

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. Shri Ashok Basu, Chairman
2. Shri G.S. Rajamani, Member
3. Shri K.N.Sinha, Member

Petition No.95/2002

In the matter of

Approval of tariff in respect of Dadri Gas Power Station for the period 1.4.1999 to 31.3.2001.

And in the matter of

National Thermal Power Corporation Ltd.

.... Petitioner

Vs

1. Uttar Pradesh Power Corporation Ltd. Lucknow
2. Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Jaipur
3. Delhi Tansco Ltd, New Delhi
4. Haryana Vidyut Prasaran Nigam Ltd, Panchkula
5. Punjab State Electricity Board, Patiala
6. Himachal Pradesh State Electricity Board, Shimla
7. Power Development Department, Govt of J&K, Jammu
8. Power Department, UT of Chandigarh, Chandigarh
9. Utranchal Power Corporation Ltd, Dehradun

.... Respondents

The following were present:

1. Shri K.K. Garg, GM (Comml.), NTPC
2. Shri T.R. Sohal, NTPC
3. Shri V.K. Padha, DGM (Comml.), NTPC
4. Shri S.D. Jha, Sr. Manager (Comml.), NTPC
5. Smt. Rachna Mehta, Mgr (Comml), NTPC
6. Shri R. Singhal, NTPC
7. Shri D.D. Chopra, Advocate, UPPCL
8. Shri Jayant Verma, UPPCL
9. Shri T.K. Srivastava, EE, UPPCL
10. Shri V.K. Gupta, PSEB
11. Shri T.P.S. Bawa, SE, PSEB
12. Shri G.M. Agarwal, DCE (Comml.), RVPNL
13. Shri J.S. Bhargava, AE(JSP), RVPNL
14. Shri R.K. Arora, XEN/T, HVPN

ORDER
(DATE OF HEARING 27-5-2003)

This petition, as amended, has been filed by the petitioner, NTPC, a generating company owned by the Central Government, seeking the Commission's approval to the revised fixed and variable charges for the period from 1.4.1999 to 31.3.2001 in respect of Dadri Gas Power Station (hereinafter referred to as "Dadri GPS") as under:

Annual Fixed Charges

(Rs. in Lakh)			
	<u>Particulars</u>	1999-2000	2000-01
1.	Revised Fixed Charges		
(i)	Interest on Loan	5842	5444
(ii)	Interest on Working Capital	2645	2877
(iii)	Depreciation	6966	6990
(iv)	Return on Equity	6917	6957
(v)	O & M Expenses	4460	5411
(vi)	Water Charges	18	28
	TOTAL	26848	27707
2.	Revised Variable Charges	26848	27707

2. The tariff for sale of power from Dadri GPS was notified on two-part basis by Ministry of Power vide notification dated 5-5-1999, in exercise of powers under proviso to Section 43 A(2) of the Electricity (Supply) Act, 1948, as it then stood. This notification was valid from 1-4-1994 to 31-3-1999.

3. Clause 2 of the notification dated 5-5-99 *inter-alia* provided that the impact of additional capital expenditure capitalised in each financial year during the tariff period would be determined by the Central Government on finalisation of accounts. Thus, under the notification issued by Ministry of Power, determination of impact of additional capital

expenditure capitalised was to be determined by the Central Government at the end of a financial year when the audited accounts for that year became available.

4. Section 43A(2) of the Electricity (Supply) Act, 1948 was omitted by the Central Government, in exercise of powers under Section 51 of the Electricity Regulatory Commissions Act, 1998 w.e.f. 15-5-1999 and from that date power to regulate tariff of the generating companies owned or controlled by the Central Government came to be vested in the Commission. By that date, the Central Government did not determine the impact of the additional capitalisation on tariff of Dadri GPS for the year 1998-99. With the omission of Section 43A(2) of the Electricity (Supply) Act, 1948 and vesting of power of regulation of tariff in the Commission, the Central Government did not have the jurisdiction to determine the impact of additional capitalisation on tariff. The petitioner filed a petition (No 84/2000) seeking the Commission's approval to the revised fixed charges due to additional capital expenditure capitalization. The petition was disposed of by the Commission's order dated 8.3.2002, wherein the Commission approved the revised fixed charges for the year 1998-99 based on additional capitalisation for that year. However, it was observed that for approval of revised fixed charges for the period from 1.4.1999 to 31.3.2001 the petitioner needed to file a fresh petition. The present petition has accordingly been filed. Initially, the petitioner sought revision of fixed charges only. Subsequently, the petitioner, with the approval of the Commission, filed an amended petition to seek revision of variable charges also. The Commission is in *seisin* of the issue of determination of revised fixed and variable charges against the above backdrop.

5. After the power to regulate tariff in respect of generating stations owned or controlled by the Central Government came to be vested in the Commission, the Commission was to

prescribe the terms and conditions of tariff by virtue of Section 28 of the Electricity Regulatory Commissions Act, 1998, before actual determination of tariff of individual generating stations. These terms and conditions, notified on 26-3-2001 have become applicable w.e.f. 1-4-2001. The Commission also decided that in all cases where the tariff was determined earlier under the Government notifications, the terms and conditions contained in those notifications would continue to apply till 31-3-2001. Beyond that date the terms and conditions notified by the Commission are applicable and tariff is to be determined based on these terms and conditions. Therefore, the revised fixed and variable charges in the present petition are to be determined based on the terms and conditions contained in Ministry of Power notification dated 5-5-1999.

CAPITAL COST

6. The approval for the project was accorded by the Central Government, Ministry of Power vide letter dated 2.11.1994, at a cost of Rs.924.23 crore, excluding working capital margin (WCM) of Rs. 36.09 crore.

7 Ministry of Power while notifying tariff under the notification dated 5.5.1999 considered the project cost of Rs.85912 lakh, as on 31.3.1998. The Commission in its order dated 8.3.2002 in petition No 84/2000 allowed additional capitalisation of Rs. 403.40 lakh for the year 1998-99. Therefore, the total admitted cost of the project, including the initial spares, works out to Rs.86315 lakh, as on 31.3.1999, which is the opening gross block as on 1.4.1999, including the capitalised initial spares, for the purpose of fixation of tariff for the years 1999-2000 and 2000-01.

8. The petitioner has claimed the amounts as detailed below, on account of additional capitalisation during the years 1999-200 and 2000-01:

(Rs.in lakh)		
Financial Year	1999-2000	2000-01
1. New works		
(a) Within the scope of RCE	0.00	0.00
(b) Not within the scope of RCE	30.03	743.16
Total (a+b)	30.03	743.16
2. Balance Payments	272.77	-43.20
Total (1+2)	302.80	699.96

9. Against the above claim, the petitioner has furnished justification for the following expenditure under the New Works:

(Rs. in lakh)		
Particulars	1999-2000	2000-01
New works		
(a) Within the scope of RCE	0.00	0.00
(b) Not within the scope of RCE	28.88	743.10
Total (a+b)	28.88	743.10

10. The following methodology has been adopted while allowing or disallowing the claim of the petitioner for additional capitalisation:

New Works

- (a) The expenditure on any works, which was in the scope of approved project cost but undertaken after the date of commercial operation has been allowed.

(b) The expenditure incurred for the replacement of existing equipment/facility due to technology becoming obsolete or the equipment having outlived its utility in the normal course of operation, has also been allowed for capitalisation.

(c) The expenditure on the works undertaken/on purchase of additional equipment/facility which is giving benefit exclusively to the petitioner without any apparent benefit to the beneficiaries has not been allowed, unless it is found that expenditure was necessary for the benefit of the employees for giving necessary facilities at the remote location of the power project.

(d) Any mandatory expenditure arising out of statutory obligation due to change of law, etc. has been allowed.

Balance Payments

(a) Pertaining to works undertaken or order placed before the date of commercial operation which are presumed to be within the scope of approved project cost have been allowed.

(b) Pertaining to works undertaken or order placed after the date of commercial operation which might have been admitted by the Central Government in the previous tariff period have been allowed.

(c) Pertaining to works undertaken or order placed after the date of commercial operation which has been claimed as new works in the relevant years in the tariff period under consideration and allowed by the Commission, the balance payments in subsequent years pertaining to these new works have also been allowed.

(d) Other balance payments not falling in any of the above categories have been disallowed.

11. The capitalisation of additional expenditure has been allowed in accordance with the above time-tested criterion. Based on above methodology, we allow additional capitalisation as given below:

(Rs. in lakh)		
Particulars	1999-2000	2000-01
1. New works		
(a) Within the scope of RCE	0.00	0.00
(b) Not in the scope of RCE	1.07	86.55
Total (a+b)	1.07	86.55
2. Balance Payments	272.77	-43.20
Total (1+2)	273.84	43.34

12. The capitalisation of capital spares in the financial years 1999-2000 and 2000-01 as per revised accounting standard has not been allowed in line with the Commission's decision in Petition No.31/2002 (Tariff for Singrauli STPS) and other cases decided earlier. The expenditure of Rs.27.81 lakh for the year 1999-2000 and Rs.656.55 lakh for the year 2000-01 against capital spares claimed by the petitioner has been disallowed.

The details of the expenditure not allowed to be capitalized and the reasons therefor are given hereunder:

Ser No	Name of Works	Amount (Rs. in lakh)		Reasons for disallowing
		1999-2000	2000-01	
1.	HPCC Motor	27.81	0.00	Motor has been purchased as spares.
2.	Generator transformer	0.00	305.56	Expenditure is of the nature of capital spares.
3.	Capitalisation of spares	0.00	350.99	Expenditure is on capital spares.
	TOTAL	27.81	656.55	

13. In view of the above, the following capital cost for the purpose of tariff has been allowed:

(Rs. in lakh)			
Ser No	Particulars	1999-2000	2000-01
(i)	Opening project cost as on 1 st April of the year. Including capitalised initial spares	86315	86589
(ii)	Additions during the year due to additional capitalisation	274	43
(iii)	Closing project Cost at the end of the year	86589	86632

DEBT-EQUITY RATIO

14. The petitioner has claimed tariff by considering debt and equity in the ratio of 50:50. It has been submitted by the respondents that debt and equity should be in the ratio of 70:30 as applicable to IPPs. Ministry of Power in its notification dated 5.5.1999 had considered the normative debt-equity in the ratio of 50:50. For the purpose of

calculation of fixed charges for 1999-200 and 2000-2001 in this petition same debt-equity ratio has been adopted for since as per the decision of the Commission, tariff is to be determined based on the terms and conditions contained in Ministry of Power notification dated 5.5.1999.

RETURN ON EQUITY

15. The petitioner has claimed return on equity @ 16% as prescribed by Ministry of Power. The respondents have, however, submitted that that return on equity should be payable at 12%. In case of generating stations, return on equity was charged in tariff @ 12% per annum. However, it was increased to 16% with effect from 1.11.1998. The respondents have contended that there was no justification to increase return on equity from 12% to 16%. The Commission while approving revised fixed charges for the year 1998-99 has already given effect to the decision of Ministry of Power to charge return on equity on the increased rate of 16%. Accordingly, we do not find any justification in support of the issue raised. Accordingly, return on equity @ 16% per annum has been allowed. The charges payable by the respondents on account of return on equity as under:

(Rs. in lakh)

	1997-98	1998-99	1999-2000	2000-01
Opening Balance	42956	42956	43158	43295
Increase/ Decrease due to FERV	0	0	0	0
Increase/ Decrease due to additional capitalisation	0	202	137	22
Closing Balance	42956	43158	43295	43316
Average Equity			43226	43305
Rate of Return on Equity			16.00%	16.00%
Return on Equity			6916	6929

INTEREST ON LOAN

16. The normative loan amount has been worked out as per the debt-equity ratio given in Para 14 above. The petitioner has claimed in the petition the repayment amount of Rs.2651 lakh each year. In accordance with earlier decisions of the Commission, the annual repayment amount for calculation of interest on loan as worked out by the following formula, or as claimed in the petition, whichever is higher, has been considered:

$$\frac{\text{Annual actual repayment during the year} \times \text{normative loan at the beginning of the year}}{\text{Actual loan at the beginning of the year.}}$$

17. On the basis of the formula given above, the repayment amount will be Rs.3317 lakh and 3331 lakh respectively during 1999-2000 and 2000-01. Accordingly, the annual repayment of Rs.3317 lakh and Rs. 3331 lakh respectively during 1999-2000 and 2000-01 as worked out as per the above formula has been considered for the purpose of

calculation of interest on loan. The annual repayment of loan up to 31.3.1998 as per the notification dated 5.5.1999 has been taken into consideration.

18. The petitioner has claimed interest @ 16.41% and 16.40%. respectively during 1999-2000 and 2000-01. However, for the purpose of calculation of amount of interest on loan, the weighted rate of interest of 16.12% and 16.07% has been worked out on the basis of actual rate of interest on actual average loans and the same is applied on the normative average net loan during the year. The necessary details of loan and computation of interest on loan are appended hereinbelow:

	(Rs. in lakh)				
	1996-97	1997-98	1998-99	1999-00	2000-01
Gross loan-Opening	32929	35895	35917	35917	35917
Cumulative repayments of Loans up to previous year	797	797	1786	7105	9756
Net loan-Opening	32132	35098	34131	28812	26161
FERV	0	0	0	0	0
Drawl	2967	22	0	0	0
Total	35098	35120	34131	28812	26161
Repayments during the year	0	989	5319	2651	2651
Net loan closing	35098	34131	28812	26161	23510
Average Net Loan	-	-	-	27487	24836
Rate of Interest on Loan	-	-	-	16.12%	16.07%
Interest on loan	-	-	-	4431	3991

DEPRECIATION

19. The petitioner has claimed depreciation at the rate of 8.07% as allowed in the tariff notification issued by Ministry of Power. The petition has been filed based on the terms and conditions contained in Ministry of Power's notification dated 5.5.1999 and the same rate of 8.07% has been applied by us for calculation of depreciation component of fixed charges from 1.4.1999 to 31.3.2001. Depreciation recovered in tariff from 1992-93 to 1998-99 as notified by Ministry of Power has also been taken into account. Further, the depreciation has been worked out on the opening gross block for the respective year. The amount of depreciation recoverable from respondents in tariff is as shown below:

	As per Ministry of Power Notification						As per the Commission's order in petition No.84/2000	Worked out -for Full Year	
	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01
Capital Cost									
Opening Balance									
Add: Initial Spares									
Total						85912	85912	86315	86589
Increase/ Decrease due to FERV						0	0	0	0
Increase/ Decrease due to Additional Capitalisation						0	403	274	43
Closing Balance						85912	86315	86589	86633
Rate Of Depreciation								8.07%	8.07%
Depreciation recovered in tariff - Original	946	2838	3785	3785	4723	6297	6297		
Depreciation recovered in tariff - Additional Capitalisation							0		
Depreciation recovered in tariff - FERV							0		
Total	946	2838	3785	3785	4723	6297	6297	6966	6988
Cumulative Depreciation recovered in tariff	946	3784	7569	11354	16077	22374	28671	35637	42624

O&M EXPENSES

20. The petitioner has claimed the actual O&M expenses of Rs 4460 lakh and Rs. 5411 lakh as per the audited accounts for the years 1999-2000 and 2000-01. The respondents have submitted that O & M charges should be considered on normative basis in order to reduce their rigorous impact on tariff. The respondents have also contested that water charges claimed by the petitioner should not be allowed separately. In the past Ministry of Power while notifying fresh tariff for old stations of the petitioner, considered the actual O&M expenses of the previous year for tariff fixation purposes. In keeping with the methodology followed by Ministry of Power for other old stations, O&M expenses of Rs.2808 lakh including water charges for the year 1998-99 as per the audited Balance Sheet in respect of Dadri GPS have been considered as the base and an escalation factor of 10% has been applied to work out O&M expenses for the years 1999-2000 and 2000-01. Based on this methodology, the charges payable by the beneficiaries on account of O&M work out to Rs. 3089 lakh for 1999-2000 and Rs. 3398 lakh for 2000-01. The relevant details are given hereunder:

(Rs. in lakh)			
O&M Expenses- Actuals as per Balance Sheet for the year 1998-99		O&M charges with Escalation @10% p.a.	
		1999-2000	2000-01
Generation, administration and other expenses as per Schedule 13 of the Balance Sheet	46145		
Less-Incidental expenditure during construction as per Schedule 16A of the Balance Sheet	0		
Less- Fuel cost included in the above	43931		
Add- C.C. expenses charged to revenue	594		
O & M expenses (including water charges)	2808	3089	3398

INTEREST ON WORKING CAPITAL

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

- (a) Fuel Cost: The cost of one month for supply of gas has been considered in the computations.
- (b) HSD Stock: HSD / Fuel Oil Stock as per the Balance Sheet for the year 1998-99 is Rs. 1374 lakh. As such, the amount of Rs. 1374 lakh has been considered in the working.
- (c) O&M Expenses: O&M expenses for working capital have been considered for one month of the respective year on the same basis as considered by Ministry of Power while fixing tariff vide notification dated 5.5.1999.
- (d) Spares: The petitioner has claimed 40% of the O&M expenses as the cost of spares in the Working Capital. In the Commission's order in Petition No.31/2002 (Fixation of tariff for Singrauli STPS), the value of actual spares for the previous year as per the audited balance sheet was considered. On that analogy, the value of spares for the year 1998-1999 has been considered in the working capital for the years 1999-2000 and 2000-01.
- (e) Receivables: Receivables have been worked out on the basis of two months' fixed and variable charges. The fixed and variable charge components of the receivables are based on the calculations for the relevant tariff period. For the purpose of variable charges, cost of only two months' gas has been considered and the price of HSD has not been considered as it was not so considered in working out the receivables by Ministry of Power in notification dated 5.5,1999 for Dadri GPS.

22. Ministry of Power in its notification had considered the working capital margin of Rs.3609 lakh. The same has been adopted for the purpose of calculating working capital for the years 1999-2000 and 2000-01. 50% of the working capital margin has been treated as equity and remaining 50% has been treated as loan by retaining the debt-equity ratio of 50:50 and return on equity and interest is allowed accordingly.

23. The petitioner has claimed interest at the rate of 12.50% on the working capital. While allowing interest on Working Capital, the average SBI PLR of 12% during 1999-2000 and of 11.50% during 2000-01 have been considered as the rates of interest on working capital, as done in other cases, including those pertaining to the petitioner. Based on the above methodology, the interest on working capital payable by the respondents to the petitioner during 1999-2000 and 2000-2001 shall be Rs. 1982 lakh and 1920 lakh respectively. The necessary details in support of calculation of Interest on Working Capital are appended below:

	(Rs. in lakh)	
	1999-2000	2000-01
Fuel Cost	3138	3138
HSD stock	1374	1374
O & M expenses	257	283
Spares	163	163
Receivables	10361	10318
Total Working Capital	15293	15276
Working Capital Margin (WCM)	3609	3609
Total Working Capital allowed	11684	11667
Rate of Interest	12.00%	11.50%
Interest on allowed Working Capital	1402	1342
Interest on WCM	291	290
Return on WCM	289	289
Total Interest on Working Capital	1982	1920

ANNUAL FIXED CHARGES

24. The revised annual fixed charges for the period 1.4.1999 to 31.3.2001 allowed in this order are summed up as below:

(Rs. in Lakh)			
	Particulars	1999-2000	2000-01
1	Interest on Loan	5555	5017
2	Interest on Working Capital	1982	1920
3	Depreciation	6966	6988
4	Return on Equity	6916	6929
5	O & M Expenses	3089	3398
	TOTAL	24508	24252

VARIABLE CHARGES

25. The Energy Charges (Variable Charges) are worked out for Combined Cycle Operation and Open Cycle Operation separately. Since during the period the petitioner had not used NOX control, heat rate norms of 2100 kcal/kWh for Combined Cycle Operation and 3150 kcal/kWh for Open Cycle Operation without NOX control as per Ministry of Power notification dated 5.5.1999 have been used for computing Energy Charges. The auxiliary consumption for Combined Cycle Operation and Open Cycle Operation has been considered at 3% and 1% respectively on normative basis. The Energy Charges computations have been made based on revised GCV values of Gas & HSD furnished by the petitioner vide its affidavit sworn on 11.6.2003, filed on 13.6.2003. The month-wise Energy Charges, approved and summarised as under shall be based on adjustment for % Open Cycle Operation during the month certified by NREB for the respective month.

MONTH-WISE ENERGY CHARGES (paise/kWh)

	1999-2000		2000-01	
Month	Combined Cycle Operation	Open Cycle Operation	Combined Cycle Operation	Open Cycle Operation
April	104.06	152.93	99.36	146.03
May	78.58	115.49	95.95	141.01
June	101.06	148.52	99.06	145.59
July	108.19	158.01	112.26	163.52
August	111.47	163.82	139.88	205.59
September	105.95	155.71	136.16	200.12
October	105.25	154.68	187.41	275.43
November	112.37	165.15	156.92	230.62
December	106.00	155.78	127.49	187.37
January	105.31	154.77	136.59	200.74
February	105.51	155.07	183.84	270.18
March	95.62	140.54	134.95	198.33

26. Respondent No.1 has also raised the issue regarding applicability of operational norms for revision of variable charges. According to this respondent, variable charges should be re-determined by the Commission by applying the operational parameters like, specific fuel oil consumption, auxiliary energy consumption, station heat rate, etc. based on the normative or the actuals, whichever is lower. Respondent No 1 has further submitted that operational norms contained in the notification dated 5.5.1999 are the

ceiling norms and, therefore, while determining variable charges it will be fair to consider lower of the normative or actuals. In support of these contentions, reliance was placed on Ministry of Power notification dated 30.3.1992, issued under Section 43A(2) of the Electricity (Supply) Act, 1948 laying down the terms and conditions of tariff in general. In our opinion, the notification dated 30.3.1992 has no application to determination of tariff for Dadri GPS as tariff of this station is to be determined in accordance with project-specific notification dated 5.5.1999 issued under proviso to Section 43A(2) of the Electricity (Supply) Act, 1948 and the Commission has already decided to follow Ministry of Power project-specific tariff notification up to 31.3.2001. The notification dated 5.5.1999 does not contain any provision for applying lower of the normative or actuals of the operational parameters. We also notice that in the Explanation below clause 1.1 of the notification dated 30.3.1992 it is provided that the operational norms laid down by CEA are the ceiling norms and this shall not preclude the Boards and the Generating Companies from agreeing to accept improved norms. Nothing has been brought on record by Respondent No. 1 to show that it had agreed with the petitioner to accept improved norms. For this reason also, we do not find any merit in the submission made by Respondent No 1.

27. The revised fixed and variable charges have been decided by us in the preceding paras for Dadri GPS for the relevant year. The petitioner has already recovered fixed and variable charges from the respondents in view of continuation of tariff notification dated 5.5.1999 on *ad hoc* basis beyond 31.3.1999. The amount already recovered shall be adjusted against the revised charges decided by us through this order.

28. In addition to these charges, 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.

29. This order disposes of Petition No.95/2002.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRMAN

New Delhi dated the 30th June, 2003