising of repayment and interest of GOI loans with that of Bonds was considered at discount factors ranging from 8% to 10% over the life of loan. It was found on analysis that NPV of the refinanced loans (Bonds) is less as compared to that of old GOI loans, indicating that the Bonds in the long run are cheaper than GOI loans.

Thus, the analysis of terms and conditions of Bonds, it has been found that interest on original GOI loans is higher than the interest on Bonds. The 2004 regulations provide that changes to the loans terms and conditions have to be reflected from the date of refinancing and benefit passed on to the beneficiaries. As such, the terms and conditions of refinanced loans have been considered in the present loan computations. The tariff for the past period has not been revised. However, the benefit, if any, accruing as a result of refinancing shall be passed on to the beneficiaries and shall be settled mutually between petitioner and beneficiaries. In case of dispute, any of the parties may approach to the Commission.

(g) Impact of ACE, Interest on loan during the period 2004-09 are calculated considering refinanced loan i.e. Bonds with terms and conditions as applicable to Bonds, including surveillance fee of 0.03% payable to SEBI by NTPC on Bonds.

(h) The loan draws up to 31.3.2004 only have been considered.

39. The necessary calculations in support of weighted average rate of interest are appended below:

CALCULATIONS OF WEIGHTED AVERAGE RATE OF INTEREST

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
GOI LOAN					
Gross Loan opening	70032	70032	70032	70032	70032
Cumulative repayment of loan upto previous year.	27815	27815	27815	27815	27815
Refinance by Bonds XIII A, XIII B And XIV series	42217	42217	42217	42217	42217
Bonds XIII A series (Rs.3228+644 lakhs) on 18.4.2002					
Opening Balance	3872	3872.00	3872.00	3872.00	3872.00
Addition/Drawl	0	0	0	0	0
Repayments	0.00	0.00	0.00	0.00	387.20
Net loan-Closing	3872.00	3872.00	3872.00	3872.00	3484.80
Average Loan	3872.00	3872.00	3872.00	3872.00	3678.40
Rate of Interest	9.58%	9.58%	9.58%	9.58%	9.58%
Interest on loan	370.94	370.94	370.94	370.94	352.39
Bonds XIII B series on 30.4.2002					
Opening Balance	21473	21473.00	21473.00	21473.00	21473.00
Addition/Drawl	0	0	0	0	0
Repayments	0.00	0.00	0.00	0.00	2147.30
Net loan-Closing	21473.00	21473.00	21473.00	21473.00	19325.70
Average Loan	21473.00	21473.00	21473.00	21473.00	20399.35
Rate of Interest	9.58%	9.58%	9.58%	9.58%	9.58%

Interest on loan	2057.11	2057.11	2057.11	2057.11	1954.26
Bonds XIV series on 01.08.2002					
Opening Balance	16872	16872.00	16872.00	8436.00	0.00
Addition/Drawl	0	0	0	0	0
Repayments	0.00	0.00	8436.00	8436.00	0.00
Net loan-Closing	16872.00	16872.00	8436.00	0	0
Average Loan	16872.00	16872.00	12654.00	4218.00	0.00
	8.08%	8.08%	8.08%	8.08%	8.08%
Interest on loan	1363.26	1363.26	1022.44	340.81	0.00
Total Loan					
Opening Balance	42217	42217	42217	33781	25345
Addition/Drawl	0	0	0	0	0
Repayments	0.00	0.00	8436.00	8436.00	2534.50
Net loan-Closing	42217.00	42217.00	33781.00	25345.00	22810.50
Average Loan	42217.00	42217.00	37999.00	29563.00	24077.75
Rate of Interest	8.9805	8.9805	9.0805	9.3660	9.5800
Interest on loan	3791.31	3791.31	3450.49	2768.87	2306.65

40. The computations of interest on notional loan by applying weighted average interest rate are appended hereinbelow:

COMPUTATION OF INTEREST ON LOAN

(Rs. in lakh)

	2004-05	2005-06	2006-07	2007-08	2009-04
Gross loan-Opening	85811	85811	85811	85811	85811
Cumulative repayments of Loans up to previous year	69140	75058	80977	85811	85811
Net loan-Opening	16671	10753	4834	0	0
Increase/ Decrease due to FERV	0	0	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0	0	0
Total	16671	10753	4834	0	0
Repayments of Loans during the year	5918	5918	4834	0	0
Net loan-Closing	10753	4834	0	0	0
Average Net Loan	13712	7794	2417	0	0
Rate of Interest on Loan	8.9805%	8.9805%	9.0805%	9.3660%	9.5800%
Interest on loan	1231	700	219	0	0

DEPRECIATION

41. Sub-clause (a) of clause (ii) of Regulation 21 of the 2004 regulations provides for computation of depreciation in the following manner, namely:

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations. The residual value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government /Commission.
- (iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.
- (iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

42. The petitioner has calculated the weighted average depreciation rate of 3.86% (excluding free hold land) based on the depreciation rates prescribed in Appendix II) to the 2004 regulations.

43. However, on scrutiny of the details submitted by the petitioner along with the petition, it has been observed that the depreciation rates for the following assets adopted by the petitioner do not match with the depreciation rates as prescribed in the 2004 regulations:

A/c Code as per Form-12	Asset	Depreciation by in the petitioner	Depreciation rate as per the schedule
512309	Other electrical installations	11.25%	3.6%
513102	Satellite Communication system	11.25%	6%

44. Further, the list of assets in Form-12 includes “assets not owned by the company” to the tune of Rs.984 lakh with depreciation rate of 25%. The petitioner has clarified that it has adopted depreciation rate of 25% as per its accounting practice according to which the expenditure on assets not owned by it is to be amortized during four years’ period, irrespective of useful life of the asset. We have considered the matter. The depreciation rate claimed by the petitioner will result into recovery of accelerated depreciation. Therefore, we have allowed the depreciation rate corresponding to useful life of these assets furnished by the petitioner.

45. The gross depreciable value of the asset, as per (ii) above, is $0.9 \times (\text{Rs. } 171622 \text{ lakh} - \text{Rs. } 6023.60 \text{ lakh}) = \text{Rs. } 149038.56 \text{ lakh}$. Cumulative depreciation and AAD recovered in tariff up to 31.3.2004 is Rs. 91654 lakh. Remaining depreciable value as on 1.4.2004 is thus Rs.57384.56 lakh.

46. The entire loan gets repaid in 2006-07 as shown in the table below para 40 above. Therefore, depreciation for the years 2007-08 and 2008-09 has been spread

over to the balance useful life of the generating station. The balance useful life of the generating station works out to 14.12 years as on 1.4.2007.

47. Accordingly, for the period 1.4.2004 to 31.3.2007 the depreciation works out to Rs. 5918 lakh each year by applying rate of depreciation of 3.45% as shown below and from 1.4.2007 to 31.3.2009 depreciation works out to Rs. 2807 lakh each year by distributing remaining depreciation over balance useful life:

(Rs. in lakh)						
Details of Depreciation	Up to 31.3.2004	2004-05	2005-06	2006-07	2007-08	2008-09
As per order dated 20.7.2004	164181					
Addition during 2001-04 due to Additional Capitalisation	7235					
Addition during 2001-04 due to FERV	206					
Gross Block as on 31.3.2004	171622					
Rate of Depreciation		3.45%	3.45%	3.45%		
Depreciable Value	149038.56	57386	57386	57386	57386	57386
Balance Useful life of the asset		17.12	16.12	15.12	14.12	13.12
Remaining Depreciable Value		57386	51468	45550	39631	36824.
Depreciation		5918	5918	5918	2807	2807

ADVANCE AGAINST DEPRECIATION

48. As per sub-clause (b) of clause (ii) of Regulation 56 of the 2004 regulations, in addition to allowable depreciation, the transmission licensee is entitled to Advance Against Depreciation, computed in the manner given hereunder:

AAD = Loan repayment amount as per regulation 56 (i) subject to a ceiling of 1/10th of loan amount as per regulation 54 minus depreciation as per schedule

49. It is provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. It is further provided that Advance Against Depreciation in a year shall

be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

50. The petitioner has not claimed Advance Against Depreciation. Therefore, the petitioner's entitlement to Advance Against Depreciation is "nil".

O&M EXPENSES

51. The 2004 regulations have prescribed the following O&M expense norms for 210 MW units-

	(Rs. lakh /MW)				
Year	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses for 200/210 MW units	10.40	10.82	11.25	11.70	12.17

52. The petitioner has claimed O&M Expenses are as detailed below:

Years	2004-05	2005-06	2006-07	2007-08	2008-09
O&M Expenses (Rs in. lakh)	8736	9089	9450	9828	10223

53. The petitioner has prayed for a specific deviation pertaining to water charges in O&M. The petitioner has submitted that in the past years, the State Governments have been resorting to manifold increase in the rates of water charges / royalty payable, which is not normally based on common commercial principles. Therefore, this increase cannot be covered under the normal O&M expenses allowed in the tariff. The petitioner has, therefore, submitted that any increase in the rates of water

charges / royalty etc. by more than 4% per annum over the rates prevailing on 31.3.2004 should be additionally payable by the respondent beneficiaries.

54. The normative O&M expenses were finalized by the Commission after going through the transparent process of hearing and consulting all concerned and were based on the data furnished by the concerned utilities for different components of O&M, including water charges. Further, an escalation of 4% per year is inbuilt in the normative O&M expenses specified by the Commission. There may be other heads in O&M expenses where actual expenses may be less than the normative expenses specified by the Commission. Therefore, we do not consider it to be justified to allow increase under one head, that is, water charges in isolation. As such, recovery of additional O&M expenses on account of any increase in the rates of water charges / royalty etc. during tariff period cannot be allowed. However, the petitioner is at liberty to approach the Commission in accordance with law for recovery of additional water charges with proper justification and details of actual expenses recovered under other heads, if State Governments resort to abnormal increase in the rates of water charges / royalty during the tariff period.

55. Based on above discussion, the year-wise O&M expenses for the generating station work out as follows-

(Rs. in lakh)

Year	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses	8736.00	9088.80	9450.00	9828.00	10222.80

56. The petitioner has submitted that the wage revision of its employees is due with effect from 1.1.2007. Therefore, O &M expenses should be subject to revision on

account of revision of employee cost from that date. In the alternative, it has been prayed that the increase in employee cost due to wage revision be allowed as per actuals for extra cost to be incurred consequent to wage revision. We are not expressing any view, as this issue does not arise for consideration at this stage. The petitioner may approach for a relief in this regard at an appropriate stage in accordance with law.

INTEREST ON WORKING CAPITAL

57. In accordance with clause (v) of Regulation 21 of the 2004 regulations, working capital in case of Coal based/Lignite-fired generating stations shall cover:

- (i) Cost of coal or lignite for 1½ months for pit-head generating stations and two months for non-pit-head generating stations, corresponding to the target availability;
- (ii) Cost of secondary fuel oil for two months corresponding to the target availability;
- (iii) Operation and Maintenance expenses for one month;
- (iv) Maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation; and
- (v) Receivables equivalent to two months of fixed and variable charges for sale of electricity calculated on the target availability.

58. Under the 2004 regulations, the rate of interest on working capital shall be on a normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later.

Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

59. Working capital has been calculated considering the following elements:

- (a) **Coal stock:** The petitioner in the amended petition has revised its claim for interest on working capital from July, 2004 onwards urging that the price of coal has increased w.e.f 15.6.2004. As per provisions of the 2004 regulations, interest on working capital has to be frozen as normative number at the beginning of the tariff setting based on the price and GCV of the fuel during preceding three months prevailing applicable rate of interest and is not to be revised based on subsequent revision of the price of fuel or applicable rate of interest. As such, the prayer of the petitioner to allow interest on working capital based on escalated fuel price w.e.f 15.6.2004 cannot be accepted. The coal stock has been worked out for two months on the basis of operational parameters given in the 2004 regulations. The fuel cost allowed in working capital is given hereunder:

	2004-05	2005-06	2006-07	2007-08	2008-09
Weighted Avg. GCV of Coal (kCal/kg)	3682.61	3682.61	3682.61	3682.61	3682.61
Heat Contribution by Coal (kCal/kwh)	2480.04	2480.04	2480.04	2480.04	2480.04
Specific Coal Consumption (kg/kwh)	0.67	0.67	0.67	0.67	0.67
Annual Requirement of Coal (MT)	3964390	3964390	3964390	3975251	3964390
Coal Stock (2 months) (MT)	660732	660732	660732	662542	660732
Weighted Avg. Price of Coal (Rs./MT)	1922.62	1922.62	1922.62	1922.62	1922.62
Coal Stock-2 months- (Rs. in lakh)	12703.36	12703.36	12703.36	12738.16	12703.36

- (b) **Oil Stock:** The petitioner has also considered HSD/LDO in its computations on working capital. HSD/LDO are used only during cold boiler start up. Hot start ups and Flame stability during low load conditions are taken care of by HFO, which is the main secondary fuel oil. Since HFO is the main secondary fuel oil, it has been considered for the computation of working capital requirements and base rate of energy charge. The oil stock for 2 months as per the operational parameters and weighted average price of oil has been considered, the details of which are extracted below:

	2004-05	2005-06	2006-07	2007-08	2008-09
Weighted Avg. GCV of Oil (kcal/Lit.)	9980.00	9980.00	9980.00	9980.00	9980.00
Heat Contribution by Oil (kcal/kWh)	19.96	19.96	19.96	19.96	19.96
Annual Requirement of Oil (ltrs)	11773440	11773440	11773440	11805696	11773440
Oil Stock(2 Months) (KL)	1962.24	1962.24	1962.24	1967.62	1962.24
Weighted Avg. Price of Oil (Rs./KL)	13610.00	13610.00	13610.00	13610.00	13610.00
Oil Stock-2 Months- (Rs. in lakh)	267.06	267.06	267.06	267.79	267.06

- (c) **O&M Expenses:** O&M expenses for working capital have been worked out for 1 month of O&M expenses approved above are considered in tariff of the respective year:
- (d) **Spares:** The petitioner has calculated the value of maintenance spares for the purpose of working capital considering additional capital expenditure in respective years after the date of commercial operation. The amount claimed for maintenance spares for the purpose is given below :

(Rs.in lakh).

Year	2004-05	2005-06	2006-07	2007-08	2008-09
Amount claimed for maintenance spares	2838	3008	3189	3380	3583

The spares requirement has been worked out by us based on the capital cost of Rs. Rs. 153988 lakh (including initial spares of Rs.4205 lakh.) as on 31.3.96 (closing date of financial year of the date of commercial operation). 1% of this cost has been escalated at the rate of 6% per annum to arrive at permissible spares consumption for the relevant year. The value of spares as on 1.4.2004 works out to Rs. 18218 lakh.

- (e) **Receivables:** The receivables have been worked out on the basis of two months of fixed and variable charges. The supporting calculations in respect of receivables are tabulated hereunder:

Computation of receivables component of Working Capital

	2004-05	2005-06	2006-07	2007-08	2008-09
Variable Charges					
Coal (Rs/kWh)	1.4228	1.4228	1.4228	1.4228	1.4228
Oil (Rs/kWh)	0.0299	0.0299	0.0299	0.0299	0.0299
Rs./kWh	1.4527	1.4527	1.4527	1.4527	1.4527
Variable Charges per year	77823	77823	77823	78036	77823
Variable Charges -2 months (Rs in lakh)	12970.42	12970.42	12970.42	13005.95	12970.42
Fixed Charges - 2 months (Rs in lakh)	5235	5208	5191	4695	4764
Receivables (Rs in lakh)	18206	18178	18161	17701	17734

60. The average SBI PLR of 10.25% as on 1.4.2004 has been considered as the rate of interest on working capital during the tariff period 2004-05 to 2008-09.

61. The necessary details in support of calculation of interest on working capital are appended below:

Calculation of Interest on Working Capital

(Rs. in lakh)

	2004-2005	2005-2006	2006-07	2007-2008	2008-09
Coal Stock	12703	12703	12703	12738	12703
Oil stock	267	267	267	268	267
O & M expenses	728	757	788	819	852
Spares	2370	2512	2662	2822	2992
Receivables	18206	18178	18161	17701	17734
Total Working Capital	34274	34418	34582	34348	34548
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest on Working capital	3513	3528	3545	3521	3541

ANNUAL FIXED CHARGES

62. A statement showing summary of the capital cost and other related matters is annexed to this order. The annual fixed charges for the period 1.4.1999 to 31.3.2004 allowed in this order are summed up as below:

(Rs. in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	1231	700	219	0	0
Interest on Working Capital	3513	3528	3545	3521	3541
Depreciation	5918	5918	5918	2807	2807
Advance Against Depreciation	0	0	0	0	0
Return on Equity	12014	12014	12014	12014	12014
O & M Expenses	8736	9089	9450	9828	10223
TOTAL	31412	31248	31146	28169	28584

ENERGY/VARIABLE CHARGES

63. The petitioner has claimed the rate of energy charge at 158.50 paise/kWh on the ground that the coal price has increased from Rs.1922.62/MT to Rs.2080.20/MT from 15.6.2004. The Fuel Price Adjustment clause provided in the 2004 regulations takes care of revision of energy charges on subsequent revision of coal price on month to month basis and base rate of energy charge need not be re-worked on the basis of increased coal prices w.e.f 15.6.2004 .Further, it is observed that the rate of energy charge of 146 paise/kWh as originally claimed, is based on weighted. average price of Rs.17573 /KL and GCV of 9488 kcal/L for LDO, procured and burnt during September 2003.

64. The petitioner was asked to furnish the landed price and GCV of HFO. However, the petitioner could not furnish the same. Therefore, the price and GCV of HFO as adopted for FGUTPP Stage –II is being used for the computation of base rate of energy charge.

65. FPA clause provided in the 2004 regulations will take care of the cost of HSD/LDO used by the station on “as consumed basis” on month to month basis. As such, the petitioner is not being denied the reimbursement of HSD/LDO whenever used.

66. The fuel price and GCV furnished by the petitioner for the month of Jan, Feb, and March 2004 in the petition have been considered for the Base Energy Charge computation. The Base Energy Charges (BEC) computed based on the data furnished by the petitioner are summarised below:

Computation of Energy Charges

Description	Unit	As considered
Capacity	MW	840.00
No. of operating hours corresponding to PLF 80%	80%	7008.00
Gross Station Heat Rate	kCal/kWh	2500.00
Specific Fuel Oil Consumption	MI/kWh	2.00
Aux. Energy Consumption	%	9.00
Weighted Average GCV of HFO	kCal/l	9980.00
Weighted Average GCV of Coal	kCal/Kg	3682.61
Weighted Average Price of Coal	Rs./MT	1922.62
Rate of Energy Charge from Sec. Fuel Oil	Paise/kWh	2.72
Heat Contributed from SFO	kCal/kWh	19.96
Heat Contributed from Coal	kCal/kWh	2480.04
Specific Coal Consumption	Kg/kWh	0.67
Rate of Energy Charge from Coal	Paise/kWh	129.48
Rate of Energy Charge ex-bus per kWh Sent	Paise/kWh	145.27

67. The Base Energy Charges have been calculated on base value of GCV, base price of fuel and normative operating parameters as indicated in the above table and are subject to fuel price adjustment. The notification dated 26.3.2004 provides for fuel price adjustment for variation in fuel price and GCV of fuels. Accordingly, the base energy charges approved shall be subject to adjustment. The formula applicable for fuel price adjustment shall be as given below: -

$$\mathbf{FPA = A + B}$$

Where,

- FPA** – Fuel price Adjustment for a month in Paise/kWh Sent out
A – Fuel price adjustment for Secondary Fuel oil in Paise/kWh sent out
B – Fuel price adjustment for Coal in Paise/kWh sent out

And,

$$A = \frac{10 \times (SFC_n)}{(100 - AC_n)} \left\{ (P_{om}) - (P_{os}) \right\}$$

$$B = \frac{10}{(100 - AC_n)} \left[\left\{ (SHR_n) (P_{cm}/K_{cm}) - (P_{cs}/K_{cs}) \right\} - (SFC_n) \left\{ (K_{om} \times P_{cm}/K_{cm}) - (K_{os} \times P_{cs}/K_{cs}) \right\} \right]$$

Where,

SFC_n – Normative Specific Fuel Oil consumption in l/kWh

SHR_n – Normative Gross Station Heat Rate in kCal/kWh

AC_n – Normative Auxiliary Consumption in percentage

P_{om} – Weighted Average price of fuel oil on as consumed basis during the month in Rs./KL.

K_{om} – Weighted average GCV of fuel oils fired at boiler front for the month in Kcal/Litre

P_{os} – Base value of price of fuel oils as taken for determination of base energy charge in tariff order in Rs. / KL.

K_{os} – Base value of gross calorific value of fuel oils as taken for determination of base energy charge in tariff order in Kcal/Litre

P_{cm} – Weighted average price of coal procured and burnt during the month at the power station in Rs. / MT.

- K_{cm} – Weighted average gross calorific value of coal fired at boiler front for the month in Kcal/Kg
- P_{cs} – Base value of price of coal as taken for determination of base energy charge in tariff order in Rs. /MT
- K_{cs} – Base value of gross calorific value of coal as taken for determination of base energy charge in tariff order in kCal/Kg

Impact of additional capitalization for the years 2001-04

68. In Petition No 180/2004 filed by the petitioner for approval of revised fixed charges for additional capitalization for the period 1.4.2001 to 31.3.2004, the Commission has decided that additional capital expenditure be added to the gross block as on 1.4.2001 to arrive at gross block as on 1.4.2004 for the purpose of fixation of tariff for the period 2004-05 to 2008-09. The Commission has further ordered that NTPC would be entitled to earn return on equity @ 16% on equity portion of additional capitalization approved and interest on loan at the rate as applicable during 2001-02 to 2003-04. The return on equity and interest on loan are payable on additional capitalization from 1st April of the financial year following the financial year to which additional capital expenditure relates.

69. Based on the above, the petitioner shall be entitled to recover the following amounts from the respondents through tariff on account of return on equity and interest on loan on additional equity on account of additional capitalisation on works.:

(Rs. in lakh)

IMPACT OF ADDITIONAL CAPITAL EXPENDITURE DURING 2001-02,2002-03 AND 2003-04 NCTPP-DADRI (840 MW)			
CALCULATIONS			(Rs. in lakh)
	2001-02	2002-03	2003-04
1. Additional capitalisation during the year vide order dated 12.5.2005 in Petition No.180/2004	3186.26	2224.17	1824.51
2. Impact from 1st April of financial year following the financial year to which ACE relates.	0	3186.26	5410.43
3. Equity 50% as considered in tariff	0	1593.13	2705.215
4. Loan	0	1593.13	2705.215
5. Actual Rate of Interest after refinancing of Govt. loans		10.96%	9.75%
6. Rate of Equity allowed	16%	16%	16%
IMPACT			
(I) Interest on Loan	0	174.61	263.76
(ii) Return on Equity	0	254.90	432.83
Total		429.51	696.59

70. The petitioner has sought approval for the reimbursement of expenditure of Rs. 126404/- incurred on publication of notices in the newspapers. The petitioner shall claim reimbursement of the said expenditure directly from the respondents in one installment in the ratio applicable for sharing of fixed charges. The petitioner has also sought reimbursement of filing fee of Rs.25 lakh paid. A final view on reimbursement of filing fee is yet to be taken by the Commission for which views of the stakeholder have been called for. The view taken on consideration of the comments received shall apply in the present case as regards reimbursement of filing fee.

71. In addition to the charges approved above, the petitioner is entitled to recover other charges also like incentive, claim for reimbursement of Income-tax, other taxes, cess levied by a statutory authority, and other charges in accordance with the 2004 regulations, as applicable.

72. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's interim directions. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

73. This order disposes of Petition No.162/2004.

Sd/-
(A.H. JUNG)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRPERSON

New Delhi dated the 5th May 2006

Summary Sheet						
Name of the Company				NTPC Ltd.		
Name of the Station				NCTPS Dadri		
Tariff setting Period				2004-09		
Petition No.				162/2004		
Rs. in lakh						
1	Capital Cost of the Project as on 31.3.2001					164181
	Cumulative depreciation recovered as on 31.3.2001					71121
2	Admitted Capital Cost as on 01.04.2004 for Calculation of Debt and Equity					164181
3	Additional Capitalisation(works)					7235
	2001-02		3186.26			
	2002-03		2224.17			
	2003-04		1824.51			
	Total		7234.94			
4	Additional Capitalisation(FERV) No:					207
	2001-02		(-)30.00			
	2002-03		236.5			
	2003-04		0			
	Total		206.5			
5	Total Capital Cost as on 1.4.2004(2+3+4)					171622
6	Means of Finance ¹ :					
	Debt	50.00%	85811			
	Equity	50.00%	85811			
	Total	100.00%	171622			
7	Debt details-Notional Debt (Net) as on 1.4.2004 Notional debt (Net) as on 1.4.2004					16671
	Notional Debt(Gross i.e.50% of 171622)			85811		
	Repayment up to 31.3.2004			69140		
	Balance Debt			16671		
8	Weighted Av. Rate of interest-Calculated					
	2004-05	2005-06	2006-07	2007-08	2008-09	
	8.98%	8.98%	9.07%	9.36%	9.58%	
9	Depreciation recovered up to 31.03.09 :					115022
		Dep	AAD	Total		
	Recovered up to 31.3.2001	71121	0	71121		
	1.4.2001 to 31.4.2004	18333	2190	20523		
	01.4.2004 to 31.3.2009	23368	0	23368		
	ERV Impact From 2001-04	10	0	10		
	Total				115022	
10	Balance Depreciation to be recovered beyond 31.3.2009 :					34017
	Capital cost for the purpose of Depreciation ²			164181		
	ACE + FERV			7441		
	Capital cost as 1.4.2004			171622		
	Less: Land Cost			6024		
				165598		
	90% of Capital Cost as above			149039		
	Cum. Depreciation to be recovered up to 31.03.09			115022		
	Balance			34017		
1	Debt and Equity are notional and not actual as accepted by the Commission during prior tariff period.					
2	The tariff was set by CERC for the period up to 31.03.2001 on GFA basis .The Gross Block as on 01.04.2001 was Rs.164181 lakh only. Cumulative depreciation recovered up to 31.03.2001was Rs.71121 lakh only. Additional Capitalisation amounting Rs.7234.94 lakh approved by the Commission and FERV Rs.206.50 lakh for the period 1.4.2001 to 31.03. 2004 has been added to arrive at capital cost as on 1.04.2004 which works out to Rs.171622 lakh					