

**BEFORE THE UTTAR PRADESH ELECTRICITY REGULATORY COMMISSION  
LUCKNOW**

**IN THE MATTER OF:** Suo-moto proceedings on amendments in Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2004.

The following were present:

1. Sri. Anurag Singh, M/s Rosa Power Supply Co.
2. Sri. S.Joshi, UPJVNL
3. Sri. B.S Goel, Consultant
4. Sri. Arun Kumar, CE, UPJVNL
5. Sri. Satish Kumar, EE, UPJVNL
6. Sri. Mahendra Kumar, CC(Comm.)
7. Sri. U.S Gupta, EE, UPRVUNL
8. Sri. Haroon Aslam, Sr.AE (Comm.), UPRVUNL
9. Sri. K.K Khanna, Sr.CAO, UPRVUNL
10. Sri. S.N Dubey , CE, PPA, UPPCL
11. Sri. S.P Pandey, EE, PPA
12. Sri. P.K Johari, EE, RAU
13. Sri. S.K Jhajharia, Sr.Vice President, Hindalco
14. Sri. R.P Sharma, Vice President, Hindalco
15. Sri. A.K Arora, Resident Officer

**Order**

(Date of hearing 4.1.08)

- (1) The section 61 of the Electricity Act,03(the Act) says that the State Commission shall specify the Terms & Conditions for determination of tariff and in doing so, it shall be guided by the principles and methodology specified by the Central Commission for determination of tariff. In exercise of powers conferred under section 181 read with section 61 of the Act, the Commission notified Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2004 vide Notification no. UPERC/Secy/Regulation/ 05-248 Dated June 7, 2005, published in official gazette on 18.6.05 (hereinafter referred to as the Generation Regulations). These Regulations are in force for three years, up to 17.6.2008, unless reviewed earlier or extended by the Commission.

The Regulations notified by the Central Commission are effective from 1.4.04 for five years and its review would be taken up during 2008-09. Since the State Commissions are to follow the principles and methodology specified by the Central Commission, therefore, it would be appropriate that existing UPERC Regulations are extended up to 31.3.2009 by specifying the operating norms and other terms and conditions for year 2008-09 by an amendment.

In consideration of above, the Commission prepared a draft amendment called "*Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) (First Amendment) Regulations, 2007*" and invited comments, vide notice no. UPERC/D(G)/Secy/2007/1404 dt.1.11.07 published in newspapers on 2.11.07. Hearing in the matter was fixed for 4.1.08 by a Public Notice dt.4.12.07.

- (2) The following have submitted comments:
  - (i) UP Power Corporation Ltd.(UPPCL) vide letter no.18/RAU/Tariff Regulation dt.3.1.08
  - (ii) UP Jal Vidyut Nigam Ltd. (UPJVNL), vide letter no.19/CE (O&M)/Comm./tariff regulations/R-1 dt.3.1.08.
  - (iii) M/s Jaiprakash Power Ventures Ltd. (JPVL), vide letters dt.15.11.07 & 1.1.08.
  - (iv) M/S Alaknanda Hydro Power Company Ltd., (AHPCL), vide letters dt.15.11.07 & 27.12.07.
  - (v) Noida Power Company Ltd. (NPCL), vide letter no.P-77L/091 dt. 15.12.07.
- (3) UPRVUNL has made submission after hearing held on 4.1.08 vide letter no.27/UNL/CE (Comm.)/UPERC dt. Jan 21, 08.
- (4) The Submissions made in writing or during hearing are as below:
  - (a) Provisional Tariff:  
*Proposal: "Provided further that over or under recovery of charges by the generating company on account of provisional tariff shall be subject to retrospective adjustment on the basis of final tariff determined by the Commission and shall be paid or recovered by*

*the generating company along with interest calculated at rate equal to the short term Prime Lending Rate of State Bank of India prevailing as on 1<sup>st</sup> April of the relevant year.”*

Written Submission: UPPCL has suggested that the difference of cost should be recovered without interest.

Submissions in the hearing: UPPCL has reiterated its written submission which has been opposed by other parties present in the hearing.

Decision: The difference of provisional and final tariff is the cost to the generating company or beneficiary and is in the nature of advance or deferred payment, as the case may be. This amount has to be paid by either party to other along with its financing cost. UPPCL in its suggestion has omitted to address to financing cost of such difference which the generating company or distribution company would shoulder. The interest rate of State Bank of India is market determined price of financing and equitable to both the parties. **The electricity supply continues at provisional tariff till final tariff is determined as such any difference between the tariffs remains a cost on either party along with a financing incidental as to interest cost on it. Therefore, the generating company, on the basis of such final tariff, shall calculate the amount of under or over recovery of charges and bill such amount to be recovered or paid by it from or to the beneficiary (ies), for the period provisional tariff remained effective, along with simple interest calculated at rate equal to Short Term Prime Lending Rate of State Bank of India prevailing as on 1<sup>st</sup> April of the relevant year.**

(b) Stabilization period on R&M:

Proposal: After Renovation & Modernisation of generating unit (s) in a generating station, the gross station heat rate, secondary fuel oil

consumption and auxiliary energy consumption shall be higher for initial 180 days on its re-commissioning,

Written Submission UPPCL submits that stabilization period of 180 days on re-commissioning of unit is excessive and it should be in the range 60 to 90 days. NPCL has submitted designed SHR of the generating stations of UPRVUNL and commented that already higher Station heat rates have been allowed in the Regulations as such no relaxation on re-commissioning be allowed. NPCL has suggested that SHR be brought in the range of 5 to 10% of designed heat rate. UPRVUNL is seeking more relaxed norms during stabilization.

Submissions in the hearing: Sri. P.K Johri, EE, RAU, UPPCL has submitted that the relaxation in operating norm should be provided for 90 days. Sri. Mahendra Kumar, CE(Comm.), UPRVUNL has submitted that the relaxed norms after R&M is necessary and 180 days proposed for that purpose should not be reduced. Sri. Mahendra Kumar has also prayed that the generating company be allowed full capacity charges on R&M.

Decision: This period has been considered as 180 days in Notification made by Government of India under section 43 A(2) of the Electricity Supply Act,1948 and thereafter under Generation Regulations made by UPERC. Since the said period was allowed for the new units of a generating station as such after R&M, as much time would not be required for stabilization. **Therefore, this period shall be 120 days.**

(c) Escalation Rate for O&M Expenses:

Proposal: O&M expenses of year 2008-09 shall be computed by escalating the O&M expenses of year 2007-08 by 6% in case of thermal and hydro electric generating stations.

Written Submission: UPPCL has objected to increase in escalation rate from 4% to 6% on O&M expense and maintenance spares as

that would impact tariff. UPJVNL has suggested that the escalation of O&M expenses should be 10% in light of employee cost being nearly 60% in the O&M expenses. NPCL has also submitted that escalation rate should be 4%. UPRVUNL is praying for 18% rise in O&M expense.

JPVL has emphasized that higher O&M expenses up to 2.5% of the capital cost should be allowed due to varying geology, terrain, head, quality & quantity of silt in the water conditions etc associated with the project. JPVL finds 6% escalation rate insufficient due to increase in cost of raw material for underwater parts and manpower.

Submissions in the hearing: The representative of UPPCL and NPCL have submitted that higher escalation rates would increase burden on distribution companies and present escalation of 4% is adequate. Sri. M.A Siddiqui submitted on behalf of JPVL that the existing provisions of O&M expenses are inadequate in meeting actual cost due to varied geological conditions associated with the hydroelectric projects and it should be 2.5% of the capital cost of the project.

Decision: UPJVNL is requiring higher escalation rates on O&M expenses on account of rise in employee cost. UPRVUNL has not stated any reason in support of 18% escalation in O&M. Distribution companies fear rise in tariff. The generating companies should improve availability of the plants to claim full capacity charge. UPRVUNL is required to reduce cost of generation by improving station heat rate, auxiliary energy consumption and secondary fuel oil consumption for better appropriation of funds and removing strains on such funds which arises from inefficient operation. However, the fact that UPRVUNL or UPJVNL has not expressed inadequacy of fund for repair & maintenance made available to them according to the Generation Regulations, can not

be ignored. Delay in payment has been stated reason for delay in maintenance in past by UPRVUNL and UPJVNL but none of them approached for redressal of grievance before the Commission. Importance of availability of adequate fund for O&M should also not be undermined and timely payments must be ensured by the distribution companies. Additional burden due to higher escalation rate could be absorbed by distribution licensees by reducing losses and improvement in collection efficiency. Generation can not be allowed to suffer due to non-payments.

The proposed amendment is seeking extension of the Generation Regulations or amendments up to 31.3.09 as such the enhancement in escalation rate by fifty percent appears on higher side and it may be restricted to 25%. **Therefore, the O&M expenses for year 2008-09 shall be computed by escalating the expenses of year 2007-08 by 5%.**

Geological factors, which manifest at the time of operation of the project, may cause the generating company to incur increased O&M expenditure than that determined as per the provisions of the Generation Regulations or any power purchase agreement. Inadequacy of O&M fund should not hamper harnessing the natural resource. However, the requirement of additional O&M expenditure can be ascertained only after scrutiny of actual expenditure made on repair & maintenance, in such eventuality, on case to case basis. **Therefore, the Commission may, in such cases, consider revising the percentage, subject to ceiling of 2.5% of capital cost, for tracing the O&M expense from the capital cost of the project on case to case basis. The Regulation 38(iv) (c) shall be modified accordingly.**

(d) Revenue from sale of Infirm Power for hydro electric stations:

Proposal:

*“The cost of infirm power shall be equal to half of the average of the lowest variable charges of central sector thermal power generating station of the Northern Region for all months of the previous year as determined by the Central Commission and the same shall be treated as an advance made by the beneficiaries to the generating company towards meeting the expenses on the Income Tax in subsequent year(s).*

*Provided that the generating company shall inform to the State Load Despatch Centre about its schedule to supply such power one hour prior to testing of the generating station.*

*Provided also that the startup power drawn by the generating station from the grid shall be adjusted with ex-bus energy and such energy shall be scheduled to its beneficiaries in the proportion of contracted capacities.”*

Written Submission: UPJVNL has stated that treating the revenue as advance made by the beneficiaries for meeting the Income Tax is not according to accounting principle. It is suggested that any revenue earned from infirm power be credited to the capital cost of the project.

Submissions in the hearing: Sri. B.S Goel, Consultant representing UPJVNL has submitted that the revenue from sale of infirm power should be used to reduce the capital cost of the project in order to decrease the cost of generation.

Decision: Regulation-33 of the Generation Regulations provides that the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff. Any reduction in capital cost, by an amount equivalent to revenue earned from sale of infirm power, shall be inconsistent with the spirit of the said Regulation and shall also be a loss proposition for entire useful life of the project. Generation of infirm power is a natural consequence of activities undertaken prior to commissioning of project and income from sale of such power can not be used detrimental to commercial right of the generating company to get tariff determined on the basis of actual expenditure incurred on completion of the project. **In hydro generating stations, there is no input cost like**

**fuel in thermal generating stations as such equitable treatment of income from such sale is to be discovered. Income tax is paid at actual under the provisions of the Generation Regulations; hence it would be appropriate that this income is treated as an advance made to the generating company towards meeting the expenses on income tax in subsequent years.**

(e) Primary Energy Rate of Hydroelectric Generating Stations:

Proposal: *“Rate of primary energy for all hydroelectric power generating stations, except for pumped storage generating stations, shall be equal to average of the lowest variable charges of central sector thermal power generating station of the northern region for all months of the previous year as determined by the Central Commission. The primary energy charge shall be computed based on the primary energy rate and saleable scheduled primary energy of the station.*

*Provided that in case the primary energy charge recoverable by applying the above primary energy rate exceeds the Annual Fixed Charge of a generating station, the primary energy rate for such generating station shall be calculated by the following formula:*

$$\text{Primary energy rate} = \frac{\text{Annual Fixed Charge}}{\text{Design Energy}}$$

Written Submission: UPJVNL has suggested that primary energy rate of hydroelectric generating stations should be equal to total average cost of all central sector generating stations of the region. UPJVNL, AHPCL and NPCL have suggested in calculation of the primary energy rate, saleable energy should be considered instead of the designed energy in the formula.

Submissions in the hearing: The representative of UPJVNL has reiterated its written submission in this regard.

Decision: **‘Design Energy’ shall be replaced by ‘Saleable Primary Energy’ for taking in account auxiliary energy consumption and transformation losses.**

(f) Application for Determination of Tariff:

Proposal: *“Provided that the application for fixation of tariff shall be filed by the end of the month November covering the period for which the terms and conditions of tariff shall remain in force.”*

Written Submission: JPVL has stated that, where terms and conditions for determination of tariff and the capital cost are approved by the Commission with power purchase agreements, the beneficiaries should make payments on the basis of bills submitted at tariff computed on the basis of such terms and conditions of power purchase agreements and capital cost by the generating company. The Commission should be approached only in case of any dispute or change in capital cost.

Submissions in the hearing: The Representative of JPVL seeks that generating company should not be required to approach the Commission for determination of tariff every year in cases where the terms & conditions of determination of tariff and capital cost of the project have been approved by the Commission.

Decision:

- (i) **Filing of application by the month of November shall not insisted.**
- (ii) Multi year tariff is determined under the provisions of the Generation Regulations as per the requirement of the section 61 of the Electricity Act, 03. Although these Regulations determine tariff based on capital cost but do not apply directly on JPVL. The terms and conditions of determination of tariffs have been approved by the Commission in Power Purchase Agreements in case of JPVL, AHPCL & Rosa Power Company Ltd. which should also be brought in conformity with section 61(f) of the Electricity Act, 03 regarding multi year tariff. **Therefore JPVL, AHPCL & Rosa Power Company Limited shall approach the Commission for determination of tariff for 5 years on the basis of terms and conditions for**

**determination of tariff approved by the Commission in a power purchase agreement.**

(iii) **The proposal shall be modified accordingly.**

Definition of Force Majeure:

Written Submission: NPCL has requested to define the conditions to ascertain of force majeure.

Decision: **The definition of force majeure is well settled and there is no need to provide it in the Regulations which is rather a matter of power purchase agreement.**

(g) Floating Interest Rate:

Proposal: *“(h) In case, the generating company has contracted floating/variable rate of interest on loan resetting at certain interval of time, the impact of change in rate of interest shall be assessed by the generating company on account of such resetting duly certified by Statutory Auditor and the capacity charge of the relevant year shall be adjusted accordingly.*

*Provided that the generating company shall make every effort to refinance/swap the loan as long as it results in net benefit to the beneficiaries. The costs associated with such refinancing/swapping shall be borne by the beneficiaries. Both the above facts shall be certified by Statutory Auditor.*

*Provided also that in case of dispute, any party to such dispute may approach the Commission with proper application and it shall be ensured that the payment to the generating company is not withheld during pendency of the dispute”.*

Written Submission: NPCL is suggesting that the payment to the generating company should be limited to 50% of the disputed amount in case of dispute on the liability arising out of floating interest rates.

Decision: **In case, the generating company has contracted floating/variable rate of interest on loan resetting at certain interval of time, the impact of change in rate of interest shall be assessed by the generating company on account of such resetting duly certified by Statutory Auditor and the capacity charge or annual fixed charge of the relevant year shall be**

**adjusted for such impact and billed accordingly to beneficiary without approaching the Commission for change in tariff on this account as such adequate safeguards have been provided in the estimation of impact of floating interest rate, therefore, the payment to the generating company shall not be withheld in case of dispute.**

(h) Operating Parameters:

Proposal: The amendment proposes to extend the applicability of norms of target availability, plant load factor, Station heat rate, auxiliary energy consumption, secondary fuel oil consumption, specified for year 2007-08, up to 31.3.09.

Submissions in the hearing: Sri. Mahendra Kumar, CE(Comm.), UPRVUNL has submitted that the norms specified in the regulations and those proposed in the amendment are on very higher side and not achievable by UPRVUNL in view of the past performance. The SHR of Obra B has been fixed lower than the designed heat rate and the auxiliary consumption should be 9.0% as this generating station without cooling tower. The auxiliary consumption Anpara A, which falls in 200 MW series, should also be 8.5% instead of 8.0% proposed in the amendments.

Written submission: UPRVUNL has submitted the achieved parameters in comparison to norms specified by the Commission. The designed heat rates have also been submitted. UPRVUNL is seeking revision of norms specified in the Regulations.

Decision: The issue of SHR of Obra B with respect to designed heat rate and auxiliary consumption in relation with cooling tower of Obra B has been raised for the first time. The auxiliary consumption of Anpara A has been specified by the Commission as 8% since 2003-04 and the same has been kept for subsequent years in the Regulations. **Since entire new facts have emerged in the proceedings, the SHR and auxiliary consumption of Obra B**

**shall be 2700 K.cal/Kg. and 9.0% respectively for 2008-09. Although auxiliary consumption for Anpara A has been considered at 8% since 2003-04, but for the sake of uniformity, it shall be 8.5% for 2008-09.**

UPRVUNL, in its post hearing submissions, have sought relaxation in target availability, plant load factors, station heat rates, fuel oil consumptions and auxiliary consumptions and the same are available at Annexure-1 to this Order. The norms considered by the Commission in Tariff Order dt.10.6.03 for year 03-04, Order dt.10.11.04 for year 2004-05 and those specified under the Generation Regulations are also shown in the said Annexure along with actual performance of 2006-07 and 2007-08 in respect to some generating station. The comparison of actual performance with the benchmarks specified by the Commission reveals that in most of the cases, the generating stations have not even touched the benchmark fixed for 2003-04. Heavy deterioration in station heat rates of Obra B, Panki, Harduaganj & Paricha suggests that the efficiency in operation had been a non starter since year 2003-04. Auxiliary consumption has increased exceptionally in all plants. Reduced availability factor and plant load factor indicates that partial outages and forced outages have not been reduced. The norms specified by the Commission over the years have been aiming at gradual improvement in operational efficiency of the generating stations of UPRVUNL. The UPRVUNL is pleading losses. The remedy to the losses lies in good performance and consumers can not be asked to pay for inefficiencies of operation.

In past UPRVUNL had approached for relaxation in norms of operation. In Petition no.426/06, the Commission has held vide Order dt.29.12.06, *“If the prayer is allowed, it would amount to rewarding the inefficiency and uneconomical uses of national resources”*.

**In light of the above, we are unable to accept the relaxation in other norms as being prayed.**

(j) Proration of capacity charges in case of R&M :

*Proposal : "In case of non-availability of unit(s) due to Renovation & Modernization, the effective capacity left after discounting capacity such of unit(s), shall be considered for the purpose of calculation of plant availability and the annual capacity (fixed) charges not more than as prorated to such effective capacity shall be recovered in case of generating stations covered under sub clauses (a) and (b) above."*

Submissions in the hearing: Sri. Mahendra Kumar, CE(Comm.), UPRVUNL has submitted that the proration of the capacity charge would not be in commercial interest of the company as such this condition might be waived. He has proposed that the reduced capacity left due to R&M should be considered for plant load factor and incentive.

Written submission: UPRVUNL states that return on equity, interest on loan and salary of employees shall be paid in case a unit being in under R&M and in such circumstances the fixed charges should not be prorated to the effective capacity.

Decision: Target availability for recovery of full capacity charges have been specified in Regulation 16 of the Generation Regulations. Note to Regulation 16(i) states that the recovery of capacity charges below the level of target availability shall be on prorata basis and at zero availability, no capacity charges shall be payable. The essence of the said provision is that the generating company shall be paid for the capacity which has actually been used in supplying electricity to the consumer. R&M is a distinct activity than routine operation. It completely removes a machine from the operation unless re-commissioned after R&M works. Therefore in case of R&M, the capacity charges shall also be prorated as per Regulation 16(i) but the plant load factor calculated with reduced capacity, due to R&M, would not reflect real

performance. In view of this, proposal has been made in the draft amendment that effective capacity shall be used for the purpose of plant load factor for actual assessment of the performance. The said proposal also provides an opportunity to the generating station to earn incentive which otherwise would not available if full capacity is used for calculation of plant load factor.

Whether all components of capacity charge should be prorated or certain components might be allowed during R&M is the question worth consideration. Interest on loan, repayment of loan, and employee cost are the necessary expenditure to be incurred by the generating company. **Therefore, depreciation and interest on working capital shall be prorated to the effective capacity. The return on equity shall be utilized for repayment of loan only.**

(k) Payment: In post hearing written submission, UPRVUNL is seeking 50% payment in case of dispute.

Decision: **This issue shall be considered at the time of framing new regulations which would come in to effect from 1.4.09.**

(l) Other issues: UPRVUNL is praying 16% return on equity and 18% escalation on maintenance spares.

Decision: **At present, amendments to the existing regulations are being considered as such the extent of return on equity and escalation rate shall be considered at the time of framing new regulations which would come in to effect from 1.4.09.**

(5) The section 61 of the Act provides that the Commission shall determine tariff by specifying terms and conditions in tariff Regulations and in doing so shall be guided by factors provided under that section. In exercise of powers conferred under section 181 read with section 61 of the Act, the Commission framed 'Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) Regulations, 2004' which shall apply in all cases of generating plants where tariff is to be determined by the Commission based on capital

cost. The Regulations so framed may be reviewed, as the need be, to make them responsive to changing requirements of the sector or the emerging needs or to provide remedies to the problem that may arise. As such, the Commission has proposed amendments on issues, like norms on re-commissioning of units after R&M, stabilisation period on R&M, treatment of capacity charges on R&M, impact of provisional tariff, floating interest rates, determination rate of infirm power and treatment of revenue earned from such sale and requirement of escalation of O&M expenses at higher rate etc. New issue has arisen during the proceedings regarding requirement of higher O&M expenses attributable to geological conditions to which the Commission has provided a solution in this order.

The Commission has approved terms & conditions of determination of tariff, based on capital cost, in power purchase agreements signed by M/s Jaiprakash Power Ventures Ltd. for supply of electricity from Vishnu Prayag Hydro Electric Project, M/S Alaknanda Hydro Power Company Ltd. for supply of power from Srinagar Hydro Electric Project and M/s Rosa Power Company Ltd. for supply of power from Rosa Thermal Power Project with UP Power Corporation Ltd. as special cases. The Generation Regulations do not directly apply in determination of tariff in above mentioned projects as such new provisions or remedies created as a result of review of existing Generation Regulations can not be extended to above mentioned projects which would not be in the spirit of section 61 of the Act,, 03 that requires determination of tariff by specifying terms & conditions in tariff regulations. Equity demands that the provisions made in the Generation Regulations and amendments thereof should be extended to the above mentioned projects also. Therefore, the Regulation-2 of the Generation Regulations shall be modified by inserting a clause that these Regulations shall be in addition to and not in derogation to terms and conditions of determination of tariff approved by the Commission

in a power purchase agreement signed between a generating company and distribution licensee(s)/beneficiary (ies). Either party to power purchase agreement may approach the Commission for specific relief, under these Regulations and amendments thereof, if such provision or remedy is not available in the power purchase agreement signed between them.

- (6) The provision of Unscheduled interchange charges in case of hydro and thermal power generating stations and scheduling in case of hydro power generating stations shall be modified as per the provisions made by CERC (Terms and Conditions of Tariff) (Fourth Amendment), Regulations-2007, vide notification no.L-7/25(5)/2003-CERC dt.28.12.07.
- (7) Based on decisions taken in Para 4 & 5 of this Order, proposed amendment to the Generation Regulations shall be modified and put up for approval of the Commission. "Uttar Pradesh Electricity Regulatory Commission (Terms and Conditions of Generation Tariff) (First Amendment) Regulations, 2007" shall come in to force from 1<sup>st</sup> April, 2008. The Secretary to the Commission shall get this Regulation notified in the official gazette with Hindi Translation. Pending Gazette Notification, the amendment so approved by the Commission shall be made public by posting it on the Website of the Commission and informing all persons by a Public Notice made in the newspapers. The generating companies shall file application for determination of tariff for year 2008-09 accordingly.
- (8) The matter is disposed of.

(R.D. Gupta)  
Member

(P.N Pathak)  
Member

(Vijoy Kumar)  
Chairman

Lucknow; Dated: 17<sup>th</sup> March, 2008

Annexure-1 to Order dated 17<sup>th</sup> March,2008

				As per Regulation 2004				Proposed in amendment	UPRVUNL submission dt.21.1.08					
Target availability		As per Tariff Order 10.6.03	As per Tariff Order 10.11.04						Actual		Revision Proposed			
S.No.	Power Station	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09		2006-07	2007-08(up to 11/07)	2006-07	2007-08		
i)	Obra-A			64%	69%	74%	74%		18.05%	19.20%				
ii)	Obra-B			75%	80%	80%	80%		51.47%	51.75%				
ii)	Panki TPS			60%	65%	70%	70%		51.18%	48.27%				
lii)	Harduaganj TPS			40%	45%	50%	50%		22.97%	30.80%				
iv)	Parichha			60%	65%	70%	70%		59.61%	36.07%				
v)	Anpara A			80%	80%	80%	80%							
vi)	Anpara B			80%	80%	80%	80%							
<b>Plant Load Factor(%)</b>														
S.No.	Power Station	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09		2006-07	2007-08(up to 11/07)	2006-07	2007-08		
i)	Obra -A	27.30%	50%	55%	60%	65%	65%				18%	50		
ii)	Obra-B	62.60%	65%	65%	70%	75%	75%				50%	50		
iii)	Panki TPS	47.90%	49%	55%	60%	65%	65%				50%	50		
iv)	Harduaganj TPS	23.40%	25%	30%	35%	40%	40%							
v)	Parichha	53.00%	53%	55%	55%	60%	60%				59%	50		
v)	Anpara A	82%	80%	80%	80%	80%	80%							
vi)	Anpara B	85%	80%	80%	80%	80%	80%							
<b>Station Heat rate</b>						(Figures in Kcal/Kwh)								
S.No.	Power Station	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09		2006-07	2007-08(up to 11/07)	2006-07	2007-08		
i)	Obra -A	3028	3000	2950	2850	2850	2850	<b>Designed</b>	2985	3083	3050	3050		
ii)	Obra-B	2916	2900	2750	2650	2550	2550	<b>2636.25</b>	3314	3081	3050	3050		
iii)	Panki TPS	3157	3100	3000	3000	2950	2950	<b>2678.0</b>	3574	3597	3550	3550		
iv)	Harduaganj TPS	3480	3450	3400	3350	3300	3300	<b>2726.0</b>	3650	4069	3550	3550		
v)	Parichha	3577	3550	3400	3250	3100	3100	<b>2657.0</b>	3886	3378	3350	3350		
v)	Anpara A	2549	2500	2500	2500	2500	2500							
vi)	Anpara B	2549	2500	2450	2450	2450	2450							

<b>Fuel oil consumption</b>						Fig.in ml./KWh							
S.No.	Power Station	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09						
i)	Obra –A	5.52	5.2	5	4.5	4	4						
ii)	Obra-B	2.94	2.7	2.5	2.5	2.5	2.5						
iii)	Panki TPS	4.4	3.7	3	2.5	2.5	2.5						
iv)	Harduaganj TPS	5.73	5.5	5.5	5	4.5	4.5						
v)	Parichha	3.19	3	3	3	3	3						
v)	Anpara A	1.1	2.0	2.0	2.0	2.0	2.0						
vi)	Anpara B	0.3	2.0	2.0	2.0	2.0	2.0						
<b>Aux. consumption</b>							(%)						
S.No.	Power Station	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09				2006-07	2007-08	
i)	Obra Thermal	12	12	12	11	10	10		13.22%	15.18%	13.5	13.5	
ii)	Obra-B	9	9	9	9	8.5	8.5		11.56%	12.25%	11.5	11.5	
iii)	Panki TPS	12	12	12	11	10	10		13.47%	13.76%	13.5	13.5	
iv)	Harduaganj TPS	12	12	12	11.5	11	11		14.41%	15.80%	13.5	13.5	
v)	Parichha	9	12	12	11	11	10		16.38%	18.89%	13.5	13.5	
vi)	Anpara A	8	8	8	8	8	8		10.14%	10.31%			
vii)	Anpara B	7.7	7.6	7	7	7	7		7.64%	7.79%			