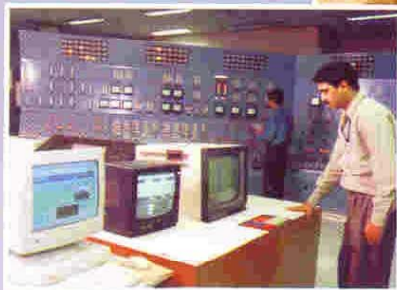
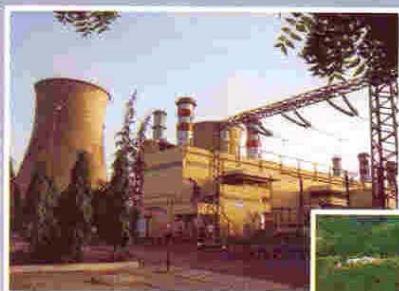


# CERC

## Annual Report 2004-05



Central Electricity Regulatory Commission

# Annual Report

2004 - 05



## CENTRAL ELECTRICITY REGULATORY COMMISSION

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## Foreword

Dear Stakeholders,

The role of the Central Commission has been largely expanded after the promulgation of the Electricity Act, 2003. In pursuance of this mandate, CERC has already issued many orders and regulations, which I had narrated in the Annual Report of last financial year.

As a sequel to the role of the principal regulator, the Commission has also been entrusted with the responsibility of catalyzing the regulatory reforms process in the country, as the first among equals in the Forum of Regulators constituted under the Electricity Act, 2003. The Forum, which consists of Chairpersons of all State Commissions as Members held its first meeting under the chairmanship of Chairperson, CERC and took several important decisions, particularly towards implementation of the provisions of the Act and the National Electricity Policy. It was resolved *inter alia* to introduce Open Access at the distribution level within mandated time frame so as to ensure consumer choice. Consensus was also evolved around the most suitable method of computation of cross subsidy surcharge. There was consensus on introduction of Time of Day (TOD) Tariff for eligible categories. To ensure protection of consumer interests, several SERCs have already set up Consumer Redressal Forum and also appointed Ombudsman. It was resolved that this task would be completed by all SERCs at the earliest.

At the Central level, Open Access in Inter-State Transmission, which was introduced by CERC last year was reviewed based on the operational feedback received from the stakeholders. Transmission access is an important mechanism for opening up the electricity sector in the interest of the consumer. The Commission brought about an amendment to the Open Access Regulations simplifying the procedure and making it more user-friendly.

Last year we notified the terms and conditions of tariff heralding a new era of light handed normative regulation. The norms have by and large rationalized the bulk generation tariffs. However, it is well known that variable cost i.e. the cost of fuel -



forms the major portion of the total of cost of power generation. The caveat is that the unregulated rise of fuel price could render ineffective, all efforts of CERC at rationalization of tariff.

The electricity traders have started operating in the market consequent upon grant of trading licence by CERC. During this period, the volume of traded power increased marking an improved trend towards better exchange of power from surplus region to deficit regions. Trading constituted about 2% - 3% of the total electricity generated during the period. The cost of traded power, however, emerged as an issue and the regulators across the country are examining the matter.

The Central Commission has among others the responsibility of advising the Central Government on various issues. The provision of statutory advice in the Electricity Act, 2003 recognises the role of the Commission in the formulation of policies in the electricity sector. This year we advised the Government on the formulation of two important policies viz., the National Electricity Policy and Competitive Bidding Guidelines which were notified in January/February, 2005.

While we dealt with several critical issues during the year, we have set several important agenda for the ensuing year. The Central Commission has among others the role of encouraging development of market in electricity. The Regulations on Open Access in inter-State transmission coupled with the grant of licence for inter-State trading have already created a framework for market in the electricity sector. We have now set before us the task of exploring the feasibility of market based on power exchange. We also propose to finalise the Indian Electricity Grid Code. The issues of market domination, operationalisation of distribution Open Access, introduction of intra-State ABT, etc. are also before us.

**(Ashok Basu)**  
Chairperson



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## THE COMMISSION

**T**he conceptualization of independent Regulatory Commission for the electricity sector dates back to early 1990s, when the National Development Council (NDC) Committee on Power headed by Shri Sharad Pawar, the then Chief Minister of Maharashtra recommended in 1994, constitution of “independent professional Tariff Boards at the regional level for regulating the tariff policies of the public and private utilities”. The Committee reiterated that “the Tariff Boards will be able to bring along with them a high degree of professionalism in the matter of evolving electricity tariffs appropriate to each region and each State”.

The need for constitution of the Regulatory Commission was further reiterated in the Chief Minister’s Conference held in 1996. The Common Minimum National Action Plan for Power evolved in the Conference inter-alia “agreed that reforms and restructuring of the State Electricity Boards

are urgent and must be carried out in definite time frame; and identified creation of Regulatory Commissions as a step in this direction”.

Thus was enacted the Electricity Regulatory Commissions (ERC) Act, 1998 paving way for creation of the Regulatory Commissions at the Centre and in the States.

The 1998 Act was enacted with the objective of distancing Government from the tariff regulation. The Act provided for Electricity Regulatory Commissions at the Center and in the States for rationalization of electricity tariff, transparent policies regarding subsidies etc. Under the provisions of this Act, the Central Government constituted the Central Electricity Regulatory Commission (CERC) in July, 1998. The ERC Act, 1998 has since been replaced by the Electricity Act, 2003. The CERC created under the provisions of the ERC Act, 1998 has been recognized as the Central Electricity Regulatory Commission under the Electricity Act, 2003.





The Commission functions in a quasi-judicial manner. It has the powers of civil courts. It consists of a Chairperson, three full time Members and the Chairperson of the Central Electricity Authority (CEA) as Ex-officio Member. In recognition of the need for a multi-disciplinary approach while addressing issues related to independent regulation, the Act prescribes that the Chairperson and Members shall be persons having adequate knowledge and experience in engineering, law, economics, commerce, finance or management. It also prescribes a broad mix of disciplines to be represented in the Commission. The Chairperson and Members are appointed by the President of India on the recommendation of a selection committee constituted by the Central Government as

prescribed under the Act. The Act also provides for the appointment of a Secretary of the Commission whose powers and duties are defined by the Commission.

The Electricity Act, 2003 has significantly enlarged the spectrum of responsibility of CERC. Under the ERC Act, 1998 only the tariff fixation powers were vested in CERC. The new law of 2003 has entrusted on the CERC several other responsibilities in addition to the tariff fixation powers, for instance, the powers to grant licence for inter-State transmission, inter-State trading and consequently to amend, suspend and revoke the licence, the powers to regulate the licensees by setting performance standards and ensuring their compliance, etc.

## THE MANDATE

**A**s entrusted by the Electricity Act, 2003 the Commission has the responsibility to discharge the following functions:-

### Mandatory Functions

- (a) to regulate the tariff of generating companies owned or controlled by the Central Government;
- (b) to regulate the tariff of generating companies other than those owned or controlled by the Central Government specified in clause (a), if such generating companies enter into or otherwise have a composite scheme for generation and sale of electricity in more than one State;
- (c) to regulate the inter-State transmission of electricity ;
- (d) to determine tariff for inter-State transmission of electricity;
- (e) to issue licences to persons to function as transmission licensee and electricity trader with respect to their inter-State operations.
- (f) to adjudicate upon disputes involving generating companies or transmission

licensee in regard to matters connected with clauses (a) to (d) above and to refer any dispute for arbitration;

- (g) to levy fees for the purposes of the Act;
- (h) to specify Grid Code having regard to Grid Standards;
- (i) to specify and enforce the standards with respect to quality, continuity and reliability of service by licensees.
- (j) to fix the trading margin in the inter-State trading of electricity, if considered, necessary;
- (k) to discharge such other functions as may be assigned under the Act.

### Advisory Functions

- (i) formulation of National Electricity Policy and Tariff Policy;
- (ii) promotion of competition, efficiency and economy in the activities of the electricity industry;
- (iii) promotion of investment in electricity industry;
- (iv) any other matter referred to the Central Commission by the Central Government.



## OUR MISSION

*The Commission intends to promote competition, efficiency and economy in bulk power markets, improve the quality of supply, promote investments and advise government on the removal of institutional barriers to bridge the demand supply gap and thus foster the interests of consumers. In pursuit of these objectives the Commission aims to –*

- ◆ *Improve the operations and management of the regional transmission systems through Indian Electricity Grid Code (IEGC), Availability Based Tariff (ABT), etc.*
- ◆ *Formulate an efficient tariff setting mechanism, which ensures speedy and time bound disposal of tariff petitions, promotes competition, economy and efficiency in the pricing of bulk power and transmission services and ensures least cost investments.*
- ◆ *Facilitate open access in inter-state transmission*
- ◆ *Facilitate inter-state trading*
- ◆ *Promote development of power market*
- ◆ *Improve access to information for all stakeholders.*
- ◆ *Facilitate technological and institutional changes required for the development of competitive markets in bulk power and transmission services.*
- ◆ *Advise on the removal of barriers to entry and exit for capital and management, within the limits of environmental, safety and security concerns and the existing legislative requirements, as the first step to the creation of competitive markets.*



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**PROFILE OF THE CHAIRPERSON  
AND  
MEMBERS OF THE COMMISSION**

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### **A. K. Basu**

*Chairperson and Chief Executive  
(April, 2002 - Continuing)*



**S**hri.A.K. Basu is presently Chairperson, Central Electricity Regulatory Commission.

Shri.Basu had a brilliant academic career. He was First in order of Merit among all candidates in School Final (Matriculation) Examination, West Bengal, in 1958. He stood First in the First Class in B.A. (Honours in Economics) Examination, Calcutta University in 1962, from Presidency College.

He joined the Indian Administrative Service in 1965 and was allotted West Bengal Cadre. In Government of West Bengal, he has held several important positions, including Commissioner of Calcutta Municipal Corporation, Education Secretary, Labour Secretary, and Principal

Secretary, Food and Civil Supply. He was the Chief Electoral Officer of the State from 1983 to 1987.

Shri. Basu has worked in various capacities in Government of India. He was Deputy Secretary, Ministry of Home Affairs during 1976-77. He worked as Special Assistant to the Union Minister of Education, Social Welfare & Culture, during 1977 to 1980. He was Special Secretary, Ministry of Home Affairs, Government of India, during 1996-97.

Shri. Basu has had a long association with industry and infrastructure sectors. He was Development Commissioner, Iron & Steel, and then Joint Secretary, Ministry of Steel, Government of India, during 1988 to 1993. He served as Additional Secretary &



Advisor (Industry & Minerals), Union Planning Commission during 1995-96, dealing with Plans and Projects of nearly 20 economic and infrastructure Ministries of Government of India. He was Secretary, Ministry of Steel, Government of India, from August, 1997 to May, 2000. Shri. Basu served as Secretary, Ministry of Power, Govt. of India from June 2000 till March 31, 2002. During this period, he pioneered several important initiatives for reforms and restructuring of the Indian Electricity Sector, including distribution reforms through the Accelerated Power Development and

Reforms Programme, formulation of the Electricity Bill 2003, one-time settlement of dues of the Central Utilities, ranking study for hydro projects, energy conservation and demand side management, restructured programme for rural electrification etc.

Shri. Basu was appointed Chairman, Central Electricity Regulatory Commission, in April 2002; this is a statutory position created under the Electricity Regulatory Commissions Act, 1998.

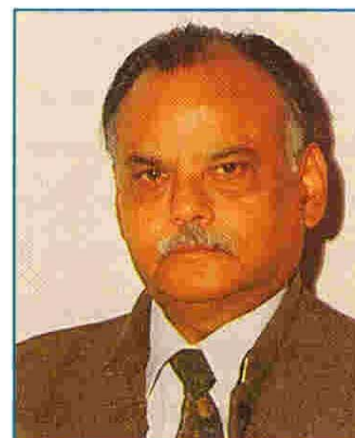
He has travelled extensively in India and abroad in connection with official business.



## **Shri K.N. Sinha**

*Member*

*(May, 2001 - Continuing)*



**S**hri K.N. Sinha joined the Central Electricity Regulatory commission as its Member on 11<sup>th</sup> May, 2001. Before joining the Commission, Shri Sinha was Member (Planning), Central Electricity Authority and ex-officio Additional Secretary to Government of India.

He obtained a Bachelors Degree in Electrical Engineering from Birla Institute of Technology, Ranchi in 1962. Immediately after graduation, Shri Sinha joined the then Uttar Pradesh State Electricity Board as an Assistant Engineer and was assigned the job of design and engineering of Ramganga Multipurpose River Project. He joined the Central Power Engineering service in 1964. Shri Sinha continued academic pursuit to upgrade his professional skills and obtained a Masters' Degree in Economics from the University of Himachal Pradesh in 1989, and a Post Graduate Diploma in Financial

Management from Indira Gandhi National Open University, New Delhi in 1995. In 1980, he was awarded a UN Fellowship for training in Management of Thermal Power Stations and basic modern management course on Rural Electrification at National Rural Electric Co-operative Association, Washington, USA.

Shri Sinha has made significant contribution in the power development of the country. In his early days of his career, as an Executive Engineer with the Government of Manipur, he introduced "Spot billing" and "Cash collection at the doors" – concepts relevant in a hilly region of the country where the consumers live in far flung areas. As Member-Secretary of the 13<sup>th</sup> Electric Power Survey Committee and Chairman of 16<sup>th</sup> Electric Power Survey Committee, he brought out the 13<sup>th</sup> and 16<sup>th</sup> Electric Power Survey Reports, both being path-breaking documents



introducing new concepts and approach, making the electrical energy demand projections more meaningful and realistic. He was part of the group responsible for designing the technical and techno-financial framework of legislation for inviting Private Sector participation in power generation. As Member (Planning), CEA, he finalised two landmark documents – “The Fuel Map of India” and “Power on Demand by 2012”, both the documents being the basis for power planning in the country in the time frame up to 2012. Shri Sinha has been responsible for introducing / redesigning a series of systems and publications in the Central Electricity

Authority. He set up the procedure, methods and framework of examination and vetting of tariff proposals of Central PSUs in the power sector. He was the co-chairman of the Indo-Nepal Power Exchange Committee dealing with the tariff charges for international exchange of power between India and Nepal. He streamlined the procedure for project appraisal and techno-economic clearance to power schemes – a statutory function of the CEA under Electric (Supply) Act, 1948. He was Chairman of the Standing Committee on Project Appraisal and co-chairman of Standing Committee on Firm Financial Package Appraisal.







important chapters of the Indian Electricity Grid Code, and has specified and guided the indigenous development of special energy meters for inter-utility exchanges.

He coordinated the major ADB-funded study on Bulk power tariffs by ECC of USA in 1993-94. He was Member-Secretary of Sankaraguruswamy Committee, and was involved in finalization of the Electricity Laws (Amendment) Bill 1998, which recognized transmission as a separate activity. He also chaired a CBIP Committee, which has formulated a well-received recommendation on EHV protection. He is a Senior Member

of IEEE and a Member of CIGRE and its Study Committee C1. For his contribution in the field of power systems, he received the CBIP Diamond Jubilee PM Ahluwalia Award for 1996. Administrative Council of CIGRE bestowed upon Shri Bhanu Bhushan the title of "Distinguished Member" in the year 2004. Shri Bhanu Bhushan also received Lifetime Achievement Award in the Power System Conference held in Chennai in December, 2004. He has written many technical papers, and delivered innumerable talks on problems of integrated grid operation, their solutions, inter-utility tariff, power sector reforms etc.



## **H. L. Bajaj**

*Chairperson, CEA and Member Ex-Officio,  
CERC*

*(From July 2002)*



**S**hri. H.L.Bajaj, Chairperson, Central Electricity Authority is Member (Ex-officio), CERC since July 2002. He graduated in Electrical Engineering and postgraduate in Power systems from Punjab Engineering College, Chandigarh.

He has over 35 years of varied experience in the field of power. Back in 1970, his efforts resulted in electrification of the entire Haryana State – being the first. In his 14 years service with Bharat Heavy Electricals Ltd. – he planned and designed electrical substations and power plant electricals for Indian and Overseas projects. He has also been in the Corporate Office of NTPC in various capacities in the Contracts Management Department including a short stint as General Manager (Consultancy). Shri.Bajaj has been responsible for various facets of SuperThermal Power Projects. His 15 years stint with NTPC has been most exiting where he significantly contributed for

setting up over 10,000 MW coal & gas based stations.

As head of the Western Region of NTPC, which is almost 1/3<sup>rd</sup> of total NTPC and contributing a billion dollar turn over per annum, revolutionized the working which resulted in increased efficiency levels and ISO certification of all the five Power Stations. During his tenure, the employees of this Region received the Prime Minister's highest prestigious Shram Vir and Shram Ratna Awards. He has been Director on the Board of NTPC.

Shri.Bajaj took over as the Chairman, Central Electricity Authority & Ex - Oficio Secretary to the Government of India in July, 2002. Being an Apex Government of India body, Ministry of Power, Central Electricity Authority (CEA) is the nodal agency for planning of generation capacity and transmission system for the entire Indian



power sector. CEA plays an active role in the development of hydro and thermal power and also plays a leading role for the development of Human Resources in the power sector.

Shri.Bajaj is a Director on the Board of Nuclear Power Corporation and also the Chairman, Electrotechnical Division Council (ETDC), Bureau of Indian Standards, New Delhi.

Recipients of various Awards by Power Engg. Society, IEEE (USA), the Third Millennium Award for his contribution in the field of Power Engineering; Outstanding Engineer 2001 Award by the Institution of Electrical Engineers, UK (IEE); Eminent Engineer Award 2002 by the Institution of Engineers

(India); Best Corporate Manager of the Year 2001 and also the PECOBA Award – 2001 for exemplary excellence in Engineering field. Shri.Bajaj is a Fellow & Chartered Electrical Engineer – the Institution of Electrical Engineers (IEE), UK; Fellow –The Institution of Engineers, India and Fellow – All India Management Association. Shri.Bajaj is a Member of the Governing Body of Netaji Subhash Institute of Technology (formerly DIT), Delhi and a Member of the Award Board, Omprakash Bhasin Foundation of Delhi.

Invited speaker on various foras on power and allied subjects, Shri.Bajaj has also presented numerous papers on power and contracts management.





## Shri Akbar Hameed Jung

*Member*

*(February, 2005 - continuing)*



**S**hri Akbar Hameed Jung joined the Central Electricity Regulatory Commission as a Member on 18<sup>th</sup> February 2005. Before joining the Commission Shri Jung was Secretary, Ministry of Civil Aviation and Chairman, Air India Limited w.e.f 1<sup>st</sup> June 2000 to 28<sup>th</sup> February 2002. He served as Special Secretary, Ministry of Power from 20.12.1999 to 31.5.2000.

Shri Jung acquired one year training at Birmingham University, U.K. for Development Administration and Dynamics of Change. He has done a two-month Training Course in Public Enterprise Management at Harvard, USA. He has also done Personnel Management in IIPA and Administrative Staff College in Public Enterprise and Project Financing conducted

by the Economic Development Institute of the World Bank.

While Shri Jung was Additional Secretary and Financial Adviser, Ministry of Steel & Mines from August 1997 to 19<sup>th</sup> December, 1999, he remained on the Board of SAIL, Kudremukh Iron Ore Company, Vizag Steel Plant, NALCO, BALCO, Hindustan Zinc Limited and Hindustan Copper Ltd. His responsibilities involved Disinvestment of PSUs, Financial Restructuring, Trade & Purchase of vast amount of raw material, finalization of contracts. As Financial Adviser, responsibilities, inter-alia involved financial and business restructuring of Public Enterprises, Budgetary control and offering finance advice to the Secretaries/Ministries on important proposals.



He held the post of Additional Deputy Comptroller & Auditor General from August 1996 to July 1997 and supervised Accounts of the States & Centre & In-charge of Revenue Audit-Direct Taxes of the Government of India mainly Income Tax & States Sales Tax. He served as Joint Secretary, Ministry of Power from July 1991 to July 1996 and remained on the Board of NTPC, PFC, and Power Grid Corporation. During this tenure his job was to look after Transmission (Power Grid) and Power Generation (NTPC), DVC, Coordination of coal movement for SEBs. He was In-charge of management of the five Power Grids. He had close interaction with

World Bank.

Shri Jung was Social Security Adviser to Government of Afghanistan for three years between 1984-1987. He was Accountant General – Maharashtra and Director General, Central Revenues, New Delhi. He worked as FA & CAO & later as Central Provident Fund Commissioner under the Ministry of Labour. He also served as Deputy Secretary in the Ministry of Home Affairs – In-charge of Para Military Forces like BSF, CRPF, ITBP, CISF and IB. In CAG Office he was In-charge of Personnel and was posted to London for Audit of European Missions.



## HUMAN RESOURCES OF THE COMMISSION

The Commission has a very wide mandate under the Act. The efficiency of the Commission in discharging its responsibilities depend upon the quality and functional specialization of its staff with the requisite expertise and experience in engineering, economics, financial management, accounting, law, environment, management information system and other related skills. The details of key human resources are provided in Annexures I and

II. In addition, the Commission intends to utilise the human resources with their wide range of expertise and experience available within the Government, industry and research institutions. To supplement the in-house skills and experience available to it, the Commission engages consultants and for this purpose it has framed regulations. The details of Staff position in the Commission and recruitments during the year 2004-05 are given in the table below:

**STAFF POSITION AS ON 31 MARCH, 2005**

S.No.	Name of the Post	No. of Posts sanctioned	No. of Posts Filled	Vacant Posts
1.	Secretary	1	1	-
2.	Chief	4	3	1
3.	Joint Chief	2	1	1
4.	Deputy Chief	8	4	4
5.	Assistant Chief	8	6	2
6.	Bench Officer	2	2	-
7.	Assistant Secretary (P&A)	1	1	-

*Table Contd.....*



S.No.	Name of the Post	No. of Posts sanctioned	No. of Posts Filled	Vacant Posts
8.	Pay & Accounts Officer	1	1	-
9.	Principal Private Secretary	4	4	-
10.	Private Secretary	5	5	-
11.	Assistant	5	5	-
12.	Personal Assistant	7	4	3
13.	Stenographer	4	2	2
14.	Receptionist-cum-Telephone Operator	1	1	-
15.	Senior Peon/Daftry	2	-	2
16.	Peon	4	2	2
17.	Driver	4	4	-
	<b>T O T A L</b>	<b>63</b>	<b>46</b>	<b>17</b>

### RECRUITMENT DURING 2004-05

S.No.	Name of the Post	No. of posts filled
1.	Chief (Fin.)	1
2.	Deputy Chief	2
3.	Assistant Secretary	1
4.	Assistant Chief	3
5.	Bench Officer	1
6.	Private Secretary	4
7.	Assistant	1
8.	Personal Assistant	3
	<b>Total</b>	<b>16</b>



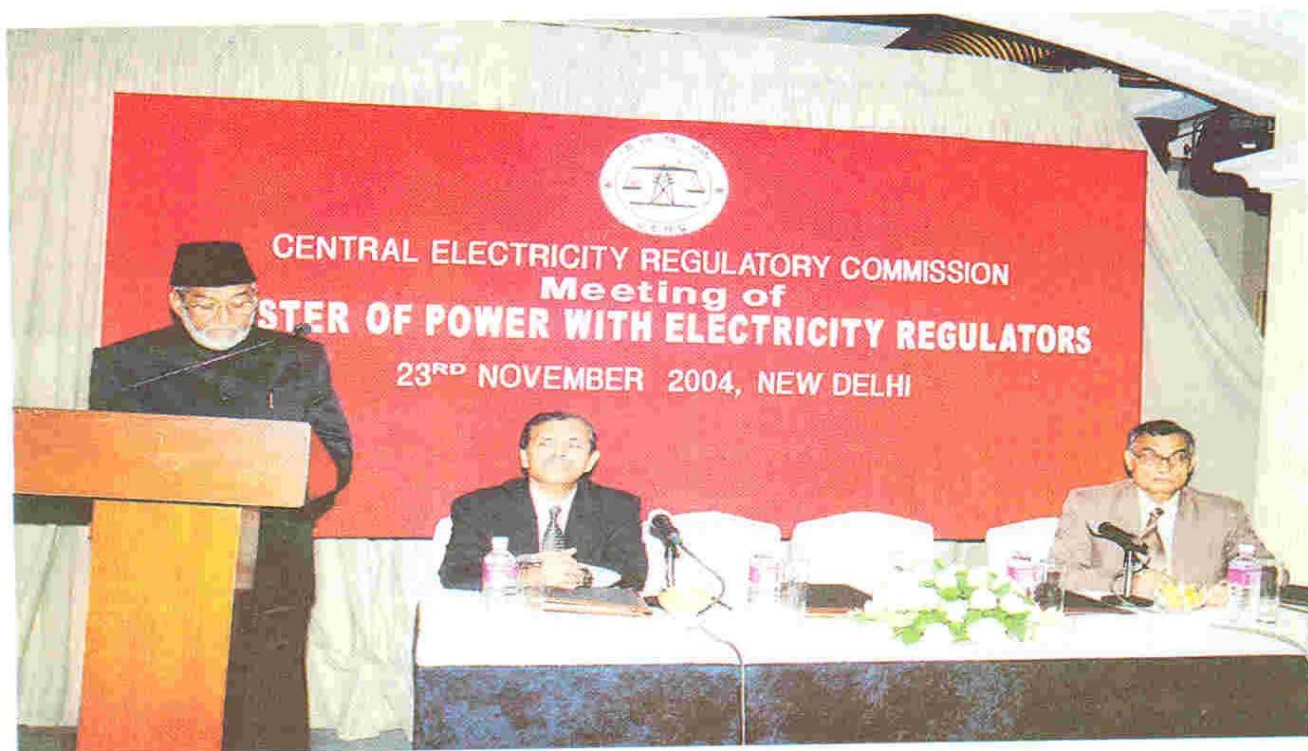


## THE YEAR IN RETROSPECT

### ☆ Interaction with the Minister of Power :

An interaction of Chairpersons and Members of all Regulatory Commission with the Minister of Power was held on 23<sup>rd</sup> November, 2004 at New Delhi. The Central Commission coordinated this meeting in which the Regulators shared their experiences on the functioning of the Regulatory Commissions. The Minister of

Power was apprised of the various significant steps taken, orders/regulations issued by the Regulatory Commissions towards implementation of the provisions of the Electricity Act, 2003. The Regulators also shared the problems e.g., lack of adequate manpower, infrastructure support, non-operationalisation of special fund being faced by them in discharging their functions as an independent institution.



*Meeting of Minister of Power with Electricity Regulators on 23.11.2004*

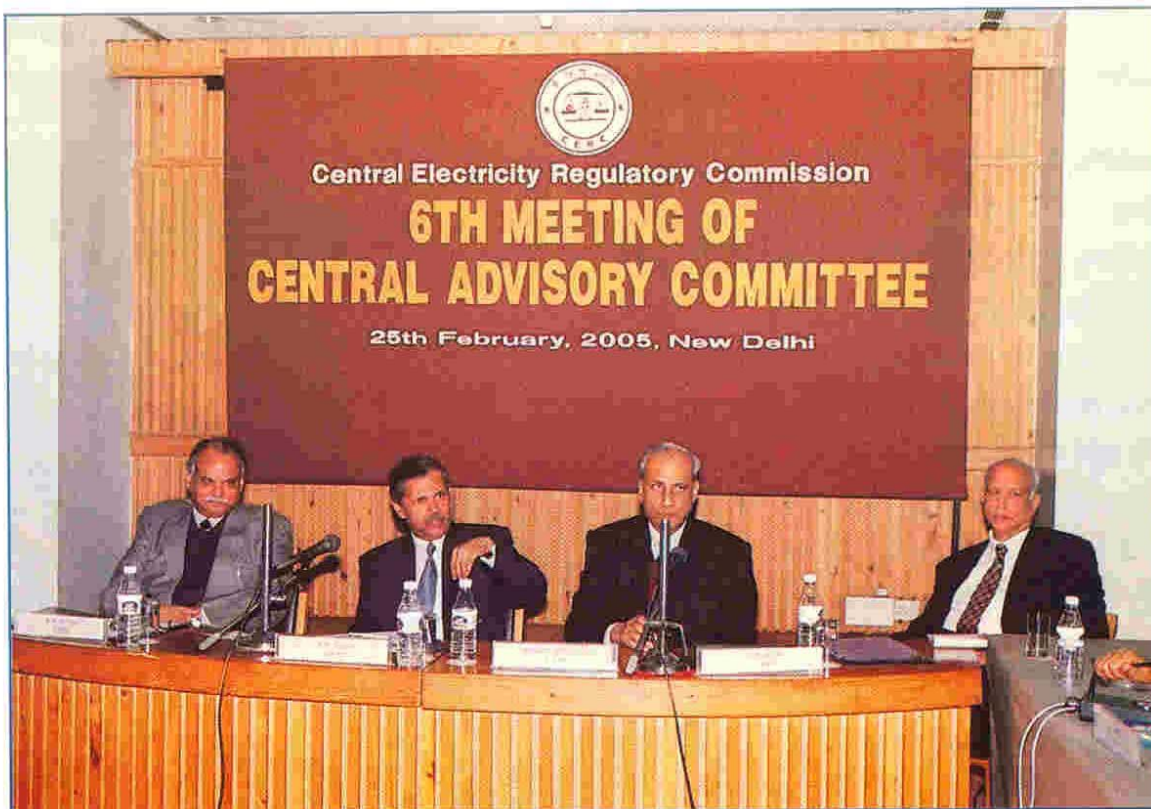


### ☆ Central Advisory Committee (CAC) :

The Commission has constituted Central Advisory Committee (CAC) by representation from Commerce, Industry, Transport, Agriculture, Labour, Consumers, Non-Governmental Organisations and Academic & Research bodies in the energy sector to get advice on policy formulation, quality, continuity and extent of service provided by licensees, compliance by the licensee with the license conditions and requirements of the license, protection of consumer interest and energy supply and overall standards of performance by utilities. The composition of the Central Advisory Committee was as follows:

1. Shri. Yogendra Prasad, Chairman & MD, NHPC, Faridabad.
2. Shri. C.P. Jain, Chairman & MD, NTPC, New Delhi
3. Shri. R.P.Singh, Chairman & MD, PGCIL, New Delhi
4. Dr.D.V.Kapoor, Chairman, Reliance Power Ltd., New Delhi
5. Shri.F.A.Vandrevala, Managing Director, Tata Power Company Ltd., Mumbai
6. Shri.V.Raghuraman, Senior Advisor (Energy) CII, Gurgaon
7. Dr.Amit Mitra, Secretary General, FICCI, New Delhi
8. Shri.Jai Prakash Gaur, Chairman & MD, Jai Prakash Industries Ltd., New Delhi
9. Shri.Ravi Mohan, MD, CRISIL, Mumbai
10. Shri. P.P Vora, Chairman & MD, IDBI, Mumbai
11. Shri.K.Ramanathan, Senior Fellow, TERI, New Delhi
12. Shri.Suman Kumar Bery, Director General, NCAER, New Delhi
13. Shri T.L. Sankar, Advisor, Administrative Staff College of India, Hyderabad
14. Prof.Badal Mukherji, The Delhi School of Economics, Delhi
15. Prof. V.Ranganathan, IIM, Bangalore
16. Shri.Deepak Parekh, Chairman, HDFC, Mumbai
17. Shri.Suresh Chand Gupta, Member(Electrical), Railway Board, New Delhi
18. Shri.S. Skandan, Chairman, TNEB, Chennai
19. Shri.Girish Sant, Prayas, Pune
20. Shri.K.C.Naikwadi, Chairman, All India Power Engineers Federation, Bangalore
21. Shri.Anil D. Ambani, Chairman & MD, Reliance Energy Ltd., Mumbai
22. Shri.Malay Kumar De, Chairman, WBSEB, Kolkata





23. Shri Rajiv Lal, MD and CEO, IDFC, Mumbai

The 6<sup>th</sup> meeting of the Central Advisory Committee (CAC) was held on 25<sup>th</sup> February, 2005 at India International Centre (IIC), New Delhi to discuss the important Orders/ Regulations issued by CERC on "Terms and Conditions of Tariff", "Open Access in Inter-State Transmission" and "Inter-State Trading" and also to deliberate on the emerging issues of Market Development. In particular, the following issues were discussed :-

- ◆ All Members appreciated the outcome of the Availability Based Tariff (ABT) regime in stabilizing the grid frequency.

- ◆ The need for monitoring of inter-State trading activities was reiterated. It was viewed that the trading activities could be monitored based on the efforts made by the licensees in any bidding process as well as in terms of the actual volume of the trading undertaken by the trader.
- ◆ The issue as to whether cost of traded power should be regulated was discussed in detail.
- ◆ The issue of separate tariff for peak and off-peak hours was discussed and it was felt that the industries need to be more competitive to reap the benefits of Time of Day (ToD) tariff. It was also felt that this issue needs further deliberations.



6<sup>TH</sup> CAC MEETING HELD ON 25<sup>TH</sup> FEBRUARY, 2005

- ◆ The issue of benchmarking of cost of a generation project was discussed and it was generally viewed that till the competitive bidding process is fully in place, the generation project could be classified into packages and bids invited against each such specified package.

☆ **MOUs/Bilateral Agreements with Foreign Governments/ International Organisations :**

**A. Memorandum of Understanding (MOU):**

- (i) between Central Electricity Regulatory Commission (CERC)

and Massachusetts Department of Telecommunications and Energy (MDTE),

- (ii) MOU between CERC and US Energy Association (USEA); and
- (iii) MOU between CERC and Federal Energy Regulatory Commission (FERC)

The CERC, MDTE and FERC have agreed to participate as partners in the India Energy Partnership Program (IEPP). The USEA has entered into a co-operative Agreement with the U.S. Agency for International Development (USAID) Office of Energy, Environment and Technology, whereby





USEA has agreed to organise and implement an India Energy Partnership Program (IEPP). The IEPP recognises the mutual interest between FERC & CERC and MDTE & CERC in exchange of information and experience. The IEPP is designed for mutual transfer of experiences and information back and forth between FERC & CERC and MDTE & CERC in an effective and efficient manner and to foster long-term sustainable relationships between the partners. It may involve all aspects of regulatory operations and administration such as management,

restructuring, finance and accounting, independent power marketing, customer service, bulk power transactions, telecommunications, strategic planning and other necessary areas of expertise.

#### **B. Visit of Chinese delegation:**

A delegation led by Chairman, State Electricity Regulatory Commission, People's Republic of China visited CERC on 11<sup>th</sup> October, 2004 to share experiences on electricity regulation.



*Meeting with Chinese Delegation : 11<sup>th</sup> October, 2004*



☆ **Notifications Issued during 2004-05**

Sl.No.	Notification No. & Date	Subject
01.	108 dated 11.06.2004	Provisional billing of charges for a period of six months w.e.f. 01.04.2004 subject to adjustment after final determination of tariff by Commission in accordance with the revised terms and conditions notified on 29.03.2004.
02.	130 dated 22.07.2004	CERC (Payment of Fee) Regulations, 2004.
03.	135 dated 03.08.2004	CERC (Procedure for making of application for determination of tariff, publication of the applications and other related matters) Regulations, 2004.
04.	157 dated 09.09.2004	CERC (Terms & Conditions of Tariff) (First Amendment) Regulations, 2004.
05.	173 dated 14.10.2004	Billing Charges up to 31.03.2005.
06.	23 dated 23.02.2005	CERC (Open Access in inter-State Transmission) (First Amendment), Regulations, 2005.
07.	38 dated 29.03.2005	Billing Charges up to 30.09.2005.

☆ **Seminar/Conferences/Training/  
Exchange Programs**

The details of Seminar / Conferences /  
Training / Plant visits / Exchange

Programs attended by the Chairperson,  
Members, Secretary and Staff of the  
Commission are provided in **Annexure III  
and Annexure IV.**



## ANNUAL STATEMENT OF ACCOUNTS

Consequent to enactment of the Electricity Act, 2003, the Central Electricity Regulatory Commission is being extended budgetary support by the Central Government as Grants-in-aid from the Financial Year 2004-05 onwards. The Central Commission has been operating the Central Electricity Regulatory Fund. The grants/loans made by the Central Government, all fees received and all sums received by the Central Commission from such other sources as may be decided by the Central Government are credited therein. The fund is applied for

meeting the expenses on salary, allowances and other remuneration of the Chairperson, Members, Officers and other employees of the Central Commission and also the expenses incurred by the Commission in discharge of its function etc.

2. During the Financial Year 2004-05, the budgetary support of Rs. 6.71 crore was extended to the Central Commission as grants-in-aid against which expenditure incurred was Rs.6.44 crore. The major share of expenditure was on RRT followed by salary.

## REGULATORY PROCEDURES AND PROCESSES

The Central Commission in discharge of its functions under the provisions of the Electricity Act, 2003 :

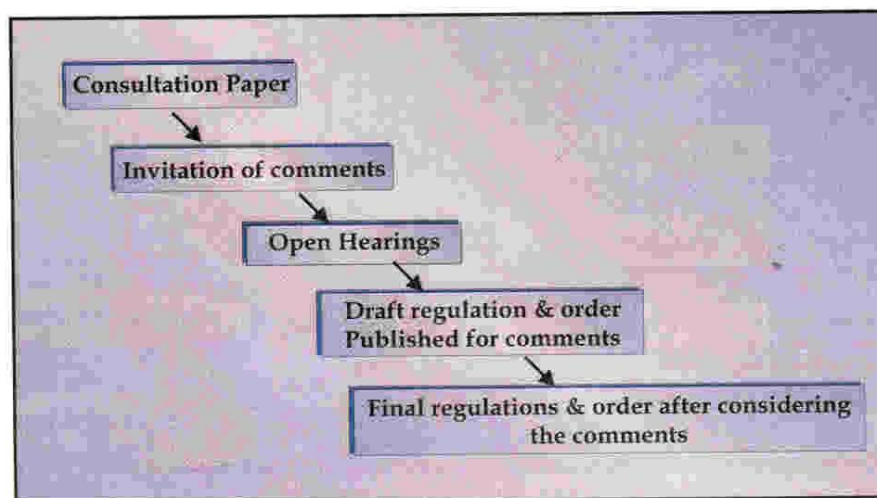
1. notifies Regulations and
2. issues orders on petitions relating to
  - ◆ grant of licence
  - ◆ determination of tariff
  - ◆ review and miscellaneous petitions.

### 1. Procedure for notifying regulations

The Commission follows a detailed and

transparent process before issuing a Regulation. To start with, a Consultation Paper is developed on the issue on which a Regulation is proposed to be made. Quite often the consultation paper is prepared at the staff level and is also called Staff Paper. The Consultation Paper/Staff Paper is then given wide publicity through electronic and print media inviting comments and suggestions from the stakeholders. On receipt of the comments, open public hearings are held to discuss the issues threadbare. Based on the comments received and the discussions in the public hearing, draft Regulations are formulated. As per the requirement of the Act, the draft Regulations then undergo the

### PROCEDURE FOR REGULATIONS







process of 'previous publication'. This implies that the draft Regulations are published for comments from the stakeholders. It is only after receipt and consideration of the comments that the Regulations are finally published/notified in the Gazette of India. These regulations are then forwarded to the Government of India for laying before each House of Parliament.

## 2. Procedure for orders on petitions

Petitions/Applications are made before the Commission primarily for

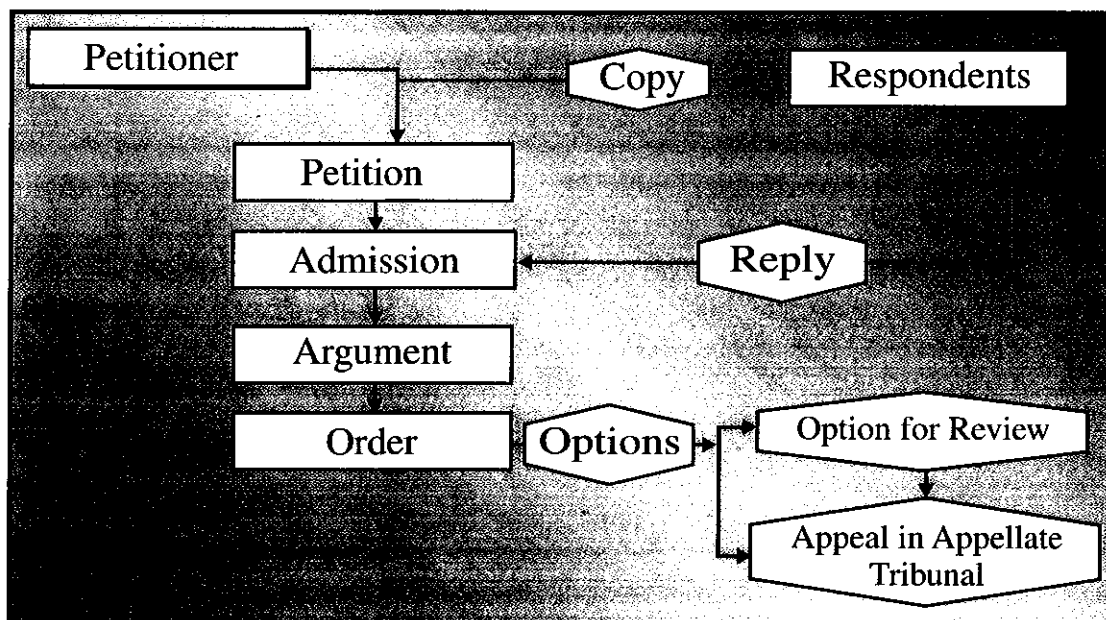
- ◆ tariff determination for generation and transmission;
- ◆ grant of licence for inter-State Transmission and inter-State trading in electricity.

Apart from the above, the following petitions/applications are also filed before the Commission:-

- ◆ Miscellaneous Petition
- ◆ Review Petition

The applicants file petitions with prescribed fee and serve a copy of their petition to all concerned. The applicants are also required to publish their application on their website and give notice in newspapers inviting objections and suggestions from the public. Thereafter, public hearings are held where the petitioners and the respondents argue their case before the Commission. The Commission passes final orders on the petition after hearing all concerned. The petitioners and the respondents are allowed under the law to file for review before the Commission or appeal against the orders of

### Procedure for Orders on Petition





the Commission before the Appellate Tribunal of Electricity.

## 2.1 Process and Principles of Tariff Determination

Prior to the creation of CERC, the tariff of central generating companies namely NTPC, NHPC, NLC and NEEPCO were being determined by Government of India through project specific notifications. The Central Electricity Regulatory Commission came into existence in July, 1998 under the Electricity Regulatory Commissions Act, 1998. The determination of tariff inter alia of central generating companies was entrusted to CERC. In order to discharge this task, the Commission was required to finalise terms & conditions of tariff. After going through transparent process of hearing all stakeholders, the Commission finalised and notified Terms & Conditions of tariff initially for a three-year period i.e. 2001-04 in March 2001. Commission notified new Terms & Conditions of tariff for a further five-year period i.e. 2004-09 in March 2004. The above notifications provide for determination of generation tariff station-wise and transmission tariff line or system-wise.

The tariff is determined as per the terms & conditions of tariff as applicable from time to time. The terms & conditions contain the financial norms and technical norms. The tariff is usually called the cost plus tariff because the capital cost of the project is the

starting point for tariff calculations. It would be more appropriate to call it regulated tariff because other than actual capital expenditure, most of the financial & technical parameters adopted for tariff are normative and not actuals. The variable charges of thermal stations are corrected for fuel price variation as per monthly weighted average price and heat value of fuel.

The tariff calculations are quite elaborate, as various elements going into the tariff are computed individually to arrive at the full tariff. The tariff is different for each generating station depending on its admitted capital cost, base fuel price & GCV and applicable norms of efficient operation. The exercise is time consuming but nevertheless essential to ensure that the utilities function in an efficient and economic manner and do not misuse their dominant position to extract high prices from the buying utilities.

The tariff of thermal generating stations consists of two parts: -

- 1) Annual Fixed Charges (AFC)
- 2) Variable Charges

The Annual Fixed Charges consist of five elements namely

- ◆ Return on Equity
- ◆ Interest on Loan
- ◆ Depreciation
- ◆ Advance against Depreciation (AAD)



- ◆ O&M expenses
- ◆ Interest on Working Capital

The AFC is computed based on prudent capital expenditure admitted by the Commission. Commission may disallow or limit a capital expenditure if not found justified, giving reasons in the tariff order. All the stations regulated by CERC have to follow 'day ahead' scheduling procedure and declare their availability on 'day ahead' basis. The annual availability of the station is the weighted average of the declared availability for each day of the year. The full recovery of Fixed Charges in case of thermal stations is linked to achieving Target Availability. There would be pro-rata reduction in the recovery of Fixed Charges below the level of Target Availability. The beneficiaries of the generating stations are required to pay the AFC irrespective of the quantum of electricity drawn.

The variable charges for thermal stations are payable based on norms of operation i.e. station efficiency in terms of heat rate (heat energy required for producing one unit of electrical energy), specific fuel oil consumption and auxiliary energy consumption. Fuel cost is calculated based on the specified norms and considering actual heat value (GCV) and prices of fuel on month to month basis. Central Commission does not have any control over the quality and price of fuel used for power generation. The variable charges are payable

corresponding to scheduled generation. The beneficiaries may prefer their drawal schedule on the basis of merit order of the stations depending upon the variable charges.

In case of hydro stations, there is no fuel component and the AFC is notionally divided into capacity charge and variable charge. The full recovery of capacity charges for a hydro generating station is linked to achieving target availability corresponding to water availability called the Capacity Index. The concept of Capacity Index ensures use of storage type hydro generating stations during peak hours and discourages spillage of water in case of run of the river hydro generating stations. The notional variable charge for the hydro generating station is the average least variable cost of the thermal generating stations in the region. This facilitates full despatch of hydro generating stations in merit order.

The Regional Load Dispatch Centers announce the final 'day ahead' dispatch schedules for the generating stations and drawal schedules for the beneficiary SEBs/ Discoms. Any deviations from the above schedules are treated as "Unscheduled Interchanges" (UI). The commercial accounting of UI is done through a variable frequency linked rate.

The utilities are also entitled to incentive for the station performance as per the incentive formula.



The tariff of transmission line/sub-station/transmission system consists of annual fixed charges linked to target availability. The transmission utility is also entitled to incentive for achieving availability higher than the target availability.

The tariff of central generating stations and Inter-state transmission systems are annexed

at the end of the Report. The Annual Fixed Charges have been converted into Paise/kWh to give a clear comparative picture of tariffs. The tariffs indicated for the year 2004-05 is provisional based on tariff for the year 2003-04. The Commission has started the process for the determining tariffs for the period 2004-09.



## ACTIVITIES DURING THE YEAR

**D**uring the year 2004-05, the Commission dealt with 319 petitions - 125 petitions carried forward from the previous year and 194 petitions filed during 2004-05. Of the total, 128 petitions were disposed of during 2004-05. Details of Petitions are documented in **Annexure-V**.

### IMPORTANT ORDERS AND REGULATIONS DURING 2004-05:

#### 1.0 Tariff determination

##### 1.1 Tariff determination for the thermal generating stations

The tariff period 2001-04 was already over and the Commission was therefore, required



to firm up tariff for the entire balance central thermal generating stations for the period 2001-04. In this pursuit, Commission dealt with following tariff petitions:

##### 1.1.1 Tariff petitions for the period prior to 2001

The Commission dealt with 5 tariff petitions for the period prior to 2001.

- ◆ Final tariff orders were passed for 4 NTPC stations namely Gandhar GPS, Farakka STPS, Kawas GPS and NCTPS, Dadri for the period up to 31.3.2001. The tariff petition for the period up to 31.3.2001 for Kahalgaon STPS of NTPC was revived after the approval of the revised cost estimates by the Competent Authority. The Commission heard the petition and reserved the order.

##### 1.1.2 Tariff petitions for the period 2001-04

The Commission dealt with 13 tariff petitions for the period 2001-04.

- ◆ Final tariff order was passed for FGUTPP stage-II station of NTPC from the COD to 31.3.2004. Provisional tariff order was passed for the Talcher TPS Stage-II of NTPC for the 2 units of 500 MW each commissioned up to 31.3.2004.
- ◆ Final tariff orders were passed for 4 NTPC stations namely Farakka STPS,



Talcher STPS, NCTPS (Dadri) and Anta GPS for the period 2001-04. Tariff for Auraiya GPS, Faridabad GPS and Ramagundam STPS for the period 2001-04 were revised. The tariff petitions for the period 2001-04 for the Kawas GPS and Gandhar GPS was reheard and order reserved.

- ◆ Final tariff order was passed for TPS-I Station of NLC. Hearings concluded for TPS-I (Expansion) station for the tariff period 2001-04 and order reserved. Tariff petition for the period 2001-04 for the TPS-II station of NLC was heard and NLC was asked to furnish additional details and clarifications.
- ◆ Tariff petition for the period 2003-04 for the Assam GPS and Agartala GPS stations of NEEPCO were heard and NEEPCO was asked to furnish additional details and clarifications. However, provisional two-part tariff was awarded due to implementation of ABT in the NE-region.

#### **1.1.3 Petitions for the approval of revised fixed charges on account of additional capitalisation for the period 2001-04**

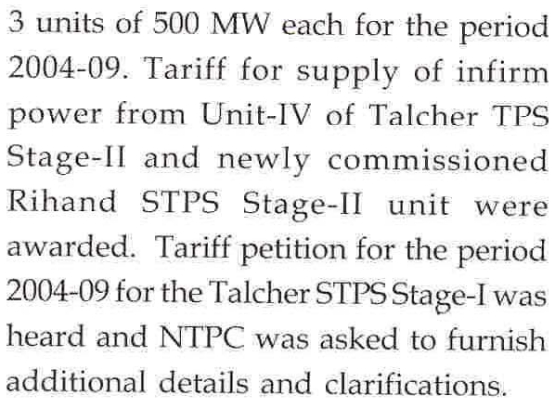
Twelve petitions filed by NTPC for the approval of revised fixed charges on account of additional capitalisation. The Commission found that in all of the petitions except two i.e. Tanda TPS and Talcher TPS, the additional capital expenditure was less than 20% of the capital cost as on 31.3.2001, admitted by the Commission for the purpose

of tariff. The Commission, therefore, in terms of provision at clause 1.10 of tariff regulations dated 23.3.2001 did not consider revision of fixed charges. Commission, however, decided to look into the admissibility of the additional capitalisation in order to arrive at capital cost as on 31.3.2004 for the purpose of determination of tariff for the period 2004-09 and NTPC was asked to furnish additional details and clarifications. The Commission was further of the view that the cost of servicing of the investment on additional capitalisation during the period 2001-04 must be reimbursed to the generators. Accordingly, the Commission issued final order approving additional capitalisation for the period 2001-04 for FGUTPP stage-I (420 MW). The Commission also held that cost of servicing of investment i.e. return on equity and interest on loan for the period 2001-04 corresponding to the additional capitalisation admitted by the Commission should be reimbursed in five years in equal monthly instalment.

#### **1.1.4 Tariff petition for the period 2004-09**

The Commission has also notified terms & conditions of tariff for the tariff period 2004-09 on 29.03.2004. The Commission in the process of determining station-wise tariff for the period 2004-09 for the Central generating stations based on the tariff petitions being filed by the generating companies, dealt with following 5 petitions:

- ◆ Provisional tariff order was passed for the Talcher TPS Stage-II of NTPC for the



- ii) North Eastern Electric Power Corporation Ltd. (NEEPCO),
- iii) Satluj Jal Vidyut Nigam Ltd (SJVNL),
- iv) Narmada Hydro Electric Development Corporation (NHDC)

**1.2.2** The Commission dealt 13 petitions relating to above hydro generating companies and of Tripura State Electricity Corpn. Ltd. Out of these 13 petitions;

- a) 6 pertain to tariff petitions of Chamera-II H.E. Project (NHPC), Indira Sagar H.E. Project (NHDC) (two petitions), Nathpa Jhakri H.E. Project (SJVN), Doyang H.E. Project (NEEPCO) and Kopili HE Project Stage-II (Extension) (NEEPCO).
- b) 5 Review petitions - 4 filed by NHPC and 1 filed by NHDC
- c) 1 relating to R&M of Loktak HE Project of NHPC
- d) 1 filed by Tripura State Electricity Corpn. Ltd., for addressing dispute for excess billing by the generator, NEEPCO

### 1.2.3 Out of the above petitions,

- ◆ Final tariff orders for the period 2001-02 to 2003-04 were issued in respect of

◆ Tariff Petition of Badarpur TPS owned by GoI for the period 2004-09 was heard and GoI was asked to furnish additional details and clarifications.

**1.1.5** Petition of M/s ISN International USA, an IPP for adopting tariff of proposed coal based generating station of 2000 MW in Sonbhadra district in UP purported to be through competitive bidding route was rejected. The proposed project was not found to be through competitive bidding route.

## 1.2 Petitions relating to hydro power stations:

**1.2.1** The CERC is regulating tariff of following Central Sector hydro power generating companies:

- i) National Hydroelectric Power Corporation Ltd. (NHPC),





4 nos Review petitions of NHPC, viz, Tanakpur, Salal, Uri and Chamera-I H.E. Stations.

- ◆ Review Petition of NHDC for Indira Sagar H.E. Project was dismissed at the admission stage.

- ◆ Doyang HEP (3 x 25 MW) of NEEPCO was commissioned in July 2000. Completion cost of the project as approved by GoI at February, 2000 price level, was Rs.758.70 crores which was very high for a hydro project of 75 MW capacity. There was reluctance on the part of the constituents of NE Region to buy such costly power from this project, which was at the rate of Rs.7/- per kWh. Commission vide order dated 17.4.2003 approved the provisional tariff @ Rs.2/kWh with escalation @ 5% p.a from the commissioning of the project based on the guidelines given by Ministry of Power to NEEPCO. Consequent upon implementation of ABT in NE Region from 1.11.2003, The Commission vide order dated 6.10.2003 converted the provisional single part tariff @ Rs.2/ kWh into two part tariff. The Commission subsequently confirmed that the provisional two part tariff allowed vide order dated 6.10.2003 may be taken as final tariff from the date of commercial operation of the

station up to 31.3.2004. Annual fixed charges allowed during the period 2001-02 to 2003-04 are as under:-

Year	AFC (Rs. in crores)
2001-02	41.57
2002-03	43.65
2003-04	45.83

- ◆ The Commission vide order dated 18.5.2004 allowed NHPC to proceed with renovation and modernisation of Loktak HE Project at an estimated cost of Rs.24.50 crores for undertaking following R & M works:-

- i) Replacement of all the three Runners.
- ii) Replacement of old version of Electro-hydro governor with a new governor suitable for free governor mode of operation.
- iii) C&I works.

R & M works on completion would enhance the maximum available capacity of three machines from the present 90 MW to 105 MW.

- ◆ Provisional tariff was allowed in respect of Indira Sagar HE Project for Unit No.1 to 7 for the year 2004-05. (tariff awarded can be seen in the following Table).





**Provisional tariff for Indira Sagar HEP (8 x 125 MW) of NHDC for the period  
01.04.2004 to 31.03.2005.**

(Rs. in lakhs)

	<b>Machines I to IV</b>	<b>Machines I to V</b>	<b>Machines I to VI</b>	<b>Machines I to VII</b>
Actual date of commercial operation	M/c-I-14.1.04 M/c-II-18.1.04 M/c-III -06.3.04 M/c-IV-29.3.04	M/c-V- 27.7.04	M/c-VI 1.11.04	M/c-VII- 7.1.05
Capital expenditure	137952	174479	210229	243294
<b>Annual Fixed Charges</b>				
Depreciation	3090.11	3908.34	4709.14	5449.79
Interest on Loan	7410.67	9372.93	11293.40	13069.61
Return on Equity	5793.96	7328.13	8829.64	10218.35
Advance against Deprecation	0.00	0.00	0.00	0.00
O&M expenses	2069.27	2617.19	3153.44	3649.41
Interest on Working Capital	481.01	608.38	733.03	848.32
<b>Total</b>	<b>18845.04</b>	<b>23834.96</b>	<b>28178.65</b>	<b>33235.47</b>
	<b>Machines I to IV</b>	<b>Machines I to V</b>	<b>Machines I to VI</b>	<b>Machines I to VII</b>
P <sub>1</sub> /P Ratio	0.66248	0.85456	0.85456	0.85456
Proportionate Annual Fixed Charges	12484.46	20368.41	24541.81	28401.71
<b>Provisional Annual Fixed Charges</b>	<b>10611.79</b>	<b>17313.15</b>	<b>20860.54</b>	<b>24141.45</b>

## 2.0 First amendment to regulations on open access in inter-State transmission.

Open Access in transmission was introduced by the CERC for the first time in February 2004 in



pursuance of the Electricity Act, 2003. On the basis of operational feedback received from various stakeholders and public hearing held in January, 2005, in order to streamline the procedure, the Commission approved some amendment in 2005. The Central Electricity Regulatory Commission (Open Access in inter-State Transmission) (First Amendment) Regulations, 2005 was notified in the Gazette of India on 21<sup>st</sup> February, 2005. Transmission access is an important mechanism for opening up the electricity sector in the interest of the consumer. The Commission has tried to simplify the process and made it more user-friendly.

The important amendments are as follows:

(a) Monthly time table for advance reservation of transmission capacity

- ◆ A monthly timetable has been introduced for the first time for

grant of transmission access to short-term customers in a transparent and organized manner.

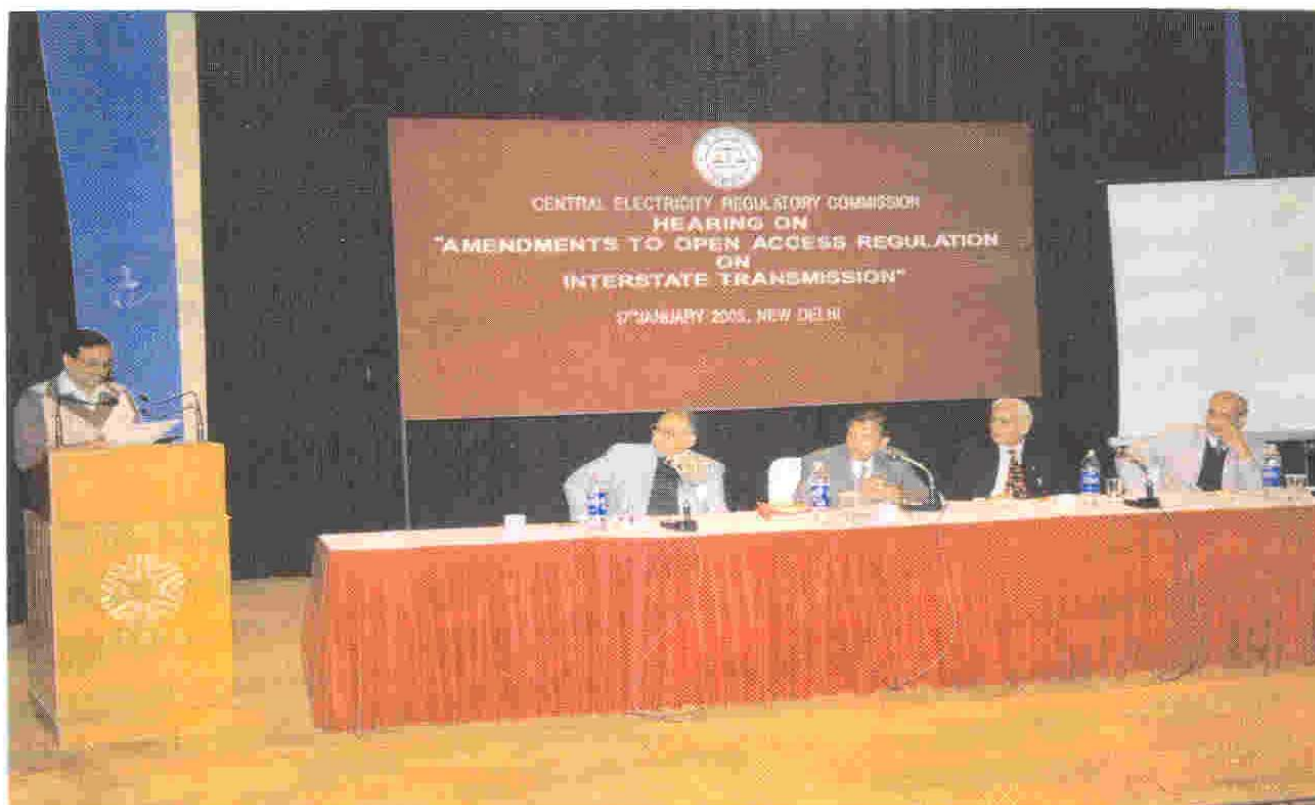
- ◆ There will be provision for advance reservation for a period extending up to next three months for which applications can be submitted by 19<sup>th</sup> day of the month.
- ◆ All applications received up to 19<sup>th</sup> day of the month for advance reservation shall be processed together and access shall be granted by 26<sup>th</sup> day of the month.

(b) Congestion management by e-bidding

For advance reservations for short-term customers, congestion management shall be done through electronic bidding. However, the maximum bid price shall be capped at 125% of the rate applicable for long-term customers to prevent volatility of transmission prices on the congested corridors. Short term customers who do not make advance reservations are free to seek open access on first cum first served basis for a maximum period of one month subject to availability of transmission capacity.

(c) Part-day charges to reduce cost of wheeling of peaking power

The transmission charges for short terms customers shall be declared in terms of Rupees/ MW/Day. However, the



Commission has decided that for part day users up to 6 hours in a day, only one fourth (1/4th) of the per day charges shall be applied. Similarly for part day users up to 12 hours in a day, only half of the per day charges shall be applied.

- (d) Exit option granted to short term customers

With a view to providing flexibility to the parties engaged in electricity trading, an exit option has been provided where by a short term customer can surrender, cancel or reduce the reserved transmission capacity by payment of a minimum of 7 days charges or the balance period of reservation, which ever is shorter.

- (e) New pricing scheme for inter-regional links

Taking cognizance of the fact that there is a basic shift in the nature of use of inter-regional links from that of bilateral grid support to power trading and inter-regional allocations, the Commission has decided to revise the methodology for applying transmission charges for inter-regional links as follows:

- ◆ Beneficiaries using inter-regional links for allocations from Central generation stations or other long-term contracts shall pay transmission charges pro-rata to their allocation and contracts vis-à-vis capacity of the inter-regional link.



- ◆ Balance capacity after allowing for security margin, shall be made available to short term Open Access customer for which the minimum rate shall be 50% of the last year's effective rate for long term use. Balance transmission charges for the inter-regional link if any, shall be shared on 50:50 basis by the two regions as reliability charges.

The new pricing scheme for inter-regional links shall significantly reduce the financial burden of the SEBs, who have the obligation to reimburse full transmission charges to POWERGRID but were not getting adequate relief, even when others were using the inter-

regional links to the extent of 100%. It is also expected that the new pricing scheme will be more conducive to future investment in the inter-regional links.

- (f) "Same day" and "Next day" trading made simple

In addition to meeting their seasonal demand, the SEBs / Discoms also need to enter into short term trading agreements on day to day basis in order to balance there demand-supply position as far as possible. The Commission has simplified the procedure for 'next day' and 'same day' transactions, in which no open access charges would be payable up front and the RLDCs shall accommodate such



*Hearing on amendment to Open Access Regulations*



requests subject to technical feasibility. Now a composite request for Open Access and scheduling for the next day can be made through the concerned SLDC by 3 P.M. of the day. In respect of un-requisitioned generating capacity the request can be made by 10 P.M.

- (g) Automatic rerouting on inter-regional links

Transmission capacity available for short term customers on the inter-regional corridors shall be regularly displayed on the RLDC web site and the customer may give standing instructions for automatic rerouting in the event of transmission congestion or constraints.

### **3.0 Review of terms & conditions of tariff regulation for the period 2004-2009**

Taking cognizance of the reasonable concerns of the stakeholders, the Commission suo-motu amended the following provisions of the terms & condition of tariff in Sept., 2004.

#### **3.1 Debt-Equity ratio**

The regulations provided that in respect of projects, both generation and transmission, debt-equity ratio to be considered for determination of tariff on the date of commercial operation shall be 70:30. It had also been provided that where equity employed is more than 30%, the amount of

equity for determination of tariff shall be limited to 30% and the balance amount shall be considered as the normative loan. However, in cases where actual equity employed is less than 30%, the actual debt and equity are to be considered for the purpose of tariff determination. The provisions made in the regulations implied that even in cases of projects declared under commercial operation before 1.4.2004, the tariff is to be computed by applying debt-equity ratio of 70:30, irrespective of actual debt and equity employed by the utilities or that considered for tariff determination for earlier periods.

The Commission considered this issue. In case of the generating stations declared under commercial operation before 1992, for the purpose of tariff, debt-equity ratio of 50:50 was implemented for which the state utilities had given their consent. In the two-part tariff set by Government of India after 1992, the debt-equity ratio was adopted as 50:50. The Commission adopted the same ratio for the tariff period 1.4.2001 to 31.3.2004.

The Commission decided to maintain the status quo ante, that is, as it existed up to 31.3.2004. As such, the regulations on debt-equity was amended as under:

- (1) The debt-equity ratio for all the existing generating stations/ transmission assets considered by the Commission for the purpose of fixation of tariff for the period



prior to 1.4.2004 shall be continued for the tariff period 2004-09.

- (2) In case of ongoing projects for which investment decisions have already been approved and the projects are likely to be commissioned during the course of the current tariff period, (1.4.2004 to 31.3.2009), the Commission shall consider the debt-equity in the ratio of 70:30, unless the utilities prove before the Commission to its satisfaction that there were compelling reasons for deploying equity higher than 30% and the same is in the interest of public at large. In case of deployment of lower equity, the actual equity shall be considered.
- (3) In case of new projects, which are approved on or after 1.4.2004, the equity shall not exceed 30% of the capital cost.

### 3.2 Unscheduled Interchange (UI) rate

A number of representations were received from the state utilities requesting for reduction of UI rates, which were enhanced by the Commission w.e.f. 1.4.2004. The reasons for the enhancement of ceiling UI rate from 420 paise/kWh to 600 paise/kWh had been elaborated earlier in the Commission's order dated 16.1.2004. After a review of all representations at the draft regulation stage, the same had been confirmed by the Commission in its order dated 29.3.2004.

Many of the state utilities urged for lowering the ceiling UI rate, while some others seem to be mainly concerned at the high level of UI rate at 50.0 Hz (200 paise/kWh w.e.f. 1.4.2004). The state utilities falling in the latter category felt that the ceiling UI rate of 600 paise/kWh is in order, but the UI rate at 50.0 Hz should be only around 140 paise/kWh.

At the stage of finalisation of the regulations, some of the utilities had expressed the view that the present UI rate of 420 paise/kWh was not sending the desired commercial signals of maximising generation under low frequency conditions. Due to the high variable cost/energy charges for liquid fuel generation, the beneficiaries were tending to fulfilling their demand through over draws by paying UI charges rather than scheduling drawal from the costlier liquid fuel-based generating stations, intra-state as well as Central. Since all the state beneficiaries were generally resorting to this practice, this was causing low frequency operation in the grids. The Commission, therefore, favoured raising of the highest (ceiling) UI rate to remedy the situation and accordingly decided to increase the ceiling UI rate applicable at frequency of 49 Hz and below to 600 Paise /kWh. The linear relationship between frequency and UI rate in the frequency range of 49 Hz to 50.5 Hz was not disturbed. This had the desired result of improving despatches from the liquid fuel-based generating stations, particularly during peak load/shortage periods.

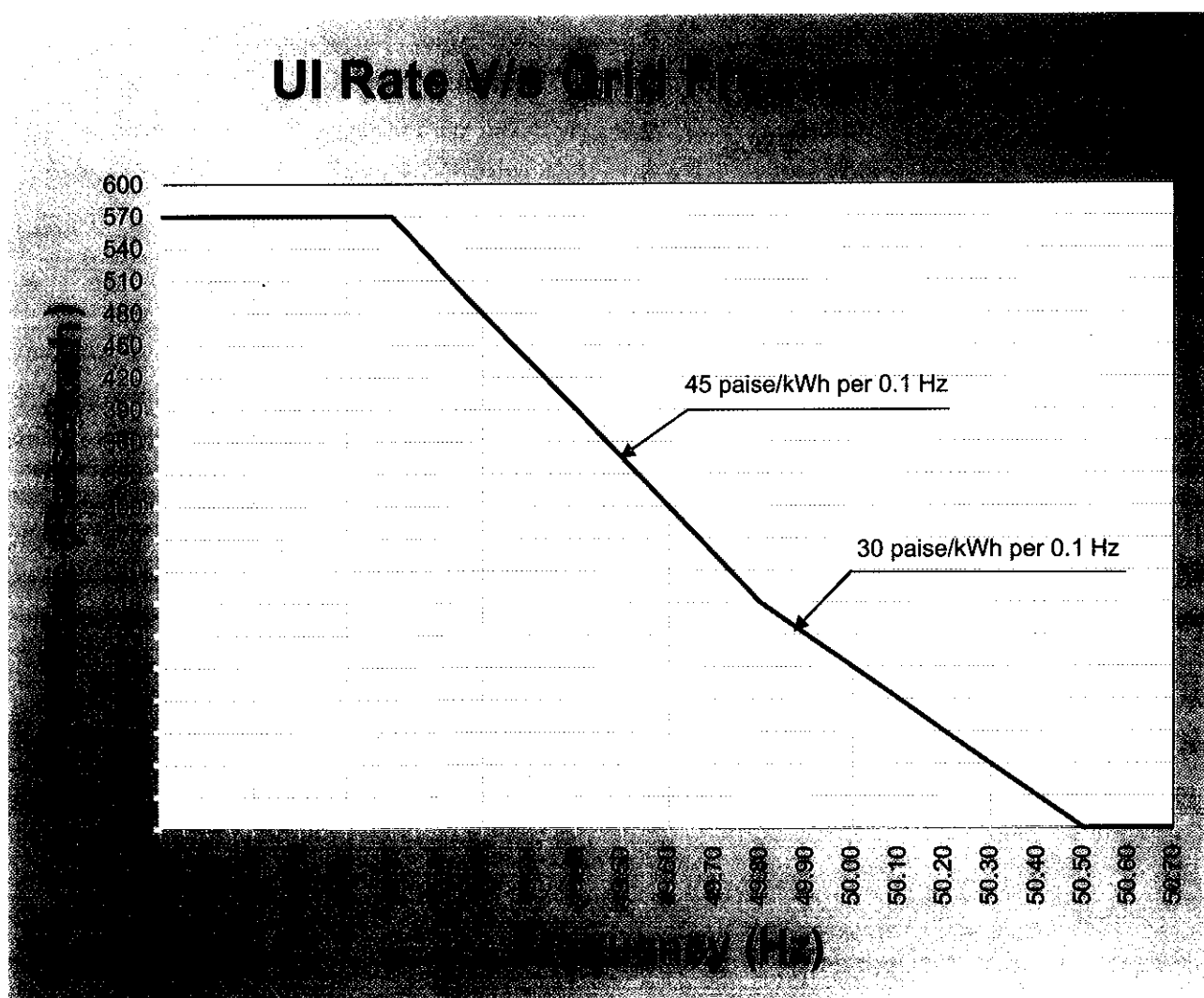




However, it was learnt through inter-action with the Regional Load Despatch Centres that the present UI rate is causing the grid frequency in different regions to be above 50.0 Hz for a few hours every day. This is because even many load centre thermal stations (with a variable cost in the range of 150-200 paise/kWh) do not get a commercial signal for backing down until the frequency has gone above 50.0-50.1 Hz. Taking cognizance of the above situation, and taking a balanced view of all aspects, the

Commission felt that it was desirable to reduce the UI rate at 50.0 Hz from 200 paise/kWh to 150 paise. The UI rate should have a slope of 30 paise/kWh per 0.1 Hz from 50.5 Hz to 49.8 Hz, and a slope of 45 paise/kWh per 0.1 Hz from 49.8 Hz to 49.0 Hz, resulting in a ceiling UI rate of 570 paise/kWh instead of 600 paise/kWh.

The variation of UI Rate with grid frequency are depicted in the graph .





### 3.3 Late Payment Surcharge

On the question of late payment surcharge it was laid down in the regulations that in case the payment of bills is delayed by the beneficiaries beyond a period of one month from the date of billing, late payment surcharge at the rate of 1.25% per month shall be levied by the generating company or the transmission utility. It was represented by the state utilities that the provision in the regulations is at variance with the provisions of tripartite agreements signed by the Central Government, the State Governments and the Reserve Bank of India on the question of settlement of dues of the central power sector utilities by the state utilities. The state utilities, therefore, sought modification of the above noted regulations so that these could be brought at par with the provisions of tripartite agreement.

The Commission was in agreement with the demand made by the state utilities. The tripartite agreements provide that the payment of the bills by the State Electricity Boards or their successor entities shall be made not later than 60 days from the date of bills or within 45 days from the receipt, whichever is later. Keeping in view the spirit of the provisions made in the tripartite agreements, The Commission felt that the late payment surcharge should be leviable only where payments are delayed beyond 60 days. Accordingly, these regulations were amended so that “period of one month” is substituted by “period of 60 days”.

### 3.4 Incentive for transmission system

In the tariff Notification issued on 26.03.2004, the incentive payable to the transmission licensee were to be calculated as under:

$$\text{Incentive} = \text{Annual Transmission Charges} \times \frac{[\text{Annual availability achieved} - \text{Target Availability}]}{\text{Target Availability}} ;$$

Where,

Annual transmission Charges correspond to intra-regional assets or for a particular inter-regional asset, as the case may be.

On further consideration of the matter, the Commission concluded that linking of incentive with annual transmission charges does not appropriately reward the better performance by the transmission licensee. The reason being that with passage of time annual transmission charges get reduced over the life of the asset while the maintenance expenses increase with the aging of the transmission system. In order to provide right signals for maximisation of availability of the transmission system the Commission revised the formula for computation of incentive as under:

$$\text{Incentive} = \text{Equity} \times [\text{Annual availability achieved} - \text{Target availability}] / 100$$

The regulations also provided that no incentive is payable above the availability of 99.75% for AC System and 98.5% for HVDC



System. To enable the transmission licensee to maximise availability of the transmission system by using modern maintenance techniques, such as hotline washing, the Commission decided to dispense with the upper limit of target availability for payment of incentive.

#### **4.0 Draft regulation on Terms & conditions for grant of transmission licence and other related matters**



Transmission of electricity is an important activity in the context of growth of power sector in India. Strengthening of the transmission network is a priority area especially in view of the boost that the generation of the electricity is likely to get due to delicensing of the generation in the Electricity Act, 2003. It has since long been recognised that the massive investment which is required in the transmission sector is not possible without participation of the private sector. For this purpose, the provision for licencing of transmission was first introduced in 1998 and reinforced in the Electricity Act

2003. According to provisions of the Electricity Act, 2003, transmission licencing and the responsibility of issuing licence for inter-State transmission continues to be with CERC. This Act requires CERC to specify the application form and the manner in which the application for the licence for inter-state transmission shall be made. This Act also empowers CERC to specify any general or specific conditions applicable to transmission licensees. Keeping in view the requirements of the Act, CERC issued draft regulations inviting comments of the stakeholders by 30<sup>th</sup> September, 2004. The Salient provisions of the draft regulations are as under:

- ◆ Any person interested in obtaining inter-state trading licence shall apply to the CERC in the format enclosed with the draft regulations.
- ◆ The applicant has to publish his application, within 7 days of making such application, in at least one English daily newspaper and one vernacular newspaper. The publication shall include details such as share holding pattern, and management profile of the applicant, location of the transmission lines and sub-stations, long-term customers of the transmission project etc.
- ◆ The applicant company need not possess relevant technical experience but it has to deploy personnel with relevant experience.



- ◆ The applicant must have net-worth at least equal to the estimated annual transmission charges.
- ◆ Transmission charges shall be payable as per applicable tariff notification of the Commission. However, if tariff is determined through transparent process of bidding in accordance with the guidelines issued by the Central Government, CERC shall adopt the same.
- ◆ The licence shall be valid for a period of 25 years from the date of issue unless revoked earlier.
- ◆ The licence fee for the construction period shall be Rs one lakh. However, after commissioning of the project, the annual licence fee shall be 0.1% of the annual transmission charges subject to minimum and maximum of Rs one lakh and Rs one Crore respectively
- ◆ The terms and conditions of the licence may be amended by the Commission in the public interest or on an application made by the licensee, following the procedure outlined in the Act.
- ◆ The licence may be revoked in the event of defaults or violation of any of the terms and conditions of the licence.

The Commission has received some thought provoking comments from the stakeholders, which are being considered by the

Commission with a view to finalize these regulations.

### **5.0 Petitions for the review of O&M charges as per actual escalation rates in terms of CERC tariff regulations dated 26.03.2001**

Four review petitions were filed by UPPCL for the revision of O&M charges for the tariff period 2001-04 as per actual escalation rates in terms of CERC tariff regulations dated 26.3.2001. These petitions were clubbed with the Suo-Motu Petition by the Commission, which was disposed off after due process of hearing.

As per the notification dated 26.3.2001, operation and maintenance (O&M) charges, including insurance for the generating stations belonging to the Central Power Sector Utilities, in operation for 5 years or more in the base year of 1999-2000, are derived on the basis of actual O & M expenses, excluding abnormal O & M expenses, if any, for the years 1995-1996 to 1999-2000 as certified by the statutory auditors. The average of actual O & M expenses for the years 1995-1996 to 1999-2000 is considered as O & M expenses for the year 1997-1998, which is escalated twice at the rate of 10% per annum to arrive at O & M expenses for the base year 1999-2000. Thereafter, the base O & M expenses for the year 1999-2000 are escalated at the rate of 6% per annum to arrive at permissible O & M charges for the relevant year during 2001-02 to 2003-04.



The notification dated 26.3.2001 further provides that if the actual escalation factor computed from the observed data lies within 20% of the notified escalation factor of 6%, that is, the escalation factor is in the range of 4.8% to 7.2%, this variation is to be absorbed by the Central Power Sector Utilities or the beneficiaries, as the case may be. In case of escalation factor being beyond these limits, adjustment is required to be made by applying actual escalation factor arrived on the basis of weighted price index of CPI for industrial workers (CPI\_IW) and index of selected components of WPI (WPIOM) from

published data for the tariff period was to be computed in a specified manner.

Based on the published data of CPI\_IW and component-wise WPI for the period ending 31.3.2004 the staff of the Commission had calculated O&M escalation factor for thermal and hydro generating stations and also the inter-state transmission system in keeping with the methodology specified in the notification dated 26.3.2001. The year-wise inflation rates (escalation factor) for the years 2000-01 to 2003-04 as computed by the staff of the Commission were as follows:

#### INFLATION RATES DURING 2000-01 TO 2003-04 (in %)

	2000-01	2001-02	2002-03	2003-04
Thermal Power Generating Stations	4.45	3.49	2.70	4.62
Hydro Power Generating Stations	4.29	3.69	3.02	4.43
Inter-state Transmission System	4.36	3.62	3.11	4.41

NTPC, NHPC and PGCIL were of the view that O&M charges need to be revised only for deviations beyond the limit of 4.8% and 7.2%. It was illustrated that in case the actual escalation factor is 8%, revision of O&M charges is to be effected by applying adjustment of 0.8%, that is, 8% minus 7.2%. Similarly, in case actual escalation is 4%, then again revision of O&M expenses is to be made only for deviation of 0.8%, that is, 4.8% minus 4%.

The Commission did not find any force in this submission made on behalf of the Central Power Sector Utilities and observed that

notification-dated 26.3.2001 provides that there would be no adjustment when the escalation factor lies between 4.8% to 7.2%. However, where escalation factor is beyond these limits, O&M expenses are to be worked out by applying the actual escalation factor and not the marginal adjusted escalation factor as contended. The Commission, therefore, directed that O&M expenses for the period 1.4.2001 to 31.3.2004 shall be revised by applying the actual escalation factor as given above, correctness of which was not disputed by any of the utilities. This was in accordance with the letter and spirit of the



provisions made in the notification-dated 26.3.2001. The excess amount, if any, shall be adjusted or refunded to the State Utilities.

## **6.0 Suo-motu petition on competitive bidding guidelines for procurement of generation capacity**

The overall philosophy of Electricity Act is promotion of competition. The generation sector is generally acknowledged to be largely amenable to competition and hence procurement of energy should be done through competitive means to the extent feasible.

Section 63 of the Electricity Act, 2003 requires the appropriate commissions to adopt tariffs determined through transparent process of bidding in accordance with guidelines issued by the Central Government.

The Commission, therefore, initiated the dialogue by drafting "Draft competitive bidding guidelines for procurement of generation capacity on long term basis" and circulated the same to all concerned stakeholders and the experts inviting suggestions/comments. After hearing the stakeholders in an open hearing, the Commission finalized draft competitive bidding guidelines for procurement of generation capacity on long term basis". The same was sent to the Ministry of Power as a recommendation.

## **7.0 Suo-motu petition dealing with jurisdiction issue for the DVC generating stations & transmission system.**

Under the DVC Act, the tariff of DVC was being determined by DVC themselves. With the enactment of Electricity Act, 2003, a question arose whether the tariff of DVC should be determined by the CERC. The Commission in a Suo-Motu petition heard, the Government of India, Government of West Bengal and Government of Jharkhand and DVC. After going into the various provisions of Electricity Act, 2003 and DVC Act, the Commission held that the tariff of DVC shall be determined by the Commission and directed DVC to file an appropriate tariff petition before the Commission.

## **8.0 Dispute relating to open access in inter-State transmission**

8.1 A dispute relating to open access in inter-State transmission was referred to the Commission by Member Secretary, EREB. The



facts of the case are as under:

Tata Iron and Steel Company (TISCO) was having some surplus power. Amalgamated Transpower India





Limited (ATL), which could undertake inter-state trading in electricity under the interim orders of the Commission, entered into an agreement with TISCO on 28.2.2004, whereby the former agreed to buy 50 MW of power from the latter for resale to Haryana Vidyut Prasaran Nigam Ltd. The transfer of power was to be effected through 132 kV D/C line connecting the Jamshedpur sub-station belonging to DVC to Golmuri sub-station also at Jamshedpur belonging to TISCO. DVC, however, denied Open Access on the line in question to ATL on the ground that the said line forms part of its distribution system and therefore, is not governed by the regulations on Open Access, which apply to the inter-state transmission system. ATL reported the matter to Member Secretary, EREB in accordance with Regulation 35 of the regulations of Open Access. Member Secretary, EREB in its report has concluded that the line in question is a transmission line, forming part of inter-state transmission system. Despite a finding to that effect by Member Secretary, EREB, the issue could not be resolved. Therefore, Member Secretary, EREB reported the matter to the Commission. On receiving this report, the Commission started suo motu proceedings (Petition 55/2004) in the matter.

After analysing technical issues and legal provisions, the Commission concluded that 132 kV line connecting

DVC sub-station with TISCO sub-station is a part of inter-state transmission system belonging to DVC and shall be governed by the regulations on Open Access specified by the Commission.

- 8.2** Another dispute was brought to the notice of the Commission through a petition (No. 198/2004) by Global Energy Limited (GEL). GEL had sought direction to the WRLDC, ERLDC) and Central Load Dispatch-West Bengal State Electricity Board (CLDWBSEB) to grant open access to the petitioner for transmission of 30 MW of power every day during off peak hours in ER-WR corridor through WBSEB system in priority for any other similar application by any party.

According to GEL, it had entered into a contract with Calcutta Electricity Supply Company (CESC) to buy 30 MW of power during the period 1.12.2004 to 28.2.2005, for sale to MSEB in Western Region. The petitioner made an application for grant of open access for inter-state transmission of electricity in ER-WR corridor through the system belonging to the WBSEB. It is stated that the petitioner was advised by CLDWBSEB to apply for open access to its system for a period of one month at a time. Based on this advice, GEL applied for and was granted open access up to 31.12.2004, though GEL in its letter to CLDWBSEB is stated to have made clear that its contract for sale of



power was till 28.2.2005 and accordingly, it should be provided with open access up to 28.2.2005. GEL further stated that it made an application for grant of open access to the WRLDC, but is said to have learnt that Adani Export Ltd (AEL) has "transgressed" on GEL's ongoing contract with CESC and has made an application for open access in ER-WR corridor through WBSEB system for transmission of 30 MW of power from CESC to MSEB, which is a part of the transaction GEL was already carrying out. Under these circumstances, GEL alleged that the WRLDC, ERLDC and CLDWBSEB cannot grant open access to AEL for the same transaction as the petitioner was carrying out and for which it had been granted open access up to 31.12.2004.

The Commission noted that when this application was filed on 24.12.2004, neither an order to deny open access to the applicant was made nor a decision to grant open access to AEL was taken by the competent authority. Therefore, Regulation 35 was not applicable when the application was made. In accordance with Clause (i) of Regulation 13, a short-term customer is required to make an application for access to the nodal Regional Load Dispatch Centre, which was WRLDC in this case. GEL had made the application for grant of open access for the period ending 31.12. 2004 to the WRLDC and was granted open access. For open access for the period 1.1.2005 to

31.1.2005, the application was made to the WRLDC only on 17.12.2004. This application was not complete and accordingly, it was not processed by WRLDC. The defects in the application were removed by GEL on 20.12.2004. Thereafter it was processed by WRLDC in accordance with the laid down procedure. CLDWBSEB decided on 21.12.2004 in favour of the AEL by applying the principle of 'first-come-first-served', which principle it has been following consistently in the past. The Commission did not find any irregularity on the part of CLDWBSEB while considering the applications made by GEL. In view of the foregoing, the petition was dismissed at admission stage itself.

## 9.0 Petitions related to transmission licensing

9.1 Powerlinks Transmission Limited (PTL) was granted licence on 13.11.2003 for implementation of the transmission system. POWERGRID by virtue of provisions of the Act, is the Central Transmission Utility and a deemed licensee. Under the “buy-out” provisions contained in the agreements, between petitioner POWERGRID and petitioner PTL, POWERGRID may be required to purchase petitioner PTL’s utility upon termination of the agreements on occurrence of the events of default and the events of force majeure. A petition (No 41/2003) was filed seeking approval of provisions



related to Buy-Out of the Tala-Delhi Transmission Project by POWERGRID under the amended and restated Implementation Agreement and amended and restated Transmission Service Agreement.

It was noted that some of the provisions of the agreements do not provide for the Commission's approval before invoking the "buy-out" provisions. The Commission came to the conclusion that at this stage, the Commission can not agree to "buy-out" by any other person except the Central Transmission Utility, be such person the nominee of POWERGRID, without looking into the antecedents of such nominee, for the reason that before "buy-out" by any other person is effected, the Commission has to satisfy itself of the person's ability and capacity to execute the transmission system and undertake transmission of electricity. Therefore, the Commission directed that para 6.2.8 of Schedule 6 to the IA and para 4.2.8 of Schedule 4 to the TSA shall have to be omitted. Further, the Commission directed that the provisions made in Section 15 of the agreements in regard to settlement of disputes have also to be modified and brought in conformity with Section 158 read with Clause 10 of the transmission licence, so that the matters covered under Section 158 of the Act and clause 10 of the transmission licence are excluded from the dispute settlement mechanism provided under the agreements.

9.2 Another petition (No 51/2004) was filed by PTL seeking a clarification on the allowance of Transmission Majoration Factor applicable to Tala Transmission System presently being executed by the petitioner. The Commission through an amendment dated 21.09.2001 had inserted a provision in the tariff notification dated 26.03.2001 to the effect that in respect of the transmission projects executed through IPTC/JV routes, 10% (ten percent) mark up (pre-tax) on transmission charges shall be allowed as Transmission Majoration Factor. It was also provided that the Transmission Majoration Factor shall be allowed during the entire life of the transmission project to the new investor who has been granted a transmission licence under Section 27C of the Indian Electricity Act, 1910, up to 31-3-2004.

The Commission clarified that the petitioner shall be entitled to claim the Transmission Majoration Factor throughout the period of licence, which is 25 years from the date of issue.

## **10.0 Transmission tariff in North-Eastern region after implementation of ABT**

Prior to constitution of the Commission in 1998, the beneficiaries in North-Eastern region were paying tariff referred as Unified Common Pooled Transmission Tariff



(UCPTT) at the rate of 35 paise per kWh. based on an agreement arrived at NEREB forum. Earlier a petition (No.40/2000) was filed by POWERGRID and on consideration of facts on record, the Commission had directed that the respondents would be liable to pay the transmission charges at the rate of 35 paise per kWh of the power transmitted in the region. The tariff ordered was applicable from 1.2.2000 to 31.3.2004 or till such time the power generation matching the transmission capacity was available, whichever is earlier. It was further ordered that the difference between actual tariff and tariff of 35 paise per kWh approved by the Commission would be provided from the relief package, under consideration with the Central Government for the North Eastern Region to the petitioner. The Availability Based Tariff has been introduced in the North Eastern Region with effect from 1.11.2003. Under ABT regime, the regional transmission charges are to be shared in the ratio of allocation of power from the central generating stations. POWERGRID filed a petition (13/2004) with its suggestion for applying UCPTT on total ex-bus design/target energy of the ISGS stations in NER and the fixed transmission charges so derived be shared between the constituents of the North Eastern Region in proportion of their allocation in ISGS. The petitioner has placed records of the design/target generation capacity of different ISGS stations in the region vis-à-vis actual generation since April 2003 to show that the central generating

stations in the region are generating much below their installed capacity and this is affecting the revenue of the petitioner. The Commission decided that in respect of North Eastern Region-

- (a) with effect from 01.11.2003, and till the date UCPTT concept continues, regional transmission charges in NER shall be paid by the under-drawing beneficiaries according to their respective scheduled energy drawal from Central generating stations.
- (b) The over-drawing beneficiaries, and those importing power from outside NER under an agreement shall pay the regional transmission charges according to their actual energy drawal.
- (c) In case, a central generating station injects energy into the NER grid in excess of that scheduled by NER beneficiaries, either on account of a bilateral or as UI, the central generating station shall pay the UCPTT rate on such excess energy.

### **11.0 Review petition regarding completion cost of Bina-Nagda-Dehgam transmission line**

To give the background, an application (Petition No 93/2003) for grant of



transmission licence for implementation of 400 kV D/C Bina-Nagda-Dehgam transmission lines was made by the Consortium of Tenaga Nasional Berhad, Malaysia and Kalpataru Power Transmission Ltd., India (the Consortium). In the application the estimated completion cost of the transmission lines was stated to be Rs.675.87 crore. POWERGRID in its capacity as the Central Transmission Utility (CTU) was involved with the process of consideration of request of the Consortium for grant of transmission licence, in view of the provisions of sub-sections (3) and (4) of Section 15 of the Act. At that time POWERGRID had stated that the completion cost of the transmission line should be around Rs.617 crore and that the present petitioner could undertake the transmission lines through its own resources. During the course of further proceedings, the Consortium indicated the estimated completion cost of the transmission lines to be Rs.657 crore. However, in the affidavit filed on behalf of the CTU, the estimated completion cost of the transmission lines was stated to be Rs.557 crore, which according to the CTU should be the benchmark price for execution of the transmission lines. The Consortium in the affidavit had indicated the levelised tariff of Rs.99 crore per year for 30 years. In contrast, the CTU indicated the estimated levelised tariff of about Rs.73 crore per year. On consideration of the material available on record, including the estimated completion cost and the levelised tariff indicated by the

Consortium and the CTU, the Commission in its order of 27.4.2004 had turned down the application made by the Consortium for grant of transmission licence, since the proposals of the Consortium in support of the prayer for grant of transmission licence were not considered to be in the interest of the consumer. While disposing of the application made by the Consortium, the Commission in para 27 of the order observed that POWERGRID, who was now required/ prepared to construct the transmission lines, shall make every endeavour to execute the transmission lines within the benchmark price of Rs.557 crore and in any case, the total cost should not exceed Rs.617 crore.

POWERGRID filed a petition (58/2004) seeking omission of para 27 of the order dated 27.4.2004. The Commission came to the conclusion that it is in the interest of justice and fair play that POWERGRID who is now constructing the transmission lines, is not permitted to back out from the representations made before the Commission and is estopped from stating anything to the contrary at this stage or at any later stage. Therefore, the petition was rejected by the Commission.

## **12.0 Petitions related to non-compliance of directions of RLDC and maintenance of grid frequency**

A petition (No 38/2004) was filed by Northern Regional Load Despatch Centre



(NRLDC) seeking a directive to UPPCL to contain its overdrawals from the Northern Regional Grid and to plan its load during the summer season. The petitioner has alleged that the respondent is one of the main utilities in the Northern Region, responsible for sustained low frequency operation in the region since it has the propensity to overdraw from the regional grid.

The Commission came to the conclusion that there is enough evidence on record to support that relevant provisions of the IEGC have not been followed by the respondent or the Uttar Pradesh State Load Despatch Centre presently being operated by the respondent. During the hearing, it was also noted that UPPCL was not only overdrawing power but was also defaulting in making payments towards UI charges for overdrawal from the regional grid. This was an extraordinary situation, which required extraordinary remedy. Therefore, the Commission thought of invoking the powers available to us under the law to enforce discipline and if necessary, by levying penalty or fine. However, an affidavit, sworn on 24.7.2004 was filed on behalf of UPPCL wherein it had acknowledged its liability and obligation to meet its financial commitments arising out of accumulation of UI charges. It was also assured that it would be making every possible effort to liquidate the accumulated and unpaid UI charges. At

the hearing on 27.7.2004, it was informed that a sum of Rs.53 crore along with up to date interest for the delayed payment and the current dues for UI charges would be paid by 7.8.2004. The representatives of the respondent undertook that the balance of Rs.100 crore would be liquidated in four monthly instalments at the rate of Rs.25 crore per month payable by 15<sup>th</sup> day of each month. In addition, the representatives of the respondent undertook to pay the interest due as also the current dues on account of UI charges on monthly basis. As a special case, the Commission accepted the undertaking given. The Commission directed that in case the committed payments are delayed, NRLDC may regulate the power supply to the respondent after giving a 24-hour notice, without seeking any further clearance from the Commission.

### **13.0 Petitions relating to non-payment of UI charges**

**13.1** A petition (44/2004) was filed by Western Regional Load Despatch Centre (WRLDC) seeking directions to MPSEB for making payments of the total dues on account of UI charges, together with interest thereon with a further prayer that for the alleged deliberate failure of MPSEB to comply with the Commission's directions, suitable penalty be imposed on it. It was brought to the notice of the Commission that Ministry of Power in





its letter dated 11.5.2004 sought to clarify the issue regarding interchange of power between the States of Madhya Pradesh and Chhattisgarh, which is stated to have been issued under Section 75(2) of Madhya Pradesh Reorganisation Act, 2000. This clarification takes effect from 1.7.2002 and would necessitate recalculation of entitlement/liability of the MPSEB and CSEB relating to UI charges. On these considerations the Commission directed WREB to recalculate the entitlement/liability of the constituents of Western Region for UI charges for the period from 1.7.2002 onwards based on Ministry of Power clarification dated 11.5.2004. This task was to be completed by latest by 30.9.2004 and the accounts were to be settled by all concerned latest by 15.10.2004.

- 13.2 Another petition (29/2004) was filed by NRLDC for directions to the Power Development Department, Govt. of Jammu & Kashmir (PDD, J&K) to make payment of dues on account of Unscheduled Interchange (UI) charges and Reactive Energy Charges, together with interest. Another direction sought was that PDD, J&K should make payments within the stipulated period on 10 days of issue of UI accounts by the petitioner.

PDD, J&K admitted that it has drawn power from the regional grid in excess of its allocation and as a consequence it

has become liable to pay UI charges in accordance with the regulations framed by the Commission on the subject. It also explained that the basic reasons for overdrawal are on account of prevalent disturbed situation and cold winter conditions. On consideration of the facts and acting on faith and belief that the PDD, J&K shall honour the undertakings and assurances given on its behalf at the hearing, the Commission disposed of the petition with the following directions:

- a) PDD, J&K shall make every effort to contain its drawals from the regional grid to its allocated share. The respondent shall completely stop overdrawal from the grid when the frequency is below 49.0 Hz.
- b) The current dues starting from the week ending 30.1.2005 and onwards on account of UI charges and reactive energy charges shall be cleared by the respondent within 10 days in accordance with the existing regulations on the subject. Accordingly, no arrears shall be allowed to accumulate in future
- c) The recovery of arrears pertaining to the period prior to 30.1.2005 shall await the decision of the Central Government with whom the matter is presently pending. PDD, J&K should continue to



pursue with the Central Government to address the question of settlement of arrears in an expeditious and reasonable manner, as ultimately it is the responsibility of respondent to settle the dues.

The Commission also advised PDD, J&K to adopt certain measures to curtail overdrawals from the regional grid.

## **14.0 Petitions relating to inter-state trading in electricity and development of market**

### **14.1 Licence for inter-State trading in Electricity**

The Commission granted licence for inter-State trading to thirteen applicants during the year 2004-05 as per details given below:

<b>S.No.</b>	<b>Name of the licensee</b>	<b>Category of licence</b>
1	Lanco Electricity Utility Ltd.	A
2	Sumex Organic Pvt. Ltd.	B
3	Tata Power Trading Company Ltd.	F
4	PTC India Limited	F
5	DLF Limited	A
6	Adani Exports Ltd.	F
7	Reliance Energy Trading Ltd.	A
8	NTPC Vidyut Vyapar Nigam Ltd.	F
9	Chhattisgarh Electricity Company Ltd.	A
10	MMTC Limited	C
11	GMR Energy Limited	A
12	Jindal Steel & Power Limited	A
13	Karam Chand Thapar & Bros. Limited	A



Of the 13 licensees, only 4 licensees are undertaking trading in electricity at present. These are: (1) Tata Power Trading Company (P) Ltd; (2) PTC India Ltd; (3) Adani Exports Ltd; and (4) NTPC Vidyut Vyapar Nigam Ltd.

During the year 2004-05, two of the trading licensees have changed their names and two of the licensees have got approval by the Commission for change of category of licence. "Power Trading Corporation of India Limited" has been renamed as "PTC India Limited" w.e.f. 21<sup>st</sup> July, 2004 and "Reliance Energy Trading Private Limited" has been renamed as "Reliance Energy Trading Limited" with effect from 6<sup>th</sup> July, 2004. In the case of NTPC Vidyut Vyapar Nigam Ltd (NVVNL) the Commission allowed change of category from E to F for the reason that the licensee's volume of trading crossed 1000 MUs on 4.10.2004; and in the case of DLF Limited the Commission allowed change of category from C to A w.e.f. 1.4.2005 for the reason that the licensee could not start trading due to non-availability of corridors for transmitting electricity from source to user end.

### **15.0 Free Governor Mode of Operation**

The Grid Code envisages that all large thermal hydro generating units should automatically pick up or shed generation in response to load fluctuations so that the grid

frequency remain stable. This is possible if the speed governors fitted on the turbines of the generating units are free to respond to change in speed caused by load changes.

The RLDCs reported that the large thermal units as well as hydro units are not giving adequate governor response when the grid frequency is changing. The generators submitted before the Commission that they are facing technical problem in meeting with the requirement of FGMO. The Commission entrusted the task of studying the technical problem faced by the generators in the implementation of FGMO in their stations to the CEA. CEA has submitted following two reports:

- (A) "Report on the Issues of Operation of Hydro Generating Units in Free Governor Mode (FGMO)" in Oct 2004
- (B) "Report on the Issues of Free Governor Mode of Operation in Thermal Units" in Nov 2004

The CEA for the Hydro generating units has recommended that every power station should participate in FGMO to reduce frequency fluctuations in the grid and share the load by all the machines. The operation of hydro machines should be avoided in the critical zone as recommended by manufacturers or as determined from the experience of generators to safe guard machines against excessive pitting and vibration.



The CEA report for the thermal generating units is the result of a very detailed exercise by a Committee under the chairmanship of Member (Thermal), CEA, which included experiments/discussions at Dadri TPS, WRLDC, EREB, BHEL Simulator, BHEL Haridwar, Simhadri TPS and Nasik TPS. Specific recommendations have been made in this report, in consultation with BHEL, for implementation of FGMO on KWU and LMW/LMZ type turbines under the prevailing conditions in India.

For the 200/210/250/500 MW coal/lignite fired generating units with KWU turbines, the Committee has recommended adoption of a control logic in which "reference frequency" would be allowed to float and track the actual frequency. In the 37 units of more recent vintage with Pro-control /Max DNA type control systems, incorporation of this logic would be possible through software

modification. The other 81 units in this category have ISKAMATIC based controls, and they would require both hardware and software changes. In addition, revamping of boiler controls is recommended wherever they are presently not on 'auto'.

For the 200/210 MW units with LMZ turbines (of which there are 67 in the country), the Committee has recommended adoption of the scheme adopted by MSEB at Nasik (prior to November 2004). This scheme however has a major drawback: the generating units' frequency response is considerably restricted. The FGMO is virtually chopped off too soon. Recognizing this, the Committee has recommended further improvement through adoption of the same scheme as recommended for the KWU machines through R&M. The CEA reports are under the consideration of the Commission.



## OUTCOME OF REGULATORY PROCESS IN TERMS OF BENEFITS TO CONSUMERS AND DEVELOPMENT OF POWER SECTOR

### (A) Benefits to consumers

Reduction in bulk electricity tariff of central generating stations under the new Terms & Conditions for the period 2004-09 on account of the following:

#### (i) Reduction in return on equity (ROE)

Reduction in ROE from 16% to 14% for the tariff period 2004-09 shall directly reduce the cost of bulk power. The net reduction in the ROE for the existing capacity of NTPC stations as on 1.4.2004 would be of the order of Rs.349 crores. In case of NHPC stations, net reduction in the ROE as on 1.4.2004 would be of the order of Rs. 52 crore.

#### (ii) Adoption of Debt Equity ratio of 70:30 for the new investment

The capital investment of the existing projects of the central generating companies were being serviced on debt equity ratio of 50:50. The new Terms & Conditions provide that for new investment on or after 1.4.2004

shall be serviced in the ratio of 70:30 and in case the equity deployed is less than 30% then actual equity is to be considered for the purpose of tariff. Since the equity fetches a higher return than the loan, the reduction in the equity components will reduce the cost of production of the central generating stations.

#### (iii) Rationalisation of depreciation

Central Commission has rationalised recovery of depreciation in tariff by linking it to useful life of the assets in its tariff notification for 2001-04 and 2004-09. The accelerated rate of depreciation of 7.5% allowed to thermal generating station has been dispensed with. This was with a view to reduce front loading of tariff and reduce price of electricity to the SEBs/DISCOMs.

#### (iv) Dispensing with the development surcharge

The Terms & Conditions of the tariff for the period 2001-04 provided for development



surcharge of 5% for the Thermal and Hydro and 10% for Transmission Systems. In the new dispensation for the tariff period 2004-09, levy of development surcharge has been dispensed with and this will reduce the per unit cost of generation.

- (v) Higher benchmarks of performance

The norms of stations heat rate, secondary fuel oil consumption and auxiliary energy consumption for coal/lignite/gas based station have been revised with a view to achieving economy and improving efficiency of performance. The revision in these operational norms is as follows:

<b>Gross Station Heat Rate</b>		
Coal based TPS	For period 2001-04	For period 2004-09
500 MW sets	2500 Kcal/KWh	2450 Kcal/KWH
TPS-II based stations	2956 Kcal/KWh	2850 Kcal/KWh
Combined cycle stations	2000 Kcal/KWh and separate norms for small gas turbines less than 50 MW	1850/1950 Kcal/KWh depending upon class of the gas turbine.
<b>Secondary Fuel Oil Consumption</b>		
Coal/Lignite based stations	3.5 ml/kWh	2.0 ml/KWh for coal and 3.0 ml/KWh for lignite based stations.
<b>Auxiliary Energy Consumption</b>		
Coal	As per GOI notification dt.30.3.1992.	Reduced by 0.5% point for coal based stations.

The relaxed operation norms for existing stations of NTPC namely Kahalgaon STPS and gas based station namely Kawas, Gandhar,

Dadri, Anta and Auriya have also been reduced and are as follows:





Name of Generating Station	For the period 2001-04	For the period 2004-09
Kahalgaon STPS	2550	2500
Kawas GPS	2125	2075
Gandhar GPS	2100	2000
Anta GPS	2125	2075
Auraiya GPS	2125	2100
Dadri GPS	2125	2075

The variable charges are reduced corresponding to the revision in operating norms. In case of existing stations of NTPC, the net reduction in the variable charges for the NTPC stations based on prices of coal gas and secondary fuel oil as in March 2004 is expected to be around Rs.372.00 crore out of this Rs.233 crore is on account of reduction in specific fuel oil consumption norms alone. However, upward revision in fuel price can offset the reduction achieved through tightening of operating norms.

(vi) Norms for loss of coal in transit

In the tariff regulations for the period 2004-09, the following normative transit and handling losses as percentage of the quantity of coal dispatched by the coal supply company during the month have been specified:

Pit head generating stations	: 0.3%
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Non-Pit head generating stations	: 0.8%
----------------------------------	--------

The above norms would have significant impact in curbing loss/ pilferage of coal in transit.

(vii) Norms for O&M expenses

In the tariff regulations for the period 2004-09, the Commission has adopted normative approach towards O&M expenses to be allowed for thermal generating stations. This will encourage the generating companies to economize their O&M expenses and keep the cost of generation under control. The O&M norms for coal based stations are as follows:



### O & M Norns for Coal based stations (Rs. in lakh/MW)

Year	200/210/250 Mw sets	500 MW and above sets
2004-05	10.40	9.36
2005-06	10.82	9.73
2006-07	11.25	10.12
2007-08	11.70	10.52
2008-09	12.17	10.95

Similar norms have been set for lignite fired thermal stations as well as gas turbines / combined cycle generating stations.

#### (viii) Target availability

Norm of target availability for thermal generating station was adopted as 80% and for lignite based stations TPS-II the norm was 72% for the period 2001-04. The target availability norm for thermal generating station has been retained as 80% for the period 2004-09. The norm for lignite based stations has been raised to 75%. In case of hydro stations, capacity index norms for the run of the river type hydro stations have been raised to 90% from 85%. The raising of availability norms has positive impact on reliability of power supply.

### (B) Development of Power Sector

1. The following changes in the new terms & conditions of tariff for 2004-05 is providing an investor friendly

environment conducive to power development through light handed regulation incorporating system of in built rewards for efficiency of operation.

- (i) Rationalisation of advance against depreciation (AAD)

There was provision of Advance Against Depreciation to facilitate repayment of loan in terms & conditions of tariff for the period 2001-04. The new Terms & Conditions of tariff for the period 2004-09 provide for advance against depreciation linked to loan tenure of 10 years instead of 12 years earlier. This will ensure easy repayment option for the generators and comfort in arranging finance for the new projects.

- (ii) Doing away with concept of actual or lower whichever is lower.

- (a) Normative Interest on working Capital



The old Terms & Conditions for the period 2001-04 provide for computation of interest on working capital based on norms of fuel stock, fuel consumption etc. and were subject to actual. However, under the new Terms & Conditions for the period 2004-09, any reference to actual have been removed and interest on working capital has to be computed on the normative fuel stock and fuel consumption etc.

This would incentivise generators to optimise their resources and bring in more efficiency in operation so that savings, if any, could be retained by them.

(b) Normative O&M for thermal

The O&M cost norms were earlier based on 5 years actual. In the Terms & Conditions of tariff, the O&M cost for thermal have been specified in Rs./MW terms. This enables the generators to know their O&M expenses in advance and incentivise them to optimise their resources. Savings, if any, can be retained by the generators.

(c) Normative performance benchmarks

The Terms & Conditions of the tariff for 2001-04 provide for computation of energy charges based on norms but the same were subject to adjustment if the actual were lower than the normative operational parameters of stations heat rate, specific fuel oil consumption and auxiliary energy consumption. There was no incentive for the generators to bring about efficiency in operation or to conserve specific fuel oil.

The above dispensation of actual or norm whichever is lower have now been removed in the new Terms & Conditions of tariff for the period 2004-09. The normative operational parameters now incentivise generators to operate its plant efficiently and in optimum manner. Savings, if any, can be retained by the generator.

(iii) Methodology for Admitting Additional Capitalisation

Methodology for admitting additional capital expenditure on R&M and life extension of the generating stations specified. The existing coal & gas based stations of NTPC like Singrauli STPS, Ramagundam STPS, Korba STPS, Auraiya GPS etc. are near completion of their rated life and would be requiring extensive R&M and life extension



programme during the tariff period 2004-09.

(iv) All India Norm of O&M for Inter-state Transmission System

The O&M expenses for inter-state transmission system for the period 2001-04 were based on actual or linked to capital cost for new transmission system. The regulation on terms & condition of tariff for the period provide for a uniform O&M norms based on Rs.per Km line or Rs.per substation to be applied for working out regional O&M charges for the inter-state transmission system.

## 2. Open Access in inter-state transmission

The Electricity Act, 2003 mandates CERC to provide open access in inter-

State Transmission in non-discriminatory manner. After going through due consideration and hearings, the Commission issued its principle regulation on 30<sup>th</sup> January 2004 for providing open access in inter-State Transmission. The open access in inter-State Transmission is considered vital for creating competition in the power supply industry. The open access regulation allows generating companies, distribution companies, electricity traders and captive generators to seek access to inter-State Transmission System across the whole country for wheeling electricity. The regulation dated 30<sup>th</sup> January 2004 have now been amended vide amendments to the Regulation dated 21.2.2005 based on the feed back and difficulties faced by the parties seeking open access in inter-State Transmission during one year period. All India Open Access transactions during May, 2004 to March, 2005 are as follows:

### Open Access Transactions All India (May'04 - Mar'05)

	Inter-Region	Intra-Region	Total	Energy (MU) (Approved)
NRLDC	199	255	454	7870
WRLDC	63	204	267	7527
ERLDC	4	9	13	134
SRLDC	13	7	20	687
NERLDC	14	10	24	222
<b>Total</b>	<b>293</b>	<b>485</b>	<b>778</b>	<b>16440</b>



### 3. Inter-State trading in electricity

The Electricity Act, 2003 recognized trading as a separate licensed activity. The CERC has issued regulation regarding the grant of licence for inter-State trading. The trading regulations provide for procedure for grant of licence and specify the technical requirement, capital adequacy requirement and credit worthiness for being an electricity trader. The Commission has issued 13 trading licensees by the end of 2004-05.

The Commission has already issued the orders for open access in

transmission. Introduction of open access is expected to promote trading and will facilitate better utilisation of generation capacity. This will facilitate harnessing of the bottled up energy of captive power plants as well, if the sale rate of power is attractive, taking into account the wheeling charges, transmission losses, trading margin etc.

#### 3.1 Volume of electricity traded

A brief account of the electricity traded during the year 2004-05 is given below:

#### Electricity Trading During 2004-05

Sr. No.	Name of the Trading Licensee	Date of Licence issued	Category of Licence	Volume of Trade (MUs) during 2004-05	% to total volume	Period of Trading
1	Adani Exports Ltd	09.06.2004	F	802.57	6.77	April, 04 to Mar, 05
2	Chattisgarh Electricity Company Ltd	03.11.2004	A	Nil		
3	DLF Power Ltd	02.11.2004	C	Nil		
4	GMR Ltd	09.11.2004	A	Nil		
5	Jindal Steel & Power	02.11.2004	A	Nil		
6	Karam Chand Thapar & Bros Ltd	27.01.2005	A	Nil		
7	Lanco Electric Utility Ltd	23.07.2004	A	Nil		
8	MMTC Ltd	23.07.2004	C	Nil		
9	NTPC Vidyut Vyapar Nigam Ltd	23.07.2004	F	2616.25	22.08	April, 04 to Mar, 05

Table contd.....



10	PTC India Limited	30.06.2004	F	8358.26	70.55	April, 04 to Mar, 05
11	Reliance Energy Trading (P) Ltd	30.06.2004	A	Nil		
12	Sumex Organics (P) Ltd	12.07.2004	B	Nil		
13	Tata Power Trading Company (P) Ltd	09.06.2004	A	69.45	0.59	Dec, 04 to Mar, 05.
	Total volume traded			11846.54	100.00	
	Total Electricity Generation (BU)	587.00				
	Electricity Traded by Licensees (BU)	11.85				





## AGENDA FOR THE YEAR 2005-06

- ◆ Finalisation of Indian Electricity Grid Code (IEGC) and monitoring of its implementation.
- ◆ Disposal of the thermal, hydro and transmission tariff petitions pertaining to period 2004-09.
- ◆ Finalisation of the regulations relating to grant of license for inter-State transmission in accordance with provisions of the Electricity Act, 2003.
- ◆ Determination of fees and Charges for RLDC and ULDC charges for the period 2004-09.
- ◆ Finalisation and notification of regulations relating to curtailment of power supply due to non-payment of dues.
- ◆ Monitoring of implementation of ABT.
- ◆ Monitor the performance of the licensees.



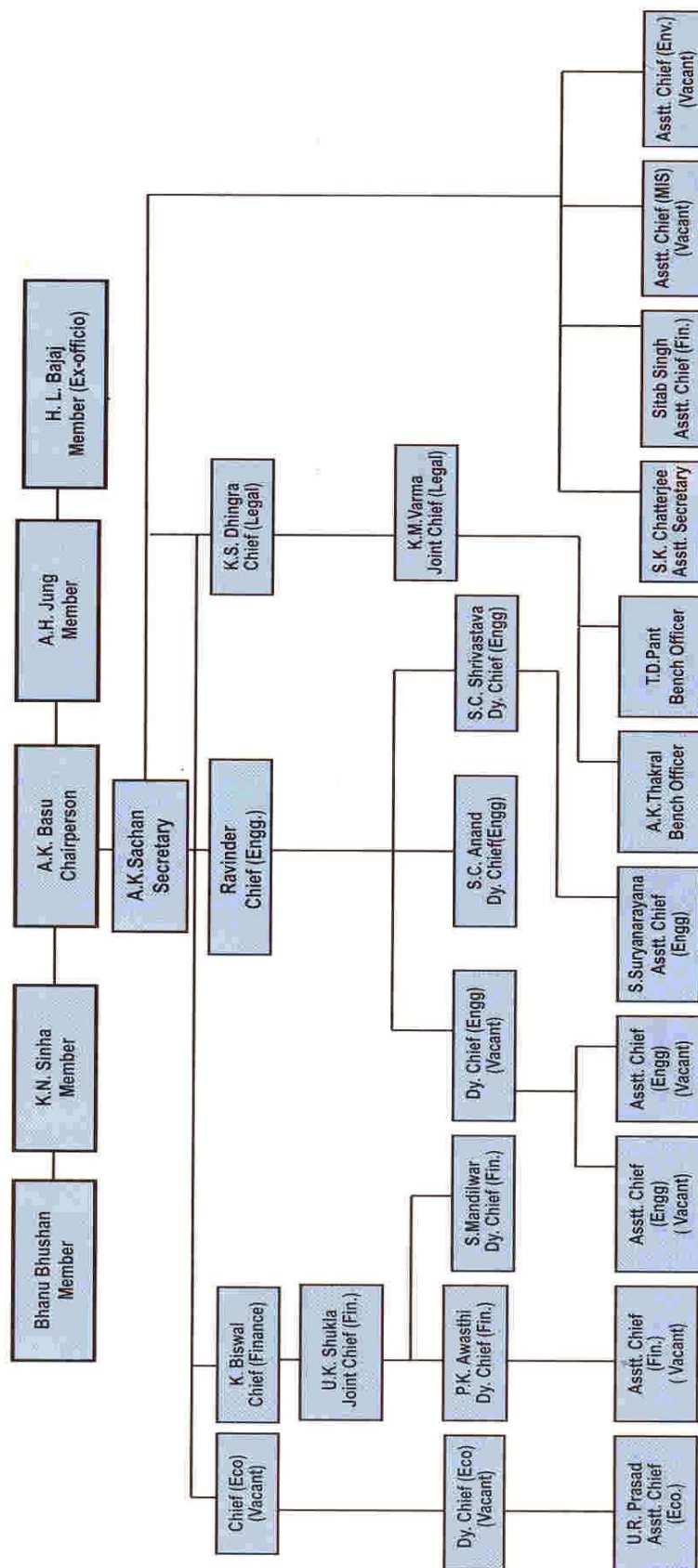
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# Annexures

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# **CENTRAL ELECTRICITY REGULATORY COMMISSION** **ORGANISATION CHART AS ON 31-MARCH, 2005**





## ANNEXURE-II

### E-MAIL ID AND PHONE NUMBERS OF THE CHAIRPERSON, MEMBERS AND STAFF OF THE COMMISSION

(As on 31.03.2005)

	Name	Designation	Phone No.	E-mail
	A.K. Basu	Chairperson	24360004	chairman@cercind.org
	K.N. Sinha	Member	24361280	kns60@rediffmail.com
	Bhanu Bhushan	Member	24361259	bhanubhushan@del13.vsnl.net.in
	A.H. Jung	Member	24361235	
	A.K. Sachan	Secretary	24361051	ak_sachan@yahoo.com
	K.S. Dhingra	Chief (Legal)	24364911	ks_dhingra@hotmail.com
	Ravinder	Chief (Engg.)	24364960	ravinderveeksha@hotmail.com
	K. Biswal	Chief (Finance)	24364898	k_biswal@hotmail.com
	U.K. Shukla	Joint Chief (Finance)	24364898	u_k_shukla@yahoo.com
	S.C. Anand	Joint Chief (Engg.)	24364826	anandsca@hotmail.com
	S.C. Shrivastava	Joint Chief (Engg)	24364895	scschandra@hotmail.com
	P.K. Awasthi	Deputy Chief (Finance)	24364895	awasthi_prabhat@yahoo.com

	S. Mandilwar	Deputy Chief (Finance)	24364895	sanjiva_mandilwar@yahoo.com
	Naresh Bhandari	Deputy Chief (Engg.)	24364826	nbjalaj@yahoo.com
	Ajay Talegaonkar	Deputy Chief (Engg.)	24364826	ajay_tal@hotmail.com
	A.D. Mirajkar	Deputy Chief (Engg.)	24364826	avinashdmirajkar@rediffmail.com
	S.K. Chatterjee	Assistant Secretary	24361145	sushanta_chat@yahoo.com
	Sitab Singh	Assistant Chief (Fin.)	24361145	sitab_s_b@yahoo.com
	U.R. Prasad	Assistant Chief (Eco)	24363338	uppaluri123@rediffmail.com
	Devendra Saluja	Assistant Chief (Engg.)	24364895	devendrasaluja@yahoo.co.in
	Smt. Navneeta Verma	Assistant Chief (Engg.)	24364895	verma_neeta@indiatimes.com
	Sukanta Gupta	Assistant Chief (Engg.)	4363338	gupta_sukhanta@yahoo.com
	A.K. Thakral	Bench Officer	24364911	
	T.D. Pant	Bench Officer	24364911	





### ANNEXURE-III

#### SEMINARS/ CONFERENCES/ EXCHANGE PROGRAMS ATTENDED BY THE COMMISSION/ STAFF OF THE COMMISSION OUTSIDE INDIA

S.No.	Name & Designation	Seminar/Conference/Program	Country Visited
01.	Shri A.K. Basu, Chairperson	Bilateral exchange visit from 01 <sup>st</sup> to 04 <sup>th</sup> September, 2004 on the invitation extended by the Permanent Secretary of Ministry of Energy, Government of Thailand.	Thailand
02.	Shri Ravinder, Chief (Engg.)	- DO -	- DO -
03.	Shri A.K. Basu, Chairperson	IX <sup>th</sup> Steering Committee Meeting of South Asian Federation of Infrastructure Regulators (SAFIR) on 2 <sup>nd</sup> October, 2004.	Islamabad (Pakistan)
04.	Shri U.K. Shukla, Jt. Chief (Fin.)	SAFIR Training Program on Infrastructure Regulation and Reforms from 3 <sup>rd</sup> October to 11 <sup>th</sup> October, 2004	Bhurbhan (Murree), Pakistan
05.	Shri A.K. Basu, Chairperson	Bilateral negotiations with FERC, U.S.A. from 13 <sup>th</sup> to 15 <sup>th</sup> December, 2004.	U.S.A.
06.	Shri A.K. Sachan, Secretary	- DO -	- DO -
07.	Shri A.K. Basu, Chairperson	India Unlimited Investor's Conference organized by ICICI Securities from 07 <sup>th</sup> to 09 <sup>th</sup> March, 2005.	Singapore
08.	Shri Ajay Talegaonkar, Dy. Chief (Engg.)	- DO -	- DO -



## ANNEXURE – IV

### PROGRAMS ATTENDED BY STAFF OF THE COMMISSION IN INDIA

S.No.	Name of Hosting Institution	Name of Program & Duration	Designation of Officers deputed
01.	IIM, Ahmedabad conducted at New Delhi	State-level Electricity Sector Reforms & Structural Change in India during 23 <sup>rd</sup> and 24 <sup>th</sup> September, 2004.	(1) Secretary (2) Chief (Engg.) (3) Asst. Secretary
02.	Engineering Staff College of India, Hyderabad conducted at Hyderabad	Training Programme on Technical Inputs for Non-Technical Executives in Power Sector from 08 <sup>th</sup> to 22 <sup>nd</sup> December, 2004.	(1) Asst. Secretary (2) Asst. Chief (Eco.)
03.	NCAER, New Delhi conducted at New Delhi	Stakeholder Fora, Implementation of Regulation and Competition in Import Water & Electricity Sectors during 09 <sup>th</sup> and 10 <sup>th</sup> February, 2005.	Secretary.



## ANNEXURE – V

### (A) STATUS OF PETITIONS FILED BEFORE THE CERC DURING THE YEAR 2004-05

Carried forward from last year (2003-2004)	No. of Petitions received during 2004-2005	Total	Disposed of	Pending as on 31.03.2005
125	194	319	128	191

#### Details of Petitions disposed of during 2004-2005

Sl. No.	Petition No.	Date of Filing	Filed by	Subject	Date of Disposal
01	23\1999	10.12.99	NTPC	Approval of tariff for Faridabad Gas Power Project.	20-Aug-04
02	1\2000	10.01.00	NTPC	Approval of tariff for Feroj Gandhi Thermal Power Project Stage-II.	18-Jun-04
03	3\2000	20.01.00	NHPC	Approval of generation tariff of Rangit Hydroelectric Project.	19-May-04
04	50\2000	06.07.00	PGCIL	Tariff for 230 KV Neyveli-Bahoor transmission line alongwith associated bay equipment at Neyveli end in Souther Region for the period from 1.7.2001 to 31.3.2004.	19-Nov-04
05	89\2000	14.09.00	PGCIL	Transmission tariff for Panki-Mainpuri Lilo and associated bays at Kanpur Sub Station in Northern Region.	11-May-04
06	34\2001	29.05.01	NTPC	Tariff for Ramagundam STPS - 1.4.2001 to 31.3.2004.	24-Aug-04
07	35\2001	01.06.01	NTPC	Tariff for Talchar STPS - 1.4.2001 to 31.3.2004.	24-Aug-04
08	36\2001	01.06.01	NTPC	Tariff for Farakka STPS - 1.4.2001 to 31.3.2004.	19-Jul-04
09	40\2001	06.06.01	NTPC	Tariff for NCTP Dadri - 1.4.2001 to 31.3.2004.	20-Jul-04
10	45\2001	08.06.01	NTPC	Tariff for Anta GPS-1.4.2001 to 31.3.2004.	30-Apr-04
11	60\2001	21.08.01	NHPC	Tariff of Chamera HE Project. 1.4.2001 to 31.3.2004.	23-Feb-05



12	61\2001	22.08.01	NHPC	Tariff of Uri HE Project. 1.4.2001 to 31.4.2004.	10-Mar.05
13	62\2001	22.08.01	NHPC	Tariff of Tanakpur HE Project.1.4.2001 to 31.3.2004.	07-Feb-05
14	64\2001	22.08.01	NHPC	Tariff of Salal Project. 1.4.2001 to 31.3.2004.	29-Oct-04
15	2\2002	17.01.02	NTPC	Tariff for 1st Unit (500 MW) of Simhadri TPP	19-May-04
16	10\2002	28.01.02	PGCIL	Transmission Tariff for 220 KV Jalandhar-Hamirpur D/C transmission line in Northern Region for the period from 1.9.2001 to 31.3.2004.	21-Feb-05
17	43\2002	25.02.02	PGCIL	Tariff for Kishenpur-Moga Transmission System in Northern Region for the period from 1.4.01 to 31.3.04.	18-May-04
18	50\2002	25.02.02	PGCIL	Tariff for transmission system associated with RAPP-B Project in Northern Region from 1.4.2001 to 31.3.2004.	18-May-04
19	55\2002	04.03.02	PGCIL	Tariff for Biharshariff-Sasaram-Sarnath Transmission System in Northern Region and Eastern Region for the period from 1.7.2001 to 31.3.2004.	03-Mar-05
20	57\2002	06.03.02	PGCIL	Tariff for LILO of one circuit of existing Neyveli Trichy 400 KV D/C line at Neyveli TS-I expansion in Southern Region for the period from 1.2.2002 to 31.3.2004.	21-Feb-05
21	68\2002	26.03.02	PGCIL	Tariff for transmission system Unchahar Stage-II Power Project in Northern Region for the period from 1.4.2001 to 31.3.2004.	27-May-04
22	69\2002	26.03.02	PGCIL	Tariff for Chandrapur HVDC back to back project (2x500 MW) and Ramagundam Hyderabad	19-Jul-04
23	71\2002	27.03.02	PGCIL	Tariff for Malda-Bongaigoan Transmission Line in Eastern Region for the period from 1.4.2001 to 31.3.04.	13-Apr-04
24	73\2002	28.03.02	PGCIL	Tariff for transmission system associated with Nathpa-Jhakri HE Project in Northern Region for the period from 1.4.2001 to 31.3.2004.	30-Aug-04
25	74\2002	28.03.02	PGCIL	Tariff for Gandhar Transmission System in Western Region for 1.4.2001 to 31.3.2004.	30-Apr-04
26	81\2002	13.05.02	NTPC	Tariff for Faridabad Gas Power Project for the period from 1.4.2001 to 31.3.2004.	20-Aug-04



27	94\2002	28.06.02	NTPC	Tariff for Gandhar GPS for 1.4.2000 to 31.3.2001.	13-Apr-04
28	96\2002	13.09.02	NTPC	Tariff for Farakka STPS from 1.4.2000 to 31.3.2001.	23-Apr-04
29	99\2002	12.07.02	NTPC	Tariff for Kawas GPS from 1.4.98 to 31.3.2001.	18-May-04
30	103\2002	13.09.02	NTPC	Review of Order dated 25.6.02 in Petition No.72/2000. Talchar STPS.	18-May-04
31	105\2002	21.10.02	NLC	Fixation of tariff for NLC TPS-I expansion.	07-Apr-05
32	109\2002	19.09.02	PGCIL	Tariff for Agra (Powergird)-Agra (UPPCL) 400 KV D/C inter-connection in Northern Region from 1.7.2003 to 31.3.2004.	22-Apr-04
33	111\2002	24.09.02	PGCIL	Tariff for HVDC back-to-back Station at Sasaram with associated AC switchyard at Sasaram-Allahabad and Auxiliary System from 1.12.2002 to 31.3.2004.	24-Mar-05
34	112\2002	11.09.02	PGCIL	Tariff for strengthening of Farakka-Malda Transmission Line including transformer at Malda from 1.5.2002 to 31.3.2004.	10-Mar.-05
35	114\2002	23.10.02	PGCIL	Final recovery of extra rupee liability due to FERV for the year 2000-2001 in NR, WR ER and SR.	19-Aug-04
36	116\2002	28.06.02	PGCIL	Tariff for 400 KV Thyristor controlled series compensation project (FACTS Device) on Kanpur Ballabgarh 400 KV S\C line at Ballabgarh in Northern Region for the period from 1.7.2002 to 31.3.2004.	23-Mar-05
37	118\2002	13.11.02	PGCIL	Tariff for 220 KV transmission system under improvement scheme in UP in Northern Region for the period from 1.1.2003 to 31.3.2004.	23-Jun-04
38	120\2002	06.11.02	PGCIL	Transmission Tariff for 400 KV D/C Kolhapur Mapusa transmission line and associated bays for the period 1.1.2003 to 31.3.2004 (for CKT-I) and 1.12.2002 to 31.3.2004 (for CKT-II) in Western Region.	23-Mar-05
39	123\2002	21.01.02	PGCIL	Tariff for 400 KV D/C Vijayawada-Nelore line, 400KV D\C Nellore-Sriperumpudur line, New 400 KV switching station at Nellore Extension of Vijayawada and Sriperumpudur with associated bays under system strengthening scheme in SR from 1.3.2003 to 31.3.2004.	16-Mar-05



40	128\2002	07.11.02	NTPC	Tariff of NCTPS Dadri for the period from 1.4.1998 to 31.3.2001.	18-May-04
41	134\2002	19.12.02	PGCIL	Transmission tariff for 400/200 KV Bhiwadi S/S alongwith LILO of Ballabgarh-Jaipur, 400 KV S/C line and ICT-I and ICT-II at Bhiwadi in Northern Region for the period from 1.3.2003 to 31.3.2004.	10-Mar-05
42	139\2002	18.11.02	PGCIL	Tariff of 315 MVA Transformer at Jeypore Eastern Region for the period from 1.10.2002 to 31.3.2004.	09-Mar-05
43	22\2003	01.05.03	PGCIL	Transmission tariff for Mau-Balia 132 KV S/C line in Northern Region for the period from 1.5.2003 to 31.3.2004.	16-Apr-04
44	58/2003	18.09.03	NLC	Premature repayment of foreign currency loan.	18-May-04
45	64/2003	26.09.03	MPSEB	Review of Commission's Order dated 17.7.03 in Petition No.66/2002 for Vindhyachal Stage-I transmission system.	22-Sep-04
46	76/2003	20.10.03	UPPCL	Amendment of Commission's order dated 23.7.2003 in Petition No.39/2001 - escalation factor for O&M expenses in tariff for the period 1.4.2001 to 31.3.2004 in respect of Singrauli STPS.	28-Feb-05
47	82/2003	31.10.03	GRIDCO	Review of Commission's Order dated 3.9.2003 in Petition No.15/2003.	19-Apr-04
48	83/2003	31.10.03	PGCIL	Approval of abnormal operation and maintenance expenses on account of additional security for the year 2001-2002 and 2002-2003 in Eastern Region.	27-May-04
49	84/2003	03.11.03	PGCIL	Approval under regulation-103(1) of Regulation 1999 for tariff period 2001-04 for the assets in Northern and Southern Region.	21-Sep-04
50	90/2003	03.12.03	NLC	Revised UI accounting procedure followed by the SREB secretariat in respect of Neyveli Thermal Power Station II from 3.11.2003 to 9.11.2003.	29-May-04
51	91/2003	04.12.03	KPTCL	Revision of transmission charges for wheeling contractual power drawn on Talchar-Kolar HVDC Line.	25-Oct-04
52	93/2003	05.12.03	KPTL	Application for grant of transmission license to Bina-Dehgam Transmission Company Ltd for implementation of 400 KV Bina-Nagda-Dehgam Lines on boot basis for Powergrid Corpn. of India Ltd.	27-Apr-04





53	95/2003	03.12.03	ISN	Approval of tariff for 2000 MW Thermal Power Station to be located at pithead in Sonabhadra District of the State of Uttar Pradesh.	30-Jul-04
54	97/2003	19.12.03	NTPC	Seeking clarification of CERC order dated 25.9.2003 in Petition No.62/2000. <b>(Treated as Misc. Application No.1/2004).</b>	07-Jun-04
55	100/2003	24.12.03	PGCIL	Review of Commission's order dated 22.10.2003 in Petition No.23/2002 - Tariff for Jeypore-Talchar transmission system in Eastern region for the period from 1.4.2001 to 31.3.2004.	11-May-04
56	102/2003	26.12.03	PGCIL	Approval of abnormal operation and maintenance expenses on account of additional security for the year 2001-2002 and 2002-2003 for 400/220 KV Wagoora Sub Stn under Uri transmission system in Northern Region.	28-Apr-04
57	103/2003	30.12.03	NTPC	Review of Commission's Order dated 24.10.2003 in petition No.41/2001 - Approval of tariff for the Feroz Gandhi Unchahar TPS, State-I for the period from 1.4.2001 to 31.3.2004.	01-Jul-04
58	104/2003	30.12.03	NTPC	Review of Commission Order dated 24.10.2003 in Petition No.44/2001 - Approval of tariff for Dadri Gas Power Station for the period from 1.4.2001 to 31.3.2004.	01-Jul-04
59	1/2004	02.01.04	UPPCL	Review of Commission's Order dated 24.10.2003 in petition No.41/2001- Approval of tariff for the Feroz Gandhi Unchahar TPS, State-I for the period from 1.4.2001 to 31.3.2004.	01-Jul-04
60	2/2004	05.01.04	PGCIL	Review of Commission's Order dated 23.10.2003 in Petition No.26/2002 - transmission tariff for Ramagundum 400KV transmission line in Southern Region for the period from 1.4.2001 to 31.3.2004.	13-Apr-04
61	5/2004	14.01.04	LEUL	Application for trading licence filed by Lanco Electric Utility Limited.	23-Jul-04
62	7/2004	20.01.04	SOPL	Application for grant of licence for inter-state trading in power	12-Jul-04



63	10/2004	27.01.04	NTPC	Review of Commission's Order dated 5.11.2003 in Petition No.62/2000 - seeking clarification/rectification of error. (Treated as Misc. Application No.4/2004)	07-Jun-04
64	11/2004	23.01.04	Tata Power	Application for Grant of Inter-State Trading License.	27-May-04
65	13/2004	11.02.04	PGCIL	Implementation of the order dated 1.1.2002 in Petition No.40/2000 and Review Petition No.110/2000 for approval of transmission tariff of assets in North Eastern Region covered in Petition No.40/2000 for the period from 1.2.2001 to 31.3.2004 for the pre ABT period.	06-Sep-04
66	14/2004	11.02.04	PGCIL	Transmission tariff for Hiriyur sub station LILO of Davangere-Hoody at Hiriyur and additional bays at Kolar and Hosur for the period upto 31.3.2004.	17-May-04
67	15/2004	12.02.04	I spat Energy	Grant of Licence for trading in Power	25-Jan-05
68	16/2004	19.02.04	HEG Ltd	Inter-state transmission of electricity for a Captive Power Plant from Durg in the state of Chattisgarh to Mandideep.	29-Apr-04
69	17/2004	19.02.04	NHPC	Renovation and Modernisation programme of Loktak HE Project.	18-May-04
70	18/2004	19.02.04	PGCIL	Transmission Tariff for series compensation on Panki-Muradnagar 400 KV SC line of UPPCL in Northern Region from 1.2.2004 to 31.3.2004.	15-Jul-04
71	19/2004	20.02.04	NHDC	Provisional approval of generation tariff of Indira Sagar Project.	06-Dec-04
72	20/2004	23.02.04	PTC	Grant of licence for inter state trading in electricity to PTC.	30-Jun-04
73	21/2004	24.02.04	DLF	Grant of electricity trading licence	02-Nov-04
74	22/2004	24.02.04	Adani Export	Grant of Inter-state trading license.	07-Jun-04
75	23/2004	25.02.04	PGCIL	Abnormal Operational and Maintenance expenses (on account of additional security) for the years 2001-2002 and 2002-2003 in North Eastern Region.	22-Sep-04
76	24/2004	27.02.04	RETPL	Application for grant of inter state trading licence.	30-Jun-04
77	25/2004	05.03.04	PGCIL	Transmission Tariff for Khammamnagar-Junagar 400 KV/SC line alongwith extension of Khammamnagar Junagar for the period from 1.3.2004 to 31.3.2004.	12-Jul-04



78	26/2004	09.03.04	NVVNL	Grant of inter-state trading licence.	13-Jul-04
79	28/2004	11.03.04	CECL	Grant of inter-state trading licence.	03-Nov-04
80	29/2004	19.03.04	NRLDC	Non-payment of Unscheduled Interchange (UI) charges and Reactive Energy (RE) charges by Power Development Department, Jammu and Kashmir.	22-Feb-05
81	32/2004	31.03.04	ATIL	Grant of inter-state trading licence.	23-Jul-04
82	33/2004	31.03.04	NLC	Fixation of tariff for NLC TPS-I (600 MW) for the period from 1.4.2001 to 31.3.2004	31-Aug-04
83	34/2004	10.03.04	MPSEB	Review/amendment/rectification in the order dtd 2.12.2003 in Petition No.78/2001 (Incentive/disincentive of Kawas and Gandhar GPS) (Treated as IA No.21/2004 in Pet. No.78/2001)	30-Apr-04
84	38/2004	20.04.04	NRLDC	Maintaining the regional grid frequency above 49.0 Hz by curbing overdrawals in line with section 6.2.(1) and 7.4.4. Respectively of the IEGC.	09-Aug-04
85	39/2004	05.04.04	PTC	Review of CERC (Open Access in inter-state transmission) Regulations, 2004 dated 30.1.2004 in Pet. No.48/2003.	28-May-04
86	41/2004	05.05.04	Power-links & others	Petition under section 17 of the Electricity Act, 2003.	20-Oct-04
87	42/2004	05.05.04	NTPC	Review of CERC order dated 4.3.2004 in petition No.46/2001 (Tariff for Auraiya GPS for the year 2001 to 2004)	31-Aug-04
88	43/2004	07.05.04	NTPC	Review of CERC order dated 5.3.2004 in Petition o.22/99 (Tariff for Kayamkulam combined)	03-Aug-04
89	44/2004	13.05.04	WRLDC	Non payment of UI Charges by MPSEB	31-Aug-04
90	45/2004	14.05.04	MPC	Desputes with regard to implementation of the CERC (Open Access in inter-state transmission) Regulations, 2004 dated 30.1.2004 and procedures framed thereunder.	07-Jun-04
91	46/2004	17.05.04	GMR	Grant of inter-state trading licence.	09-Nov-04
92	47/2004	20.05.04	NLC	Review of CERC (Terms and conditions of tariff) Regulation, 2004.	08-Jul-04
93	49/2004	03.06.04	MPSEB	Determination of terms and conditions of tariff for the period comencing from 1.4.2004.	08-Jul-04



94	50/2004	03.06.04	NHPC	Determination of terms and conditions of tariff from 1.4.2004.	08-Jul-04
95	51/2004	03.06.04	Power-links	Request for certain clarification on the CERC (Terms and Conditions of tariff) Regulation, 2004.	01-Jul-04
96	52/2004	03.06.04	TNEB	Terms and Condition of Tariff for the year 2004-2009.	08-Jul-04
97	53/2004	03.06.04	NTPC	Review of CERC order dated 29.3.2004 - Determination of Terms & Conditions of Tariff applicable from the period from 1.4.2004.	08-Jul-04
98	54/2004	10.06.04	PGCIL	Review of CERC order dated 29.3.2004 - Determination of Terms & Conditions of Tariff applicable from the period from 1.4.2004.	08-Jul-04
99	55/2004	10.06.04	SUO-MOTU	Notice for redressal of complaint under Regulation 35 of (Open Access in inter-state transmission) Regulations.	30-Nov-04
100	58/2004	16.06.04	PGCIL	Review of CERC Order dated 27.4.2004 in Pet. No.93/2003 - Grant of transmission licence to Bina-Dehgam Transmission Co. Ltd.	26-Jul-04
101	59/2004	16.06.04	RRVPL	Inter-state transmission of energy by M/s PGCIL (CTU).	19-Aug-04
102	61/2004	18.06.04	Power-links	Review of CERC order dated 29.3.2004 - Determination of Terms & Conditions of Tariff applicable from the period from 1.4.2004.	08-Jul-04
103	62/2004	18.06.04	Bhushan Ltd	Fixation of transmission charged and other terms and conditions for the proposed wheeling of power from the CPP of M/s Bhushan Limited.	13-Aug-04
104	63/2004	17.06.04	NTPC	Tariff for 500 MW of Ramagundam STPS (Stage-III)	31-Aug-04
105	65/2004	02.07.04	PGCIL	Review under regulations 103, 111, 114 and 115 of CERC (Conduct of Business Regulation 1999 of CERC (Terms & Conditions of Tariff)	23-Sep-04
106	66/2004	12.07.04	Jindal	Grant of licence for inter state trading in electricity.	02-Nov-04
107	71/2004	21.07.04	NEEPCO	Grant of licence for inter state trading in electricity.	02-Feb-05



108	75/2004	23.07.04	NTPC	Review of CERC order dated 19.5.2004 in Petition No.2/2002 - Tariff for Simadhari TPS for the period from 1.9.2002 to 31.3.2004.	06-Sep-04
109	76/2004	27.07.04	MPSEB	Review of CERC order dated 18.5.2004 in petition No.99/2002 for approval of generation tariff for Kawas Gas Power Station for the period from 1.4.1998 to 31.3.2001.	28-Mar-05
110	80/2004	04.08.04	PGCIL	Approval of abnormal operation and maintenance expenses on account of deployment of additional security for the year 2003-2004 for 400/220 kV Wagoora Sub Station under Uri Transmission System of Northern Region.	22-Feb-05
111	81/2004	06.08.04	TISCO	Clarification for inter-state transmission for electricity from the captive generating plant of the TATA Iron & Steel Company.	21-Sep-04
112	83/2004	11.08.04	PGCIL	Approval for abnormal operation and maintenance expenses on account of deployment of additional security for the year 2003-2004 for Salakati substation under Chukha transmission system and Bongaigaon substation and Bongaigaon- Malda transmission line (an inter-regional assets between ER and NER)	22-Feb-05
113	88/2004	24.08.04	GEB	Clarification regarding levy/refund of development surcharge by NTPC and PGCIL for the period 1.4.2001 to 31.3.2004	09-Nov-04
114	89/2004	03.09.04	NLC	Levy of transmission charges and applying Regional Transmission Losses to NLC Mines.	24-Feb-05
115	90/2004	06.09.04	UPPCL	Review of the order dated 24.10.2003 in petition No.44/2001-Approval of tariff for Dadri GPS for the period from 1.4.2001 to 31.3.04	28-Feb-05
116	92/2004	19.09.04	AP TRANSCO	Review of CERC order dated 26.3.04 in petition No.67/2003(suo-motu) - Determination of terms & conditions of tariff applicable from 1.4.2004.	05-Nov-04
117	94/2004	06.10.04	GEL	Seeking compliance of regulations 7 (h) of the CERC(Procedure, terms and conditions for grant of Trading Licence & other related matters) Regulations, 2004	29-Dec-04



118	95/2004	08.10.04	PGCIL	Issue of direction to Bihar State Electricity Board for sharing the transmission charges for inter-regional assets.	19-Jan-05
119	141/2004	19.10.04	NTPC	Determination of impact of additional capital expenditure incurred during 2001-02, 2002-03 and 2003-04 for Kayamkulam Combined Cycle Power Project (359.58 MW).	04-Apr-05
120	145/2004	24.09.04	PGCIL	seeking time extension for filing of tariff petition for tariff block 2004.09.	16-Nov-04
121	152/2004	27.10.04	KCTBL	Application for grant of inter-state trading licence in electricity.	27-Jan-05
122	168/2004		Suo-motu	Tariff of sale of electricity by Damodar Valley Corporation and the inter-state Transmission of electricity.	29-Mar.-05
123	177/2004	19.11.04	Adani Expt.	Request for transparency and level playing field in Power Trading.	31-Dec-04
124	194/2004	17.12.04	NLC	Non-compliance of the order dated 31.8.2004 by TNEB in regard to fixation of tariff for Thermal Power Station -I (600 MW) for the period from 1.4.2002 to 31.3.2004.	01-Feb-05
125	196/2004	23.12.04	Suo-motu	Revision of O & M Expenses for the year 2001-2004.	28-Feb-05
126	198/2004	24.12.04	GEL	Grant of open access for inter-state transmission of electricity.	06-Jan-05
127	1/2005	04.01.05	NHDC	Review of Order dated 6.12.2004 in petition No.19/2004-Approval of generation tariff of Indira Sagar Project.	27-Jan-05
128	10/2005	28.01.05	NTPC	Tariff for infirm power supply to the Respondents prior to its date of commercial operation.	10-Mar.-05

**(B) INTERLOCUTORY APPLICATION BEFORE CERC**

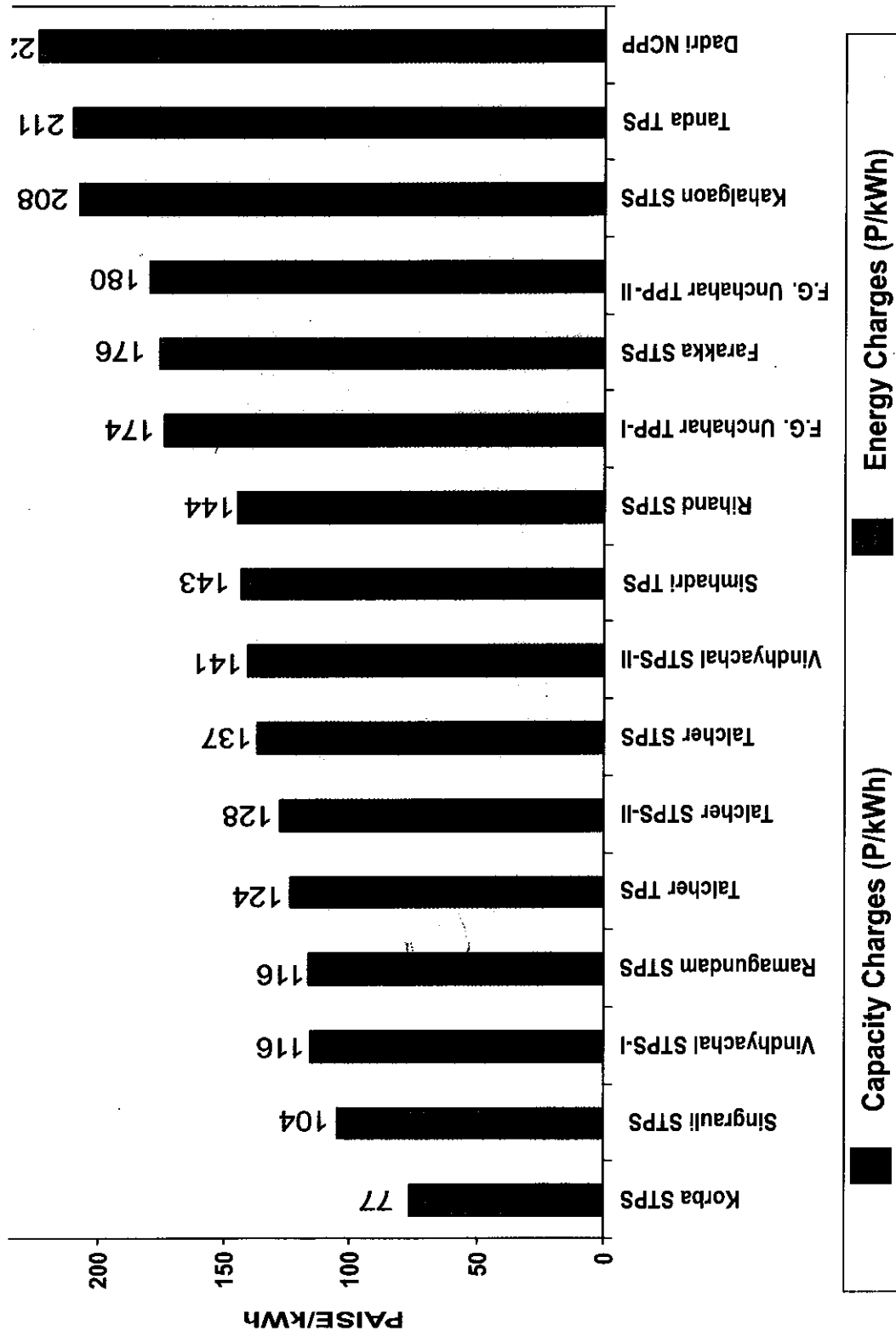
No. of IA carried forward from last year (2003-2004)	No. of IA received during the period 2004-2005	Total	Disposed of	No. of IA pending on 31.03.2005
5	36	41	39	2





## ANNEXURE-VI

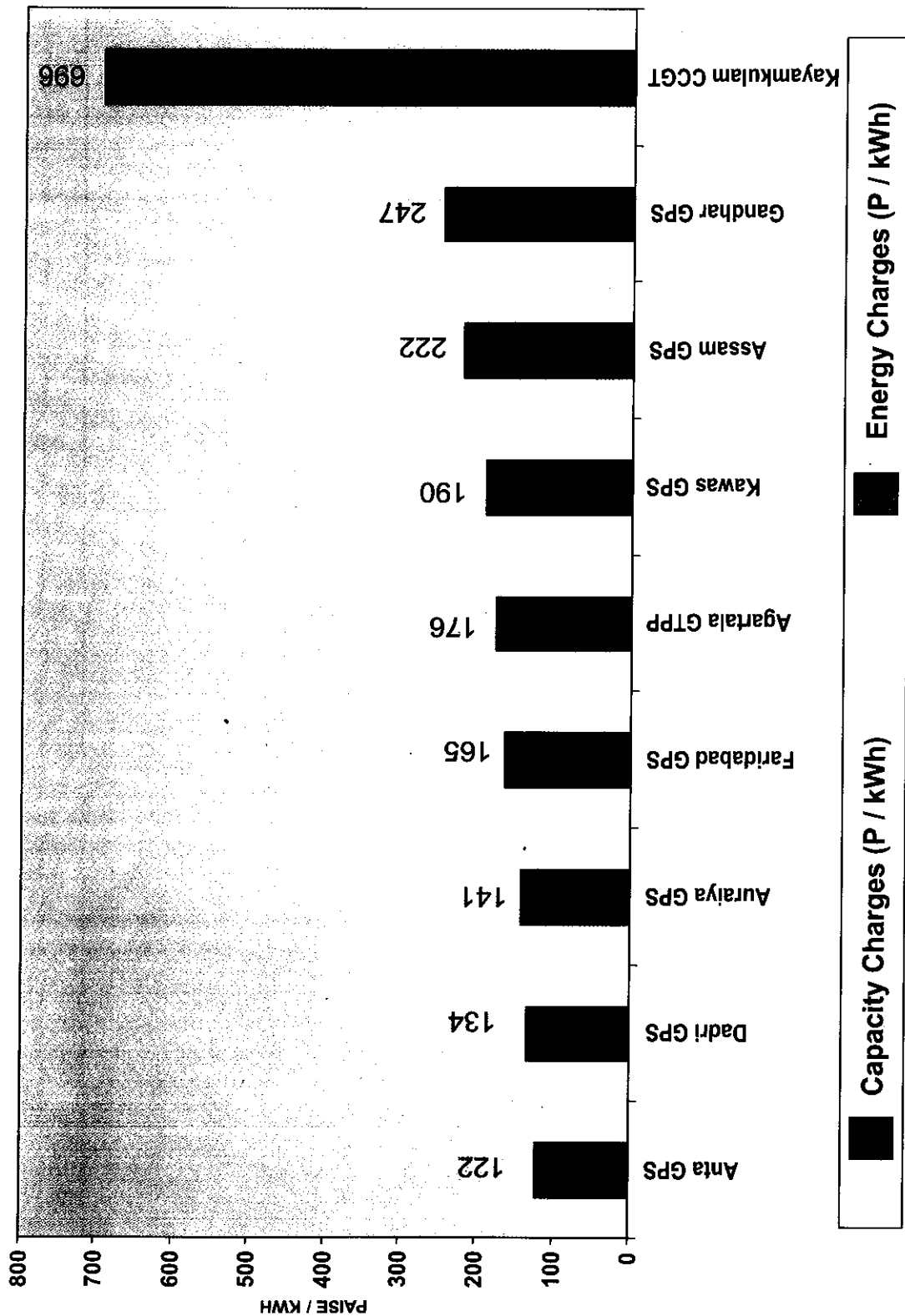
### PRICE OF BULK POWER : COAL BASED POWER STATIONS OF NTPC, 2004-05





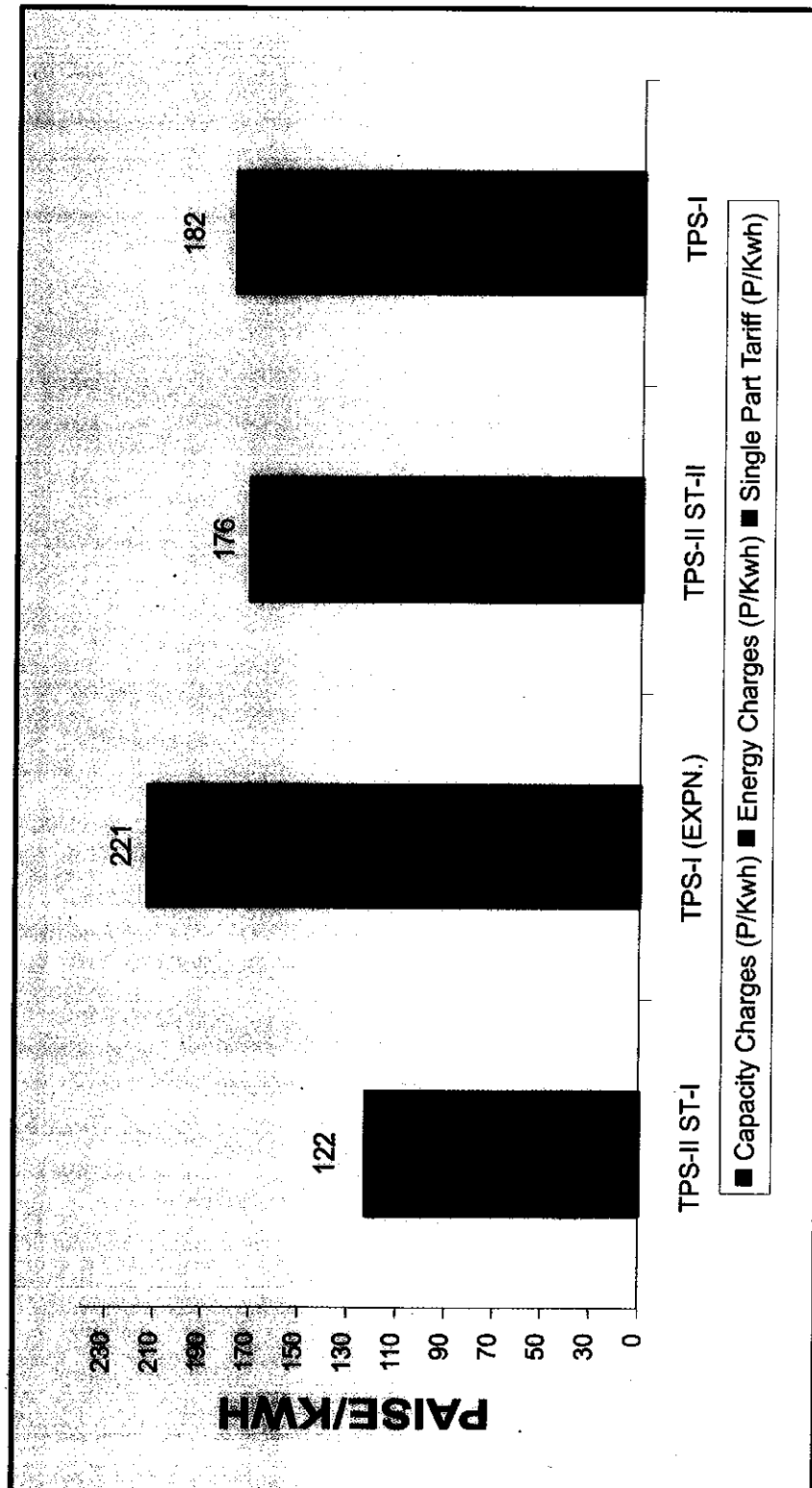
## ANNEXURE-VII

### PRICE OF BULK POWER : GAS BASED POWER STATIONS OF NTPC/NEEPCO, 2004-05





**PRICE OF BULK POWER :  
NEYVELI LIGNITE CORPORATION FOR 2004-05**



**ANNEXURE-VIII**



## ANNEXURE-IX

### FINAL TARIFF AWARDED FOR THE TARIFF PERIOD 2001-04 FOR THERMAL POWER STATIONS

- ◆ *Firoz Gandhi Unchahar Thermal Power Station Stage-II (2 x 210 MW) Order dated 18.6.2004 in Petition No. 1/2000*

#### Annual Fixed Charges (AFC) (Rs. Lakhs)

	AFC Components	2001 -02	2002-03	2003-04
1.	Interest on Loan	4973	4696	3313
2.	Interest on Working Capital	1516	1509	1552
3.	Depreciation	4572	4572	4572
4.	Advance Against Depreciation	0	0	2631
5.	Return on Equity	5927	5927	5927
6.	O & M Expenses	3227	3421	3626
	<b>TOTAL AFC</b>	<b>20216</b>	<b>20125</b>	<b>22121</b>

- ◆ *Talcher Super Thermal Power Station Stage-I (2 x 500 MW) Order dated 24.8.2004 in Petition No. 35/2001*

#### Annual Fixed Charges (Rs. Lakhs)

	AFC Components	2001-2002	2002-2003	2003-2004
1	Interest on Loan	10620	8998	7552
2	Interest on Working Capital	2225	2296	2427
3	Depreciation	9118	9118	9118
4	Advance against Depreciation	1346	0	1346
5	Return on Equity	20092	20092	20092
6	O & M Expenses	8536	9048	9591
	<b>TOTAL AFC</b>	<b>51937</b>	<b>49553</b>	<b>50127</b>



- ◆ Farakka Super Thermal Power Station ( 3x600 MW + 2x500 MW) (Order dated 19.7.2004 in Petition No. 36/2001)

Annual Fixed Charges (Rs. Lakhs)

	AFC Components	2001-2002	2002-2003	2003-2004
1	Interest on Loan	2036	1277	650
2	Interest on Working Capital	4592	4566	4580
3	Depreciation	10970	10970	10970
4	Advance against Depreciation	1602	0	46
5	Return on Equity	24139	24139	24139
6	O&M Expenses	15790	16737	17742
	<b>TOTAL AFC</b>	<b>59129</b>	<b>57689</b>	<b>58126</b>

- ◆ NCTPS, Dadri (4 x 210MW) (Order dated 20.7.2004 in Petition No. 40/2001)

Annual Fixed Charges (Rs. Lakhs)

	AFC Components	2001-2002	2002-2003	2003-2004
1	Interest on Loan	5012	3805	2620
2	Interest on Working Capital	3940	3947	3964
3	Depreciation	6111	6111	6111
4	Advance against Depreciation	730	730	730
5	Return on Equity	13134	13134	13134
6	O & M Expenses	9104	9650	10229
	<b>TOTAL AFC</b>	<b>38032</b>	<b>37378</b>	<b>36789</b>

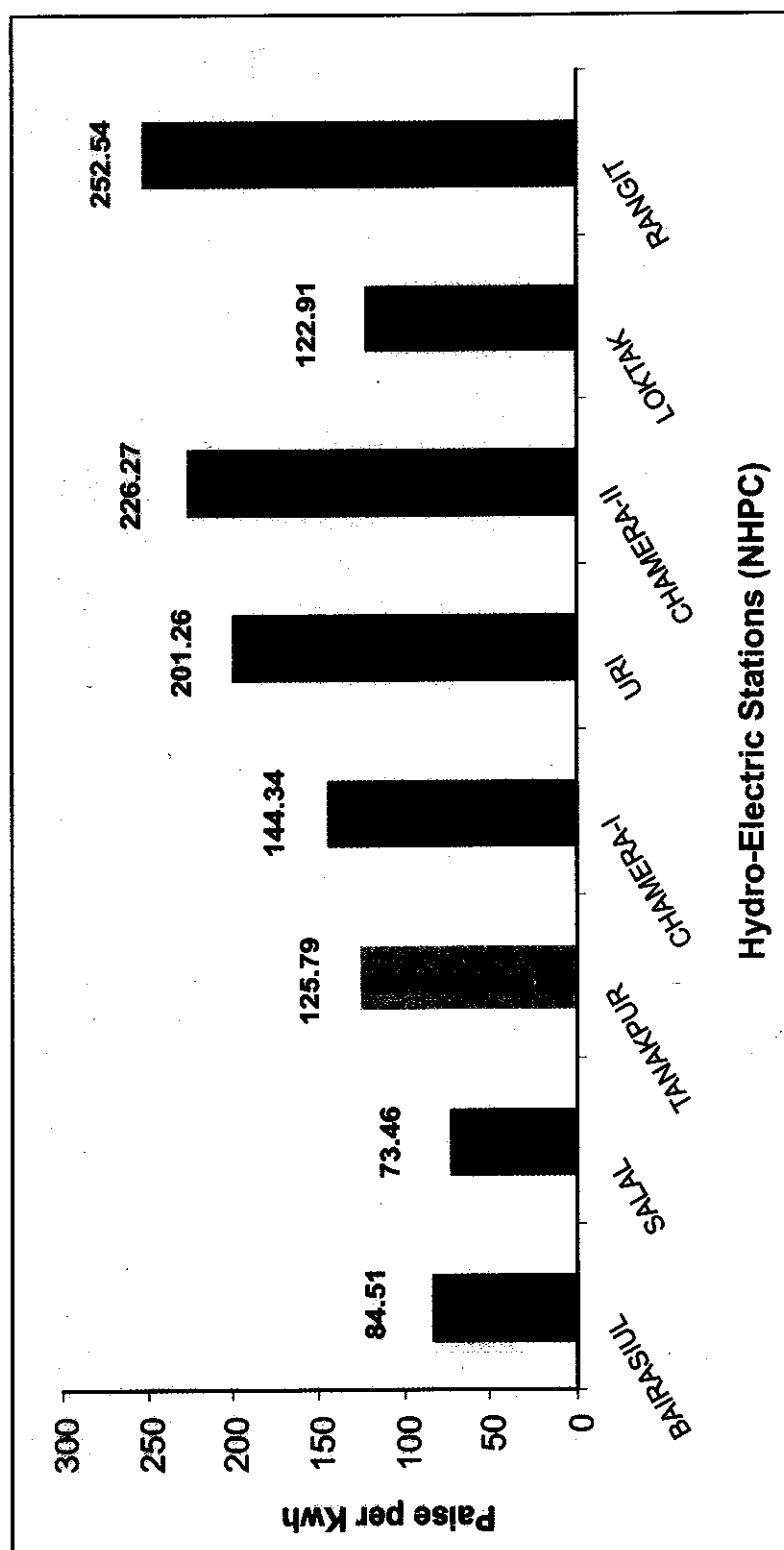
- ◆ Anta Gas Power Station (419.33 MW) (Order dated 30.4.2004 in Petition No. 45/2001)

Annual Fixed Charges (Rs. Lakhs)

	AFC Components	2001-2002	2002-2003	2003-2004
1	Interest on Loan	599	326	0
2	Interest on Working Capital	1038	1045	1054
3	Depreciation	2090	2090	1054
4	Advance against Depreciation	0	0	0
5	Return on Equity	3613	3613	3613
6	O & M Expenses	2363	2505	2655
	<b>TOTAL AFC</b>	<b>9703</b>	<b>9579</b>	<b>7949</b>

## ANNEXURE-X

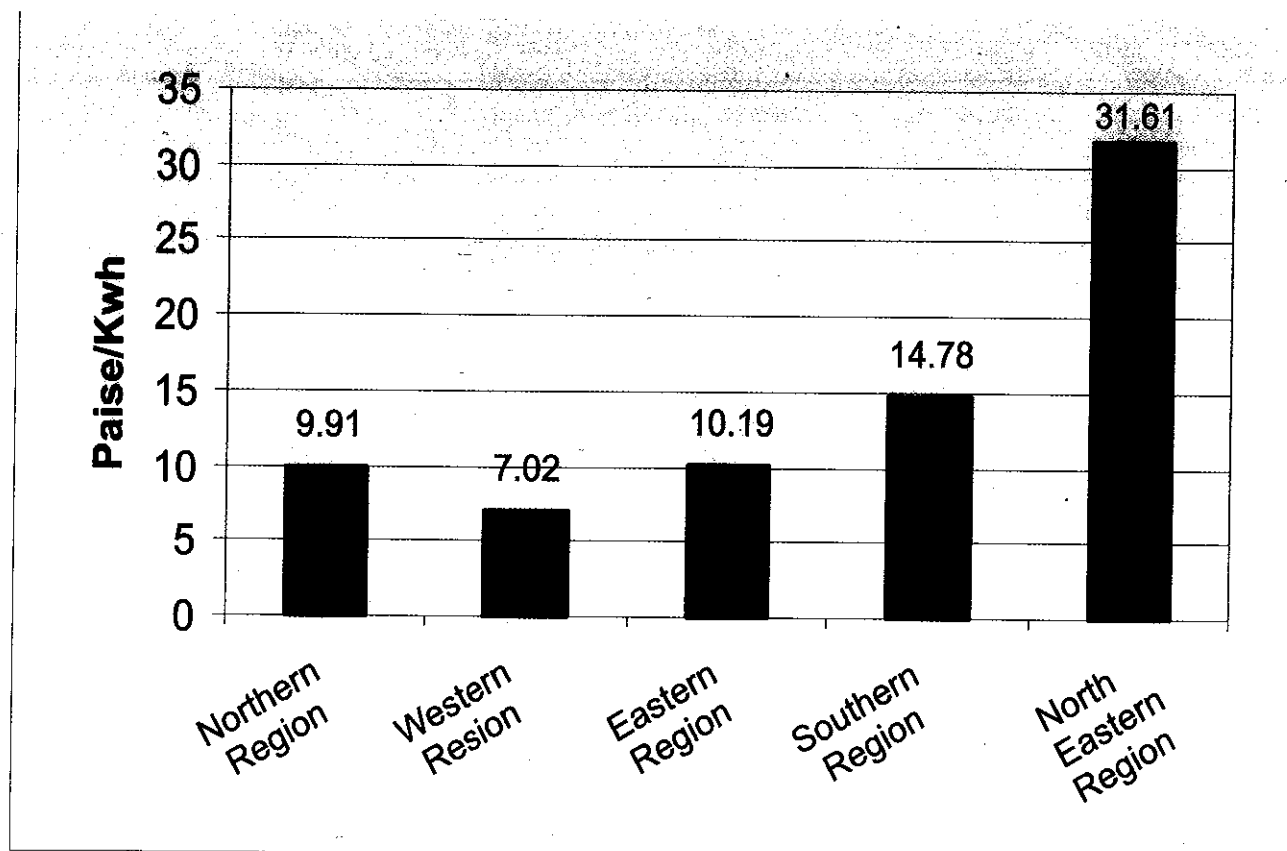
PRICE OF BULK POWER : NHPC POWER STATIONS DURING THE YEAR 2004-05





## ANNEXURE-XI

### INTER-STATE TRANSMISSION TARIFF FOR THE YEAR 2004-05



Sl. No.	Name of Region	Transmission Charges (in Rs.)	Energy handled (MU)	Tariff Paise/kwh
1	Northern	83508	84246	9.91
2	Western	40996	58380	7.02
3	Eastern	27262	26764	10.19
4	Southern	80888	54737	14.78
5	North-Eastern	17919	5668	31.61





## ANNEXURE-XII

### PER UNIT COST OF GENERATION OF THERMAL STATIONS OF NTPC, 2001-04

S. No.	Name of the Generating Station	Installed Capacity	CERC approved Annual Fixed Charges			Annual Electricity/ Generation Ex-bus Corresponding to Target Availability	Per Unit Fixed Charges Corresponding to Target Availability			Energy Charges as in March*			Per Unit Generation Cost		
Year	Units	MW	2001-02	2002-03	2003-04	MU	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04	2001-02	2002-03	2003-04
			Rs. Lakh	Rs. Lakh	Rs. Lakh		Paise/Kwh	Paise/Kwh	Paise/Kwh						
<b>Coal Based Thermal Generating Stations of NTPC</b>															
1	FGUTPP TPS ST-I	420	19612	19173	19591	2664	74	72	74	102	103	103	175	175	182
2	FGUTPP ST-II	420	20216	20125	22121	2564	76	75	83	223	102	106	259	178	190
3	Rihand STPS*	1200.60	49925	49925	49925	6377	73	78	78	62	66	73	141	164	152
4	Singrauli STPS	2000.00	35007	35702	36460	12860	27	28	28	68	63	77	96	91	105
5	NCTP Dadri	840.00	38032	37378	36788	5327	71	70	69	158	159	141	230	230	210
6	Tanda TPS	443.00	15795	15499	15200	2855	77	75	74	213	150	143	231	112	119
7	Vindhyachal STPS-S-I	1260.00	30456	31087	31782	7231	33	39	40	69	73	79	327	112	119
8	Vindhyachal STPS-S-II	1090.00	46624	40825	44731	63972	9	6	7	68	72	73	75	78	85
9	Kobra STPS	2100.00	37110	35135	38947	13400	23	28	29	45	48	50	72	76	79
10	Ramagundam STPS	2100.00	49125	50381	46152	13466	36	37	34	77	89	28	113	227	123
11	Simhadri TPS	1000.00			44530	6447			69			85			155
12	Talcher TPS	460.00	15456	15678	15928	2894	57	58	59	68	52	52	126	110	111
13	Talcher STPS-S-I	1000.00	51937	49553	50126	6457	81	77	78	40	44	45	129	121	122
14	Farakka STPS	1600.00	59129	57689	58127	10260	58	56	57	91	103	103	149	159	159
15	Talcher STPS-S-II	1000.00			50215	6447		5	78			45			124
16	Kabalgaon STPS	840.00	37469	37397	36837	5283	71	71	70	111	117	119	182	138	188
<b>Gas/Liquid Fuel Based Stations of NTPC</b>															
1.	Dadri CCGT	829.78	21982	21506	21096	5641	39	38	37	98	135	287	137	173	324
2.	Fariabad	431.00	21382	21529	21631	2938	75	73	74	97	97	89	170	170	163
3.	Anra CCGT	419.33	9703	9579	7948	2851	34	34	28	95	140	143	179	174	171
4.	Auraiya CFS	663.36	15450	15115	14511	4599	34	34	32	96	141	140	230	175	173
5.	Kawas CCGT	556.20	24797	25057	25341	3624	68	69	70	131	312	197	355	382	267
6.	Gandhar CCGT	657.00	21674	21590	22492	2444	89	88	92	240	321	306	378	429	396
7.	Kayankulam CCGT	359.58	21674	21590	22492	2444	89	88	92	240	321	306	328	409	396

Note:

1. Simhadri and Talchar-STPS-I have been commissioned in 2003-04.

2. Annual fixed charges for Ramand STPS are pre-existing Charges due to stay of Rajasthan High Court.

\* Energy charges tabulated are base energy charges subject to adjustment on account of price and heat value of fuel.



# PER UNIT COST OF GENERATION OF HYDRO STATIONS OF NHPC & NEEPCO DURING 2001-04

Sl. No	Name of Generating station	Owner	Installed capacity (MW)	CERC approved Annual Fixed Charges (Rs. in Crore)			Saleable generation* based on Annual Design Energy (Million Kwh)	Per unit generation cost (Paise/KWh)		
				2001-02	2002-03	2003-04		2001-02	2002-03	2003-04
1	Baira-Siuil	NHPC	198	43.95	45.36	46.86	681	65	67	69
2	Salai	NHPC	690	172.8	173.92	178.25	2685	64	65	66
3	Chamena-I	NHPC	540	283.5	222.03	210.23	1447	196	153	145
4	Uri	NHPC	480	580.96	538.14	516.02	2249.6	258	240	229
5	Tanakpur	NHPC	94.2	47.43	44.88	45.43	394	120	114	115
6	Rangit	NHPC	60	91.08	94.66	85.11	295	309	321	289
7	Loktak	NHPC	105	36.46	38.8	40.22	391.5	93	99	103
8	Ranganadi	NEEPCO	405	-	20703	202.52	1632.63	-	127	124
9	Doyana\$	NEEPCO	75	41.57	43.65	45.83	197.76	210	221	232
10	Kopili	NEEPCO	200	53.94	54.1	51.25	844.96	64	64	61
11	Khandong	NEEPCO	50	18.72	18.9	19.17	241.84	77	78	79

\* Saleable generation in Ex-bus and after deducting 12% free energy to home state

\$ Doyang HEP Annual Fixed Charges are based on GOI directive of single part tariff to Rs. 2/Kwh with annual escalation @ 5% per annum.

ANNEXURE-XIII

## ANNEXURE-XIV

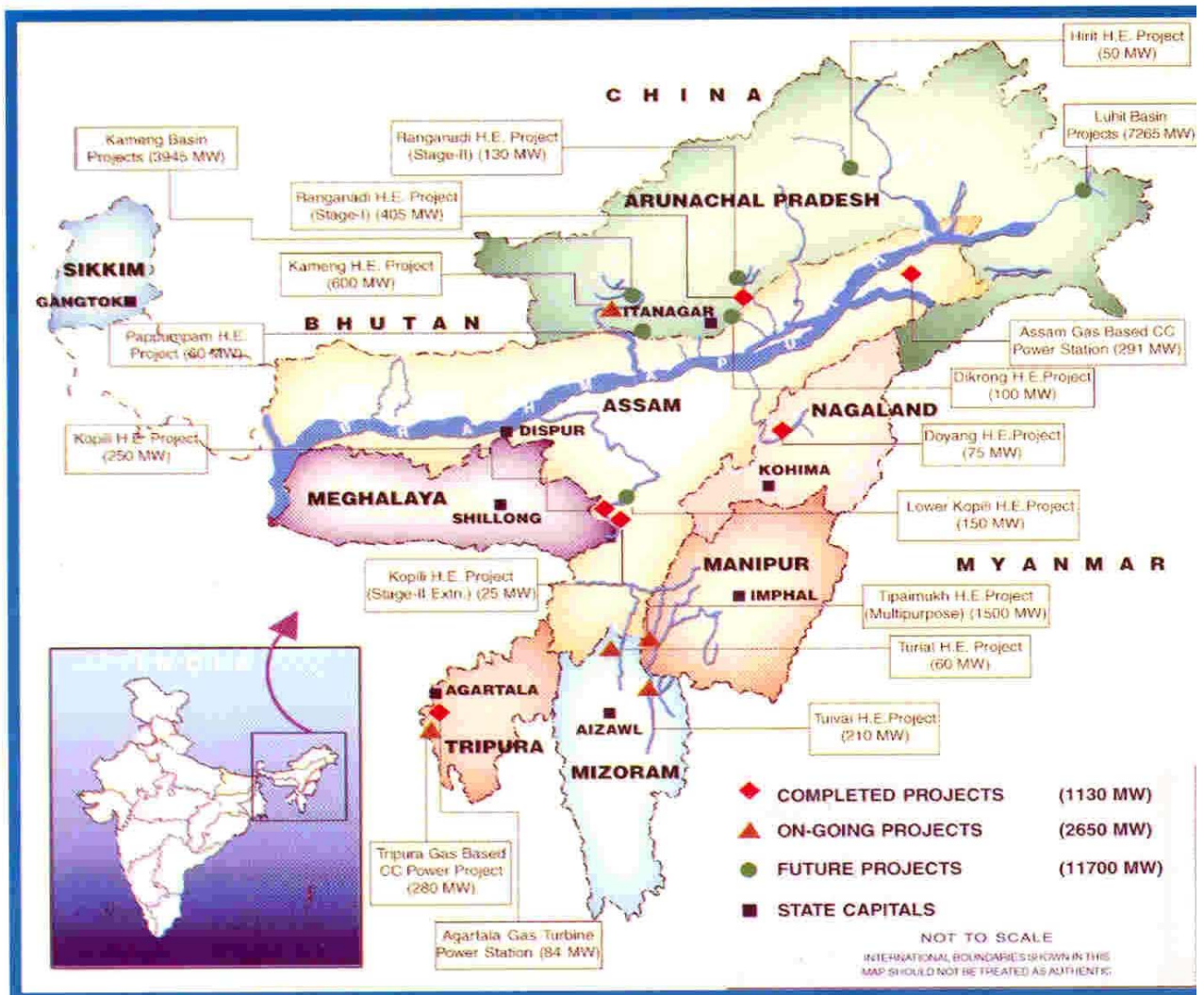
### LOCATION MAP OF NTPC POWER STATIONS





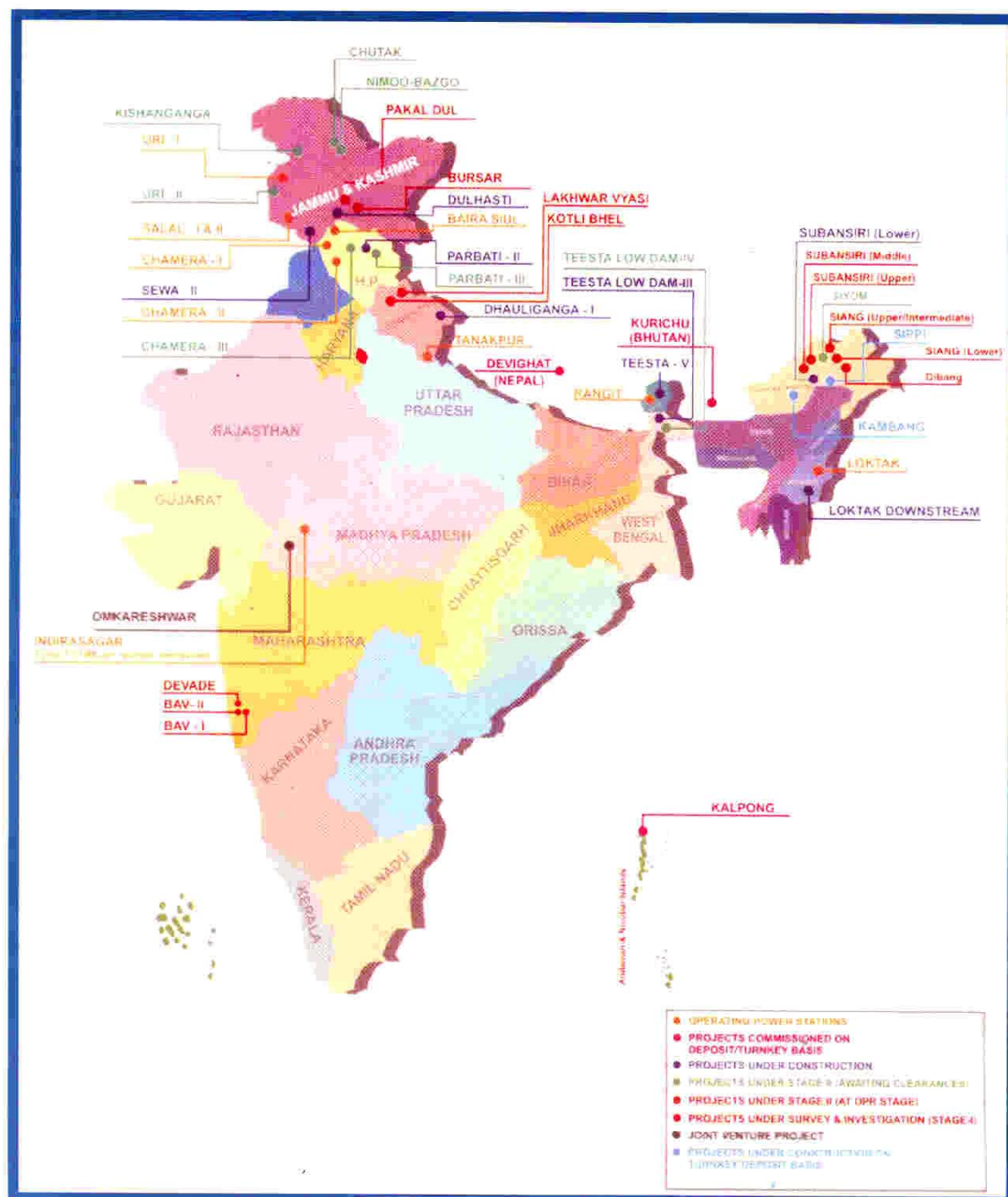
## ANNEXURE-XV

### LOCATION MAP OF NEEPCO POWER STATIONS



## ANNEXURE-XVI

### LOCATION MAP OF NHPC POWER STATIONS







## ANNEXURE-XVII

### INTER-STATE TRANSMISSION NETWORK OF POWER GRID AS ON 31.03.2005

