



**ANNUAL REPORT**  
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POWER GRID CORPORATION OF INDIA LIMITED

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# Overview

## Our Mission-The Focal Point



**E**stablishment and operation of regional and national power grids to facilitate transfer of power within and across the Regions with reliability, security and economy on commercial principals.

**T**hus, the two distinct board business areas emanating out of the mission are: Establishment, Operation and Maintenance of transmission network i.e. "The Wires Business", and System Operation, Coordination and Power pooling.

### The path of our Mission...Our Objectives

**T**he Corporation has set the following objectives in line with its Mission.

- Efficient operation and maintenance of transmission systems.
- Strengthen Regional Power Grids and establishing Inter-Regional links leading to the formation of the National Power Grid.
- Establish/augment regional load despatch centres and communication facilities.
- Introduce rational tariff structure for exchange of power.
- Bring about economies of scale in all facets of power Systems.
- To achieve constructive cooperation and build professional relations with stake-holders, peers and other related organizations.

### Unfolding The Future

**T**he process of unfolding the future POWERGRID, has already been conceived and will be self revealing of its onward march towards the vision.

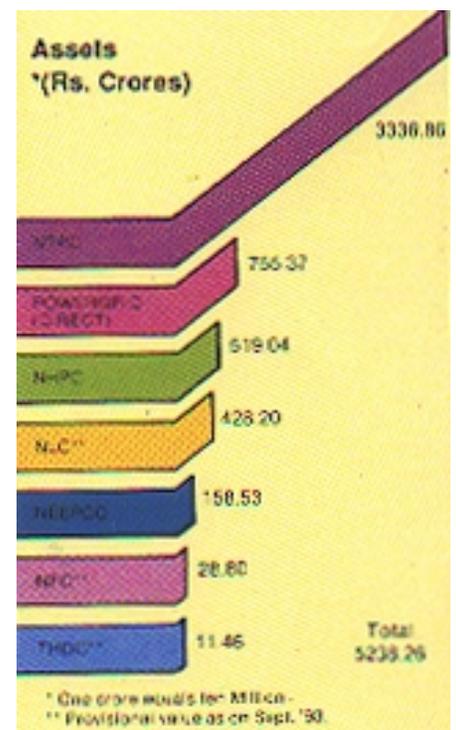
**F**irst phase-Taking over commissioned/ under construction and planned transmission lines and substations from the Central/Centre State joint venture organizations, augmentation of load despatch and communication facilities. Transfer of related manpower and wheeling of power from the participating power stations to the beneficiary States.

**S**econd phase-This phase involves improved coordination in the operation of regional grids, transfer of existing RLDCs and related operational functions for regional and inter- state integrated operation and coordination to facilitate power trading.

**T**hird phase-Establish power pools to facilitate the exchange of power between states/regions leading to the formation of the National Power grid.

### Consolidating the Base

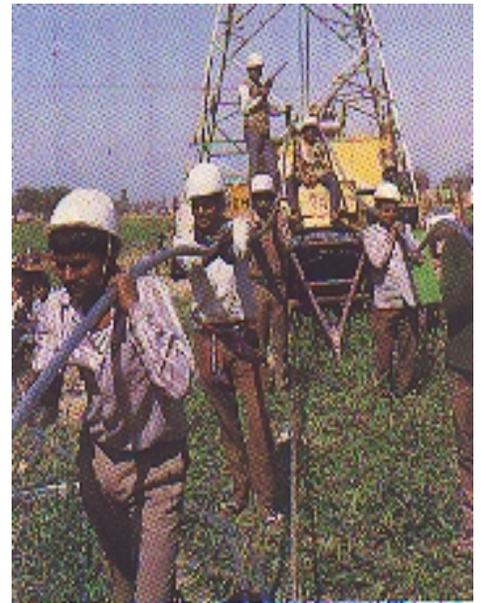
**K**eeping in line with the cabinet decision for bringing all the EHVAC, HVDC transmission system of centre/centre- state joint venture, under the umbrella of a single central nodal agency, namely POWERGRID, the transfer of various physical and manpower assets have already been accomplished. The values in respect of the same, as on 31st March, 1993 are given as under:



\* One Crore equals ten Millions.

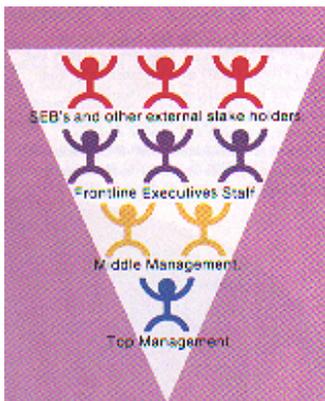
\*\* provisional value as on Sept.30, '93.

# POWER GRID CORPORATION OF INDIA LIMITED



## The Structure of Power

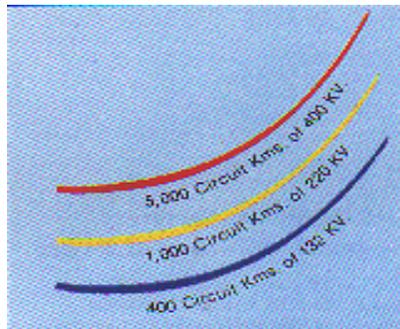
**P**OWERGRID has developed a unique organisation chart, best suited for the kind of business interests it has to carry out. The operational significance of this structure is best depicted by a descending inverse triangle. On which there is a topping of State Electricity Boards (SEBs) and other external stake-holders, which is supported by the cream of the organisation, the



frontline staff and executive, who in turn, are supported and guided by the middle management. The top management supports the entire structure at the inverted apex, which is ultimately touching the base, the ground. Thus, fulfilling the mission of the organisation in its holistic approach towards service.

## The Building Blocks of Power

**I**n the area of construction, presently, more than 6,000 Circuit kms. of



transmission lines which include about 5,000 Circuit kms. of 400KV , 1,000 Circuit kms. of 220 KV and about 400 Circuit kms. of 132KV are under construction by POWERGRID. Further , construction of additional 5,000 Circuit kms. of transmission lines including 600 Circuit kms. of 800KV , 4,000 Circuit kms. of 400KV and 100 Circuit kms. of 220KV shall be taken up for construction shortly. POWERGRID is also engaged in the construction of 4,200 MVA transformation capacity and shall take up another 1,000 MVA transformation capacity for construction shortly.

## Giving Back What We Take

**T**oday our world is beset with the twin “Tragedies of the commons”. The seemingly innumerable pitfalls of the environmentally inappropriate use of technology and science, signalling a great threat for the survival of the entire human race and the ever exploding population outgrowing the rate of growth of food production, forcing human beings to depend more on these very environmentally inappropriate technologies.

**T**he simplest way people understand the important but obtruse problems of our times, especially those related to environment, is to generalise by saying that there are no simple solutions to any problem. All issues are complex, and nearly every conceivable answer invariably leads to another set not understanding this perplexed situation may be that neither technical nor social solutions are entirely effective by themselves, instead, scientific, legal, economic, political and the entire gamut of attitudinal realities must all be taken into account.

**K**eeping the above in view, and also with the given constraints, POWERGRID, in its race to save this planet had right from its inception raised its concern for environment and pioneered the proposal for establishment of a “Forest Bank” for speedy project clearance and implementation.

**T**hat is, therefore, the *raison d'être* that for every POWERGRID project, environmental concern occupies the top most priority, keeping in view simultaneously, the meeting of the pent up demand for electrical energy for keeping the wheels of the national economy moving and ultimately paving the way for a better quality of life while making sure that we give back much more than what we take, and leave a world of a sustainable human society for the future.



## Board of Directors



### **R. K. Narayan, Chairman & Managing Director, POWERGRID**

Mr.R.K.Narayan, founder Chairman & Managing Director of POWERGRID, brings with him a wealth of experience of over 34 years in various fields in the Power Sector.

Born on July29,1937,Mr.Narayan acquired his B.E.(Electrical) from Aligarh Muslim University.

In a distinguished career starting from Uttar Pradesh State Electricity Board (UPSEB) where he rose to the level of Superintending Engineer,he joined National Thermal Power Corporation Ltd.(NTPC) in 1982 as Deputy General Manager and was elevated to the position of Executive Director (Engineering). Subsequently he also held the post of Member (Thermal) CEA.

As Chairman and Managing Director of POWERGRID since Nov.1990,Mr.Narayan has been the guiding force behind the current. restructuring programme of the Indian Power Sector resulting in the acquisition by and merger with PowerGrid,of the transmission system assets of various other organisations in the Power Sector such as NTPC,NHPC,NEEPCO etc.

His overall guidance and leadership has helped POWERGRID scale new heights in performance and excellence.

### **A.H.Jung, Jt.Secretary(Systems), Ministry of Power**

Born on February 7,1942,Mr.A.H.Jung,completed his B.Sc.from Aligarh Muslim University in 1963 and Later did his LLB from Delhi University in 1965.

In his present assignment as Joint Secretary (Systems)in the Ministry of Power,he is incharge of all matters pertaining to transmission systems



and POWERGRID.Apart from being involved in Policy formulation relating to transmission systems,he is also incharge of the supervision of Operations and Monitoring of Power Plants countrywide.



### **S.C.Parakh,Director (Projects), POWERGRID**

Born on July27,Mr.S.C.Parakh graduated in Mechanical Engineering (1961)and joined POWERGRID in November1991 from NTPC.He has specialised in procurement,contract management,project management,production planning and control and has contributed towards formulation of operation and Maintenance Systems and their implementation in POWERGRID.

Company Secretary: Shri P.D.Tuteja, Statutory Auditors:M/s Laxmi Niwas & Jain,Chartered Accountants,Hyderabad, M/s Sri Associates,Chartered Accountant,Calcutta.M/s Batra Sapra & Company,Chartered Accountants,New Delhi.Bankers:Canara Bank State Bank of Hyderabad,Oriental Bank of Commerce,Indian bank State Bank of india,Central Bank of India,Punjab.



# POWER GRID CORPORATION OF INDIA LIMITED



## **T.V. Subramanian, Director (Finance), POWERGRID**

Born on July 6, 1937, Mr. T.V. Subramanian specialises in the field of project finance costing and has had special exposure to this field abroad. Mr. Subramanian joined POWERGRID from NTPC as Director (Finance) in 1990.

Under his able and resourceful guidance and direction as Director (Finance) POWERGRID has been leaping from strength to strength

National Bank, Indian Overseas Bank, Union Bank of India, State Bank Travancore, Syndicate Bank, State Bank of Mysore. Registered Office: Hemkunt Chambers, 89 Nehru Place, New Delhi 110019. (This report was adopted at the Fourth Annual General meeting of The Company held on September 23, 1993.



## **S. K. Chawla, Director (Personnel), POWERGRID**

Born on August 25, 1937, Mr. S.K. Chawla has graduated in Petroleum Engineering (Indian School of Mines, Dhanbad) and acquired post Graduate Diploma in Oil Field Management from ENI School of Mines (Italy).

Starting his career in 1961 as Production Engineer in Oil & Natural Gas Commission (ONGC), Mr. Chawla joined as Director (Personnel), POWERGRID on June 25, 1993. In a short span of time, Mr. Chawla has made an indelible mark on the personnel policy structure of the corporation.



## **H.C. Mital, Member (Power Systems), CEA**

Born on October 2, 1937, Mr. H.C. Mital completed his B.E. (Electrical) in 1957. As Member (Power System), CEA, he is deeply involved with the formulation of policy on Power Transmission and Distribution in the country and has also substantially contributed to the development of the corporation in its formative stages.



## **T. Sethumadhavan, Jt. Secy & Financial Advisor, Ministry of Power**

Born in 1942, Mr. Thayyil Sethumadhavan is a Post-Graduate in Commercial Law from Bombay University and also a Graduate of the Defence Services Staff College (Wellington).

Mr. Sethumadhavan is presently a joint Secretary and Financial Advisor, Ministries of Power and Water Resources.

# CHANGE

Change is evolution. Change brings revolution. Both are integral parts of life.

The colours of autumn change to winter, then burst forth with the vibrancy of spring.

The caterpillar metamorphoses to the cocoon and then to the colourful butterfly.

The old order gives way to the new

It is this change that is sweeping through the Indian Power Sector today.

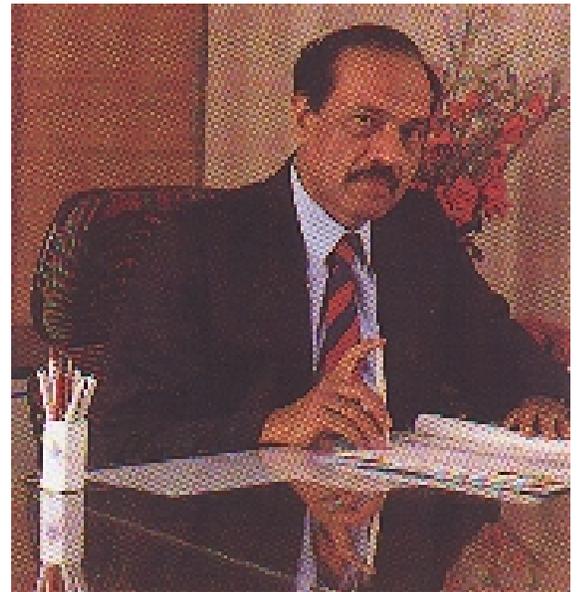
Restructuring, realigning, reformulating.

To keep pace with the new economic environment, and the pressures of spiralling demands for energy.

POWERGRID is at the vanguard of this change. A change agent, which encapsulates the new era of the Indian Power Sector.

# POWERGRID :

## A Change agent for the Indian Power Sector



### Gentlemen

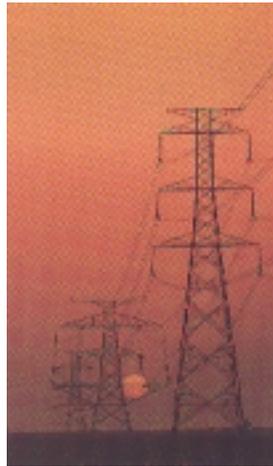
It is great pleasure to welcome you to the 4th Annual General Meeting of POWERGRID, As we pause and take stock of the year that was, we are already midway into yet another year full of challenges, requiring our continuous rededication in carrying the torch as a “Change Agent” in the evolution of the Indian Power Sector.

Before delving further on the theme chosen for today, let us look back at our footprints on this marathon runway encompassing the previous years and especially, the last year 1992-93. We find that your organization has been leaping forward with firm commitment to serve the nation in its race to excel without a finish line. We have crossed many milestones worth recapitulating now, to rejuvenate our spirit for setting sight on greater and greater heights and meeting higher and higher challenges towards this endless progression and fulfilment of our vision. In this context, let me share with you some of our recent achievements and performance highlights.

### POWERGRID : A Renascent Vitality

As you are aware your company has been renamed as “Power Grid Corporation of India Limited” with the approved abbreviated name as “POWERGRID” from the erstwhile National Power Transmission Corporation Limited, (NPTC). We have rechristened ourselves, keeping in view its

direct reflection of our organization’s Corporate Mission of establishment and operation of regional and national power grids. I am sure this name change would help disseminate our mandate to our beneficiaries and stake-holders and would further help us in achieving our vision



### The Amalgamation : De- jure Transfer of assets.

Friends, you would be happy to note that all formalities in respect of legal as well as physical de- jure transfer of transmission system assets from National Thermal Power Corporation Limited (NTPC), National Hydroelectric Power Corporation Limited (NHPC), and North Eastern Electric Power Corporation Limited (NEEPCO), to Powergrid have almost been completed with retrospective effect from April 1, 1992. This milestone could not have been achieved but for the continuous, collective and dedicated efforts of all the employees of the organization and whole-hearted support of eminent persons in

various related governing and financing organization. Transfer of the HVDC Transmission Lines and

**P**OWERGRID conceives itself as a corporation, not merely as a transporter of power from one end point to another, but as an enduring institution, and also as an agent of change.

*\* Quoted from the Text.*

associated terminal stations to POWERGRID is also being taken up expeditiously. We have also taken over the transmission system assets from Neyveli Lignite Corporation Limited (NLC) and Tehri hydro Development Corporation Limited (THDC) on management basis and the legal formalities for the transfer of transmission assets for the above have already been initiated. In respect of transfer of Regional Load Despatch Centres (RLDCs) in a phased manner, the matter has been taken up appropriately with Ministry of Power (MOP) / Central Electricity Authority (CEA) for their expeditious action.

### FINANCIAL LEAP

I am happy to inform you that during the year 1992-93, your company has made an impressive post-tax profit of Rs. 236.61 crores on a total turn-over of Rs. 634.06 crores. The turn - over includes the billing made by NTPC and NHPC prior to the promulgation of the Ordinance for transfer of assets from these corporation and the sale of Chukha power purchased from the Royal Government of Bhutan.



## OPERATIONAL EXCELLENCE

**P**OWERGRID, being one of the largest bulk power transmission organizations in the world, boasts of having a network of transmission

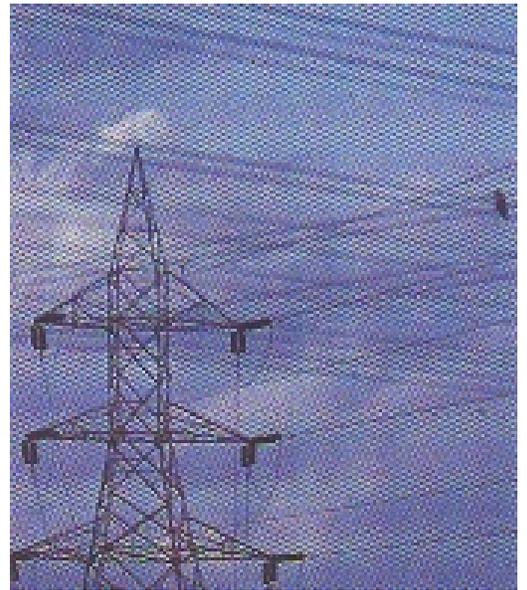


*Linking inaccessible areas with power,  
we help millions in their livelihood.*

lines throughout the country. At present, your organization is operating about 23,000 Circuit kms. of transmission lines, consisting of about 1,630 Circuit kms. of 500 KV HVDC, 16,100 Circuit Kms. of 400 KV EHVAC and 4,570 Circuit Kms. of 220 KV, 700 Circuit km. 132KV AC transmission lines and 42 sub-stations with a total transformation capacity of around 13,200 MVA. The existing transmission systems is maintained at a consistently high level of availability of around 98%. POWERGRID has also commissioned on their own, a total of 3,651 Circuit kms. lines and has added a transformation capacity of 4,410 MVA during the previous years.

**I**n the area of construction, presently 6,040 Circuit kms. of transmission lines which includes 4,716 Circuit kms. of 400KV, 941 Circuit kms. of 132 KV are

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under construction by POWERGRID. Further, construction of additional 4,646 Circuit kms. of transmission lines, including 580 Circuit kms. 800KV, 3,951 Circuit kms. of 400 KV and 85 Circuit kms. of 220 KV shall be taken up for construction shortly.

POWERGRID is also engaged in the construction of 4,195 MVA of transformation capacity presently, and shall take up another 945 MVA transformation capacity for construction shortly.

The world without the transmission system is a world without the roads and the transportation system.

*\*Quoted from the Text*

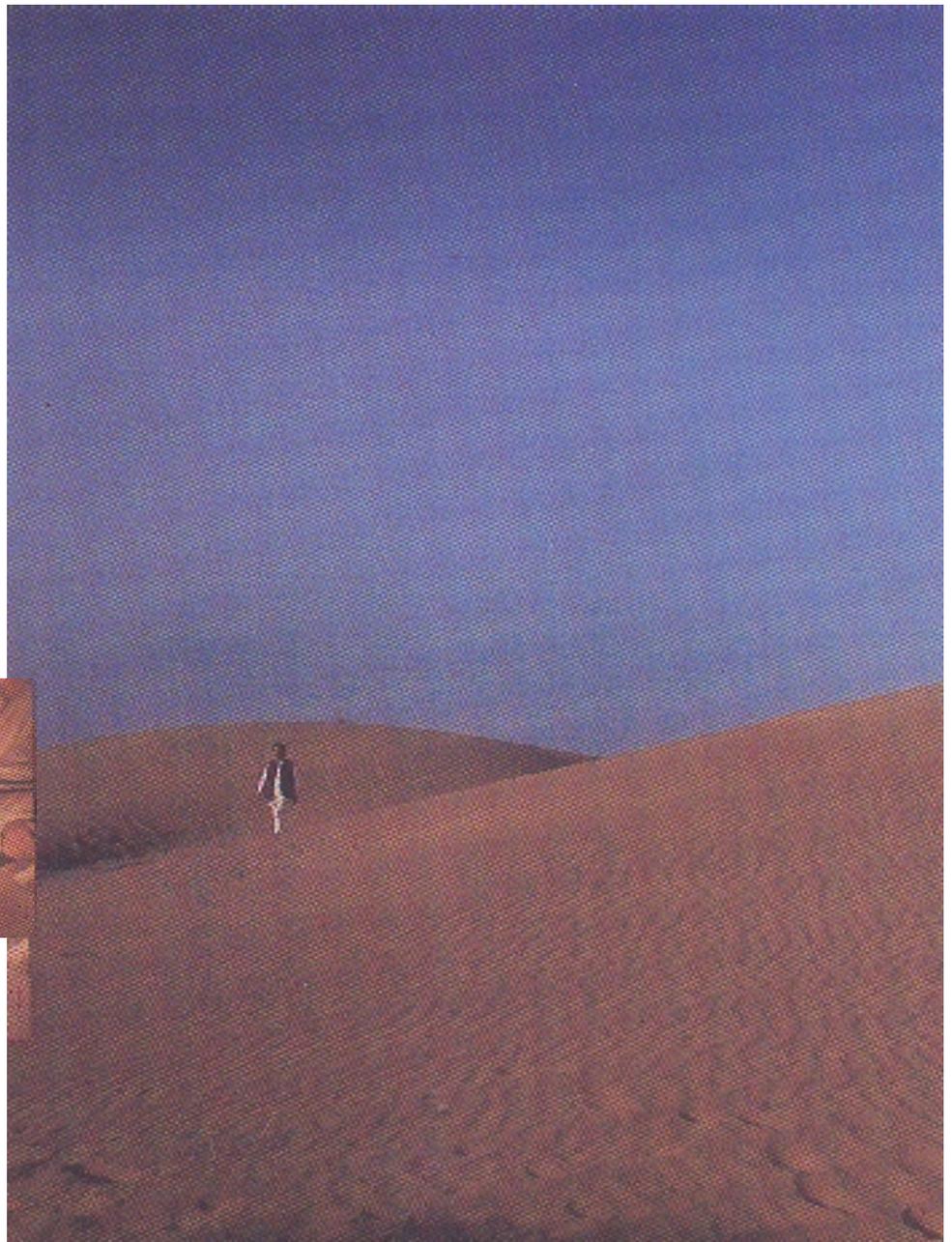
### **Kudos From International Financial Institutions**

Your organization has been receiving extremely good response from International Financial Institution. It is a matter of pride that the World Bank has recently extended a loan of



*In the barren, remote deserts, the power we bring helps keep the lamp of learning alight.*

US\$ 350.0 million directly to POWERGRID for its various projects and organisational studies. This loan is the first of its kind to be granted to any central Transmission Agency by the Bank. This is in addition to the World Bank loans transferred from NTPC and NHPC, amounting to US\$ 1,129.5 million in respect of various ongoing projects. Thus, the total World Bank

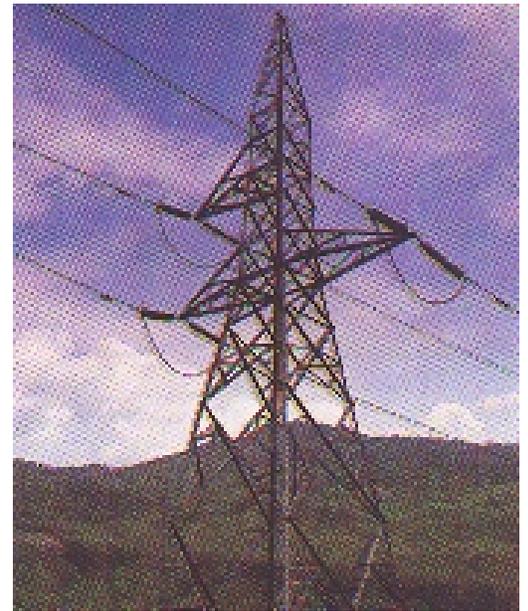




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loan commitments to POWERGRID stands at a whopping US\$ 1,479.5 million, with a promise of more loan assistance in the future. Asian Development Bank (ADB), has also shown keen interest in funding the North-Eastern Transmission System Projects and Load Despatch & Communication schemes of POWERGRID. European Investment Bank (EIB) has taken up POWERGRID as the first organization in their very first ever extension of leading activity in Asia. They are considering to co-finance the Southern Region Load Despatch Communication (SRLDC) Project to the extent of European Currency Unit (ECU) 50 million (about US\$ 60 million).



*From the highest peaks to wave-washed coasts, our power link is changing peoples' lives.*

Overseas Economic Corporation Fund (OECF), Japan, with the second tranche of loan, now available, for the transmission system associated with Gandhar Gas Based Project, have extended a loan of JY 7.115 billion to us so far. Kathalguri Transmission Project (KTP) is also being implemented with OECF assistance amounting to JY 43.552 billion towards both power station and transmission system. The other International Funding Agencies who have already extended/shown interest in funding the various ambitious projects of

POWERGRID are Industrial Bank of Japan (IBJ), Export Import Bank of Japan Overseas Development Administration of U.K. (ODA), etc.

The segregation of these two distinct business entities, namely, Generation and Distribution from Transmission, would infuse competition.

*\*Quoted from the Text*

### MOU WITH MOP

POWERGRID in a short span of its existence has signed its first Memorandum of Understanding (MOU) for the financial year 1993-94, with the Ministry of Power, Government of India. The signing of MOU will enable POWERGRID to exercise the financial and administrative powers in investment approval for schemes up to Rs. 50 crores, power to incur advance expenditure up to Rs. 5 crores on schemes under approval, etc., as are applicable to the MOU signing companies. On the other hand, this MOU binds us with stringent targets for project companies and operation.

### INTER -UTILITY MOU'S

POWERGRID has signed MOU with National Grid Company (NGC), UK, in July, 1993 regarding exchange of information and expertise, exploring opportunities for business development, technical cooperation and sharing of experience for mutual benefit. POWERGRID has also signed an MOU in March 1993, with Hydroquebec International (HQI), Canada, for sharing experience and technological cooperation in the field of Power



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System Engineering and for joint pursuit in developing business in this area.

**W**ith this brief recapitulation of the glorious achievements of

POWERGRID within a short span of making its debut in the Indian Power Sector, let me now elaborate upon the role of your organization as a "change agent".

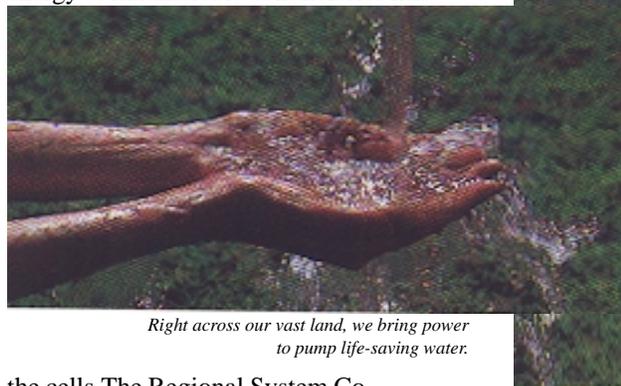
**B**y transmission we mean *"to be continuously in the dynamic state of translating mission"*.

*\*Quoted from the Text.*

### **POWERGRID : A Turning Point in Indian Power Sector**

Gentlemen, as POWERGRID goes international, and as our country moves on from command economy and as the winds of change sweep across the economic boundaries, the time is ripe for us to reassess the fundamentals once again, especially towards one of the most powerful economy driving sectors in any developing economy-the Power Sector. For, there is no gainsaying the fact that the entire pace of this economic development is delicately balancing on the pace of development of this sector. The economic restructuring and liberalisation, which we are now passing through, is a revolution in disguise. And, when the economy is set to develop in leaps and bounds and when there is a development in capacity additions to power generation, can the development of transmission system be far behind! Evidently, there has been a clearly noticeable major shift in focus in the power sector for the past few years and it

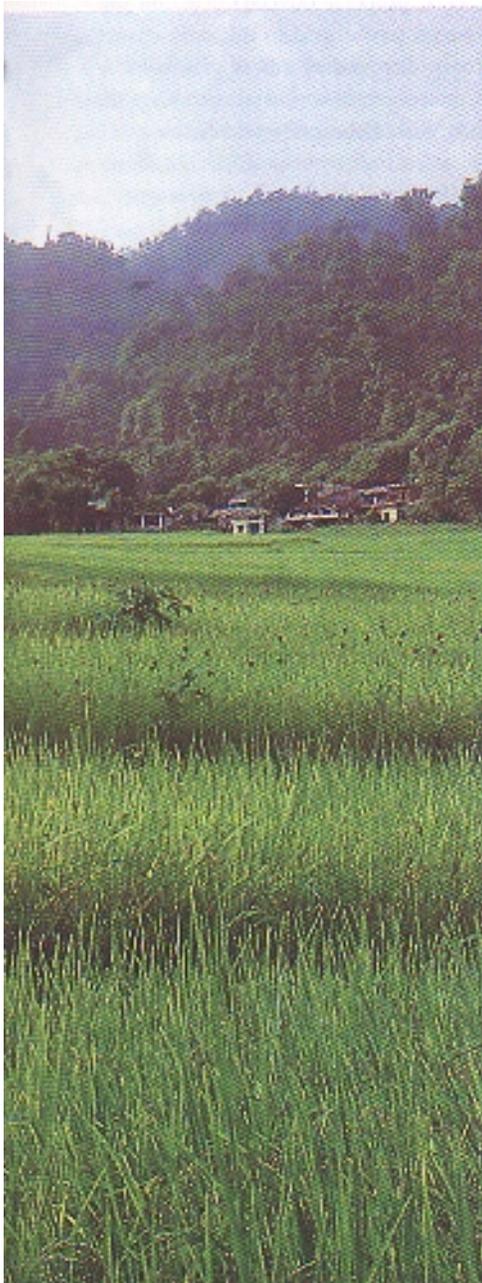
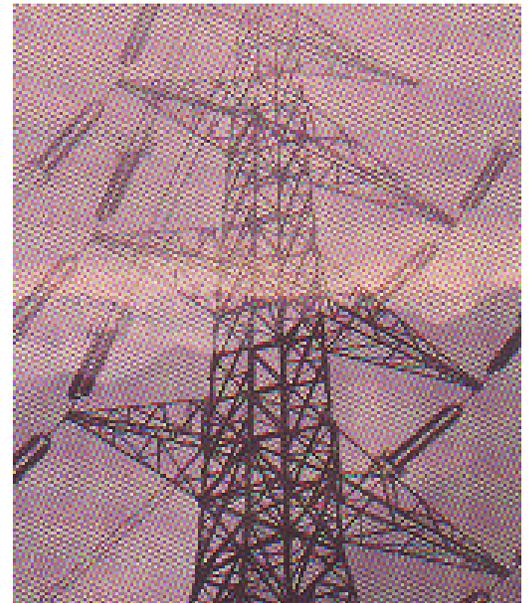
is expected to continue for some years to come. Because, the world without the transmission system is a world without the road and the transportation system. The connection is simple, and the parallels are many. Power station is the heart and transmission lines are the arteries, spread throughout the economic entity (the country) which is like the body. These transmission lines constantly carry the power like the blood, for feeding the basic energy to innumerable beneficiaries like



*Right across our vast land, we bring power to pump life-saving water.*

the cells. The Regional System Co-ordination Centre (RSCCs) at the regional level and State System Co-ordination Centers (SSCCs) at the level are the nerve centers. The National System Co-ordination Centre at the National level is like the brain - the master of all control centres, constantly interacting, directing and monitoring the dynamic demand and supply of power like blood, through pulses and impulses like two way communication systems with the various nerve centres in the despatch and communication systems' hierarchical structure. With the above parallels in view, may I have the privilege to say POWERGRID truly occupies the very core of the core sectors.





### **Birth of POWERGRID-A Natural Evolutionary Process**

**W**hen Galvani accidentally came across the event of giving a momentary life to a dead frog by touching two interconnected dissimilar metal wires and made it a good pastime magical games for his friends to Enjoy, nobody probably could have had even an iota of foresight that the further human lifeline would hover around this very basic invention of the flow of electricity.

**A**t the initial stages of development of any society, the basic economic activity, like the business, was at the infantile stage, when production, distribution and sales were all performed by the producer himself. The primary reason for such centralized monolithic business operations was because of the lower economic base as also lesser population pressures. Further, earlier it used to be a sellers' market as opposed to the present times, when it has become a buyers' market. As the population started expanding along with the increased base of the economy, each of the above activities could no longer be carried out under one umbrella and subsequently each of the above activities emerged out to be a separate business activity, justifying its pursuit on its own merit. Trading, broking agency operation, distributing, retailing, transporting, etc. thus came into existence in their own right in the evolutionary process of development of business and economic environment.

**T**he present power sector restructuring and the birth of POWERGRID is no

different from the evolutionary process of development of the business as mentioned earlier. Historically Power Generation Transmission and Distribution activities were considered an inseparable single business activity. And, Transmission business being a naturally monopolistic business activity, in view of the fact that there is no economic cash for replicating the transmission system, the operation of power sector remained as a monopoly sector for quite some time, leading to sub-optimal utilization of the scarce depletable natural resources.

### **UNBUNDLING TRANSMISSION : THROWING-OPEN COMPETITION**

**I**n view of bringing about economy and efficiency in grid operation and hence achieving optimum utilization of resources in all facets of power sector, there is a felt need worldwide for an institutional restructuring of the power sector by segregating the transmission and distribution of power from generation, and bringing the transmission entity under the umbrella of a single central nodal agency which would not only monitor, plan, mediate and coordinate between various generating and distributing agencies in a unified manner, as an honest bulk transfer broker for power but would also be centrally planning the investment required for the development of the transmission system in the power sector.

**T**his restructuring is intended to create two parallel markets in the Power Sector.



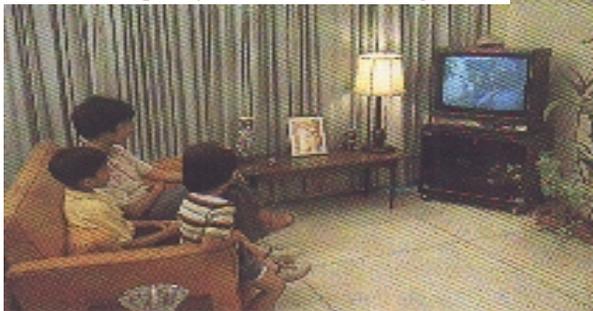
## POWER GRID CORPORATION OF INDIA LIMITED

On one side the Generators and on the other side the Distributors would compete among themselves in their respective markets.

This will provide impetus and help in attracting private capital in both generation and distribution. Further, the centralised operations will help in developing optimal system design, leading to efficiency gains and cost reduction, through ensuring effective regulation/control of Power Systems. This would also help power generating companies to concentrate more on generation. Thus, the segregation of these two distinct business entities, namely, Generation and Distribution from Transmission, would infuse competition, and would pave the way for the market forces to act in optimising the national resource utilisation, besides achieving the much needed efficiency gains and ultimately leading to a cascading multiplier effect on all facets of the country's economy.

### PRIVATE SECTOR PARTICIPATION

In the recent past Government had announced a policy decision of allowing



*From rural hinterlands to huge metropolises, we are the vital link to light up your homes.*

private sector participation in power generation and distribution so as to bring in additional resources as well as infuse competition, for increased efficiency in

power sector operation. Keeping in view that Private/Joint venture generating companies will soon be entering into the arena, it is imperative that planning of the associated transmission system for evacuation of power generated from such ventures should be dovetailed into the overall planning of transmission system envisaged by SEBs/POWERGRID.

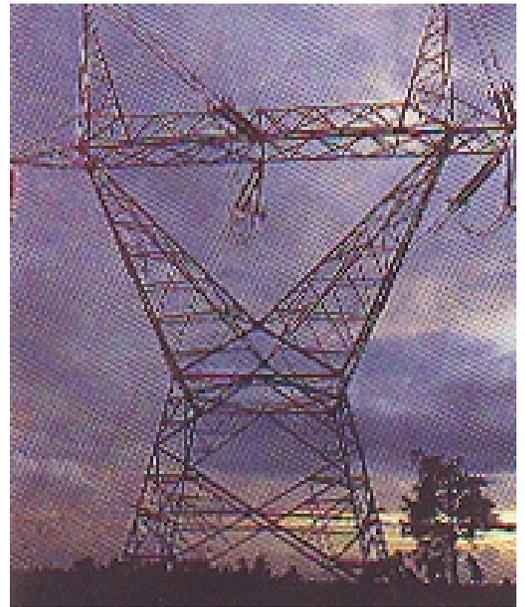
In the case of small size private generating stations where the power is to be fully absorbed within the state system and the generation is not likely to have significant impact on the tieline flows of the regional grid, the power evacuation system will normally comprise a few links within the state grid and the same should be dumped in association with the concerned SEB. However, in cases where significant size of generating plants are

being planned, power evacuation system of the same has to be planned in an effective and reliable manner. The evacuation system is to be properly dovetailed within the regional power grid to not only ensure proper dispersal of power generated from such stations but also to keep the same within the safe and reliable operation limits of the grid. The State and Regional System Coordination facilities have to be accordingly enhanced to take care of reliable and economic operation in the integrated power system.

The other factors which need attention are commitment to address fundamental problem of governance, specifying a clear legal framework putting in place a transparent regulatory structure and commercial tariffs which reflect real cost



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### **POWERGRID: BRINGING TOGETHER THE MOTIVE FORCE... THE PEOPLE**

**P**OWERGRID now has a well knit team of highly experienced engineers, professionals, technicians and workmen in the field of Power systems in the country, With 5,820 minds working cohesively towards a single goal of delivering quality service in electricity transportation to its ultimate beneficiaries. This includes 1,655 dedicated executives, 755 supervisors and 3,410 workmen. POWERGRID Human Resource Development Department is evolving as a unique platform to constantly monitor, identify and design specific training needs. I congratulate three of our employees, namely Shri Sirab Ali, Shri M.N. Saikia and Shri Newdhan Deka, who have made us proud on receiving the coveted Prime Minister's Sharm Shree Award-1993, for their exceptional contribution in productivity, production and innovative ability of higher order, in restoring AIZWAL-KUMARGHAT line under extremely difficult environmental circumstances. We have also inducted new blood, the 69 Engineering Executive Trainees to man the highly complex state-of-the-art equipments in Load Despatch and Communication and in various other fields.

### **POWER POOLING : A FUTURE REALITY**

**B**ased on Government of India's strategy that the country's generation supplies will

be owned and operated by a mix of Central agencies, SEBs and Private agencies, POWERGRID will be responsible for operating loose regional power pools as a facilitator/clearing house for the power trading between the States to enhance the inter-state cooperation for commercial power exchange arrangements.

**T**he concept of loose regional power pool implies that at every moment each SEB will be responsible for supplying its own load using either its own generated power or power received from central sector agencies, other SEBs or private generators in accordance with agreements made with these parties and the Grid Code (operating rules of the pool).

For POWERGRID, the beneficiaries and the other stake-holders occupy the top heavy end within our organisational structure.

*\*Quoted from the Text*

**P**OWERGRID will promote creation of regional power pools in all regions, on a voluntary cooperation basis of public and private utilities including alternative non-conventional energy systems for benefits of the members. POWERGRID will coordinate closely the generation despatch and transmission to optimize operation of total power system. As an operator of power pools, POWERGRID will provide information on available capacity and energy to members for their needs and a price range: monitor tieline flows for ensuring system reliability: deviations from agreed transactions: information for raising

bills and settlement etc. This system will ensure most economic generation of power based on commercial principles. States will be able to contract for specific type and quantum of power and will be free to contract cheapest power. This will also help the generating organizations in optimum utilization of their capacities.

### **SYSTEM CO-ORDINATION CENTRE: A STATE-OF-THE-ART TECHNOLOGY**

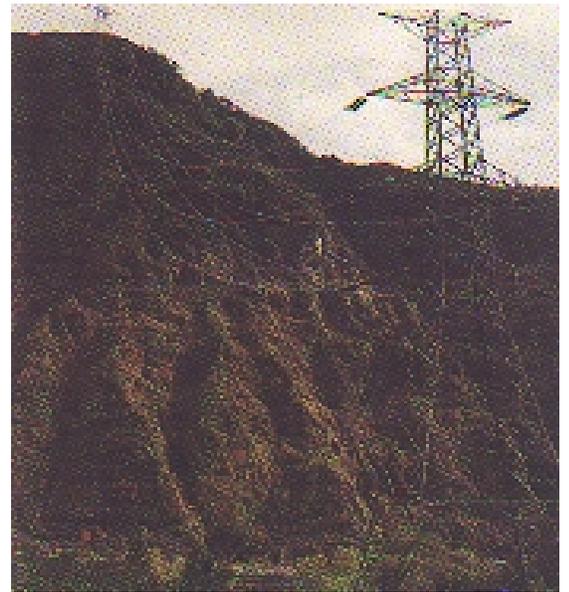
**T**he Regional Electricity Boards are presently responsible for scheduling and despatching the Regional Electric system which includes schedule of generation, coordination of plant maintenance schedules, setting tariffs for interagency power transfers and accounting of these transfers.

POWERGRID, ultimately, will be responsible for economical and reliable system operation of Regional System Coordination Centres (RSCCs). With adequate communications and control facilities in RSCCs, POWERGRID will evolve into an operator of loose regional power pools, with members not only continuing to have the basic responsibility for operating their plant and serving their customers, but also for coordinating many of the activities for mutual benefit voluntarily and effectively. The operational requirement entail that the functionalities be implemented at various levels of hierarchy both for operation planning activities and .The real-time control activities. The System Co-ordination Centres at State level (SSCCs), Regional level

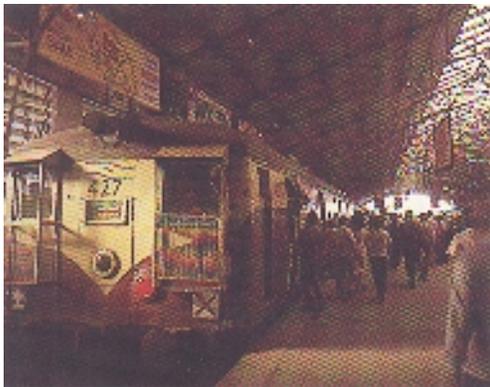
POWER GRID CORPORATION OF INDIA LIMITED



## POWER GRID CORPORATION OF INDIA LIMITED



(RSCCs) and National level (NSCC) will be established and equipped with modern computer based data acquisition and monitoring system for optimal operation for the system. POWERGRID also plans to take up projects in the area of system improvements in the distribution system for overall benefit of the SEBs in particular and the country as a whole.



*Out lines help power the wheels of the nation in the crucial transportation sector.*

### **INTER-REGIONAL LINKS: THE KEY FOR RELIABLE GRID MANAGEMENT**

It has been realized that the establishment of inter-regional links of adequate capacity are the key factors, which would help increase levels of reliability of power supply through emergency assistance and improved stability of inter-connected regions. Further, this inter-connection will lead to an optimal utilization of the available energy sources, which presently remain unutilized in substantial quantity

over the year in different regions, as at certain time of day/season, the generating stations in one region have to be backed down, while simultaneously there is a perceptible power shortage in the neighbouring regions. With overall energy shortage facing the country this is not a desirable situation. Thus, POWERGRID is making concerted efforts to realize this goal as expeditiously as possible. It would also help reduce unserved energy and, in the long term, overall investment for generation. Studies conducted by CEA in the year 1991 also reveal that Inter-Regional Links will save about 10,000 MW of Generation capacity by the end of Tenth plan. The findings/recommendations of the World Bank Study conducted in the year 1991, on "Long Term issues in Indian Power Sector" has also suggested this approach. The findings indicate that the inter-Regional links could reduce unserved demand by 50% and accrue benefits of Rs. 1,100 crores per year which will be about Rs. 13,000 crores by 1999.

**P**OWERGRID is aiming to strengthen the regional grids by providing missing links wherever necessary and is also planning to establish strong inter-regional ties so as to facilitate adequate energy exchanges between different regions. This step is aimed for ultimate formation of National Power Grid and at the same time it would enable much better utilization of surplus power in one region to meet the power deficit in another region.

**F**or formation of National Power Grid, concerted efforts are also needed to

rectify the imbalance of under-investment in transmission and distribution sector relative to generation capacity. To bridge the gap of investment in this nodal area a minimum need based programme outlay for POWERGRID in the Eighth Five Year Plan (1992-97) is Rs. 7,924 crores. This will also help in more effective evacuation of power and optimal utilisation of existing generation capacity.

### **POWERGRID : A TECHNOLOGY DRIVING PRIME MOVER**

**P**OWERGRID is endeavouring to pool the best possible expertise of transmission systems available in the country and all efforts are being made to induct advanced methodology and the latest engineering techniques in various facets of planning, designs, construction and maintenance of the transmission systems in the years to come. The thrust areas will be installation of static var compensators, shunt capacitors, use of helicopters in construction, monitoring and breakdown maintenance, hotline maintenance, etc. POWERGRID also looks forward to achieving engineering excellence through gas insulated substations, substation control and data acquisition (SCADA), satellite image processing for route survey, flexible AC transmission system etc. In its endeavor to upgrade technology, POWERGRID has joined hands with Central Power Research Institute (CPRI), Bangalore for enhancing R&D in transmission system development.

## POWER GRID CORPORATION OF INDIA LIMITED



The efforts on upgradation of technology and adoption of new technology will not only improve reliability of equipment and power supply but will also reduce the overall cost in design, planning, construction and O&M techniques. This is again aimed at making reliable power supply available to different Electricity Boards/Power Utilities at a minimal cost.

### POWERGRID: TANGIBILIZING SERVICE

The common perception about POWERGRID, as a service organisation, is to be recrystallized once again. Whereas, POWERGRID does not fall in any of the two extremes of the Product-Service continuum, it occupies a position somewhere close to the pure service extreme of the continuum. In product marketing strategy, there is a conspicuous attempt by every marketer to bundle some amount of services with the product with a view to give the product a cutting edge over its competing brands. Thus, in the case of product marketing, there is a conscious attempt at "intangibilizing the tangibles". This is more pronounced when there is an oligopolistic type of market with several similar strong brands in the market, without a technological shift or superiority in product development between any two products. In case of any service oriented organisation, be it in hospitality, entertainment, transportation or even power transmission industry, it will be marketing its services in many

instances in just the opposite manner—that is to say that there is a constant attempt by the service marketers as a strategy, to bundle some amount of tangible product into the intangible service. POWERGRID being primarily a service organisation will have to "tangibilize the intangibles". Some of our tangibilizable intangibles are: frequency, voltage levels, price (tariff), availability, consistency in delivery (reliability), etc. These parameters could be used as certain delivery (reliability), etc. These parameters could be used as certain tangibles for marketing of services in the POWERGRID context. We in POWERGRID are in the process of making our services as measurable as possible and to not only promote quality services, but to also continuously standardise and to optimally commit ourselves for the services to be provided to our beneficiaries.

As you are aware, in a purely service oriented company, the structure of decision making is just the opposite to that in normal company. The frontline executives and staff who are actually monitoring and delivering the services are appropriately empowered to take care of any service restoration in the event of failure of service of any type. The structure of decision making in a highly service oriented organisation, unlike the normal is like an inverse triangle, where the consumers or the beneficiaries occupy the top-heavy end, followed by the frontline executives/staff as the supporting staff to the consumers. The middle level managers occupy the middle of the inverse triangle, with the top

management being at the bottom-light end. The top management supports the entire organisation by issuing policy directives, by keeping the channels open for two-way information flow, and by delegating proper responsibility with adequate authority to provide the requisite quality service to the customers.

Friends, for POWERGRID, the beneficiaries and the other stake-holders occupy the top-heavy end within our organisational structure. The frontline executives and staffs are our internal customers, who are out in the field, constantly manning the substation, system co-ordination centres in the hierarchical structure are, the middle management, who are the major instruments in implementation as well as establishment of a strong two-way info-link between the frontline and the top management.

### QUALITY : ALSO OUR CORPORATE MISSION

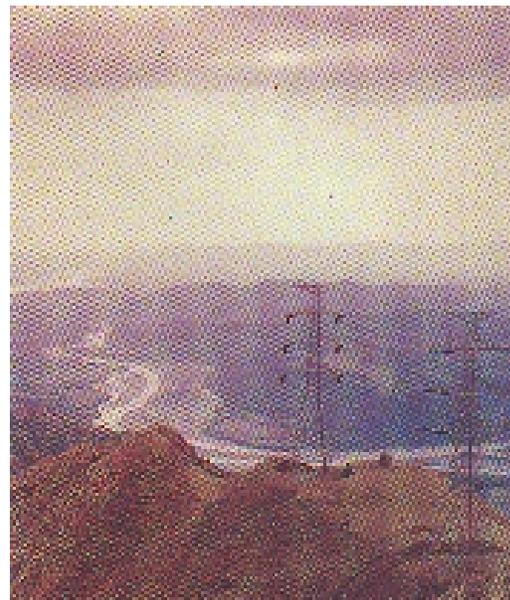
At POWERGRID, the activity **Transmission** has a much broader

POWERGRID being primarily a service organisation will have to "**tangibilize the intangibles**"

*"Quoted from the Text".*

connotation. By transmission, we mean "**to be continuously in the dynamic state of translating mission**". Our mission statement is also a quality policy statement of our organisation by another name. Since transmission, specially that of power, which is an instantaneously

## POWER GRID CORPORATION OF INDIA LIMITED



perishable product, can never be delivered or consumed without the quality aspect. In other words, transmission of power and quality of power supply are two sides of the same power-coin. POWERGRID, in its endeavour to excel, right from its inception, has been adopting, adapting and trying to be adept in preaching, practicing and pronouncing quality at various facets of its organisational activity. We should not aim only for ISO 9000 or any such kind of third party certification, but, we would have to continuously outbid ourselves in respect of our four M's, namely Man, Machine, Materials and Methods. We are already into reverse marketing and standardization of all our activities. Towards this end, we have already developed, and are constantly upgrading our in-house standardised Integrated File Referencing System, Quality Assurance System etc., which are at various stages of implementation. For, without Quality, POWERGRID cannot march forward bearing its mission in mind.

### **POWERGRID : AN UNCHANGING WILL TO CHANGE**

**P**OWERGRID conceives itself as a corporation, not merely as a transporter of power from one end point to another but as an enduring institution, and also as an agent of change. With its

unchanging will, to correct the imbalances between power supply and demand and with its strong motive force—the five thousand and odd minds constantly at work and dedicated to the service of the nation, and with the wind carrying our message far and wide for a change, no stone can be left unturned, no hurdle can be left to be crossed, no fort can remain unconquered ! For, nobody can defy the natural evolutionary process of development in any developmental process, and the formation of POWERGRID while restructuring the Indian Power Sector is only a tip of this iceberg of a bigger and greater changes, in the offing.

**G**entlemen, we being the members of POWERGRID, our role will not be limited to only bulk power transfer between states and regions or effective grid management through inter-utility commercial arrangements and load despatch and communication, but today we have to simultaneously and strongly, indulge in concept selling our business area and our positioning in the power sector vis-a-vis the country as a whole, and above all our sincere, visible and achievable action plan for the future.

**F**inally, I would take this opportunity to welcome our new director, Shri

S.K. Chawla, Director (Personnel) for joining our company. I am sure, his rich experience would further help integrate our company and translate our vision into reality. At the end, I would like to say that the days are not too far, when everyone say,:

**“WHEN IT IS TRANSMISSION, EVERY LINE LEADS TO POWERGRID.”**

**(R. K. Narayan)**  
Chairman and Managing Director

Place: New Delhi  
Date: September 23, 1993.



# Directors' Report

To  
The Members,

Gentlemen,

I am privileged to present to you on behalf of the Board of Directors, the 4th Annual Report on the operations of Power Grid Corporation of India Limited. (POWERGRID), together with the audited Statements of Accounts for the financial year 1992-93.

## POWERGRID : CORPORATION SYNERGY AT WORK

As you are aware, POWERGRID born as an outcome of the restructuring process of the Indian Power Sector, is evolving as an amalgamating force, pooling the best of transmission expertise available from various organizations in the power sector.

I take pleasure in informing you that in accordance with the Government's decision of transferring the transmission system from various Central/Centre-State Joint Venture organisations, an Ordinance was promulgated by Government of India on January 8, 1993, for the de-jure transfer of assets from National Thermal Power Corporation Limited (NTPC), National Hydro-electric Power Corporation Limited (NHPC) and North Eastern Electric Power Corporation Limited (NEEPCO) with effect from April 1, 1992. The Ordinance was replaced by the "NTPC, NHPC and NEEPCO, Transfer of Assets Bill 1993", which was passed both in the Lok Sabha and the Rajya Sabha on March 23, 1993 respectively. The bill has since

been assented to by the Hon'ble President of India, and has also been published in the Gazette of India on April 2, 1993 as Act No. 24 of 1993.

All related activities with respect to the physical transfer of transmission system assets from NTPC, NHPC and NEEPCO have already been initiated and are in advanced stage of completion. The physical verification of the assets with respect to the details as indicated in the Audited Balance Sheet as on March 31, 1992 has also been completed. The net value of assets transferred from these



400 KV D/V River Crossing Tower at Rajamundri.

organisations amounts to Rs. 4014.43 crores.

The transmission system associated with Neyveli Lignite Corporation Limited (NLC) has been taken over by POWERGRID on management basis with effect from December 1, 1992. Legal formalities related to the transfer of transmission system assets from NLC to POWERGRID with effect from April 1, 1992, have since been initiated, so as to effect the legislative action at the earliest.

## POWERGRID : THE NAME... THE MISSION

As you are aware, the name of your company has been changed from National Power Transmission Corporation Limited (NPTC) to POWER GRID CORPORATION OF INDIA LIMITED (POWERGRID) with effect October 23, 1992. The name has been changed for giving the corporation a distinct identity and keeping in view the organisation's corporate mission of ultimately establishing the national power grid.

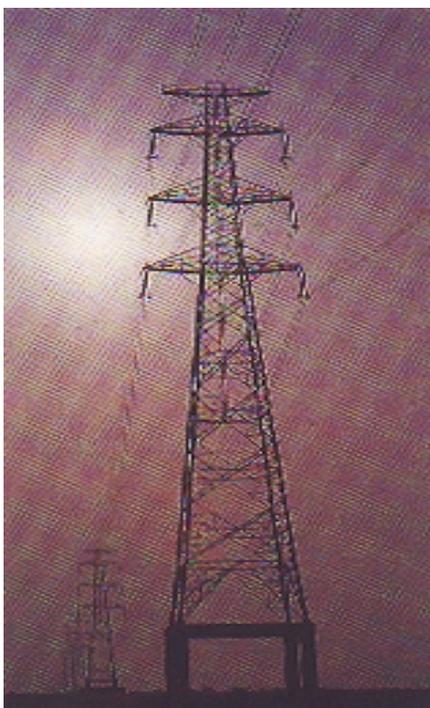
## FUND MOBILISATION FROM INTERNATIONAL FINANCIAL INSTITUTIONS

### World Bank

It is a matter of pride that the World Bank has extended a loan of US\$ 350.0 million directly to POWERGRID for its various projects and organisational studies, which has become effective from March 26, 1993. This loan is the first of its kind to be granted to any Central transmission Agency by the Bank, and will enable POWERGRID to implement the following important projects:

- (i) AC portion of Chandrapur HVDC Project, i.e. Ramagundam-Hyderabad 400 KV Second Circuit Transmission Line including Switchyard.
- (ii) Unified Load Despatch and Communication Project for Southern Region.
- (iii) Additional transmission system associated with Vindhyachal Super Thermal Power Project Stage-1.

## POWER GRID CORPORATION OF INDIA LIMITED



*A row of river crossing Tower of Rajasthan*

- (iv) Balance payments for Central Transmission Project (CTP) Stage-1 and Rihand Transmission Project for which original loans were close on March 31,1992 and December 31,1992 respectively.
- (v) Various technical studies viz., Institutional Development Study,power System Planning Study and Load DespaTch and Communication Study.

Along with this new loan of US\$ 350.0 million,World Bank has also approved the transfer of US\$ 575.9 million of World Bank loan utilised for the existing transmission projects and US\$ 78.6 million

for the on-going transmission project namely Farakka-11 and Talcher-1,of NTPC transferred to POWERGRID.The World Bank has also approved the transfer of a loan amounting to US\$ 475.0 million for the on-going Northern Region Transmission System Project (NRTS)of NHPC transferred to POWERGRID.

Thus, the total World Bank Loan, commitments to POWERGRID now amount to US\$ 1,479.5 million and it has also shown keen interest in financing other future projects of POWERGRID.

### Asian Development Bank (ADB)

In accordance with ADB's commitment during 1991-92,to provide financial assistance,as grant,to the tune of US\$ 600,000 for undertaking study on "Bulk Power and Transmission,Tariffs and Regulation", M/s ECC Inc., USA,have been appointed as consultants by ADB on February 24,1993,and the study has since been taken up with effect from March 1,1993.

A mission from Asian Development Bank (ADB) visited POWERGRID in January,1993,with a view to appraise the North-East Energy Conservation and Power Rehabilitation Project This project has number of components, including the Gas Fired Amguri Power Project,Bongaigaon Rehabilitation Project of Assam State Electricity Board Desptch Project of POWERGRID.The Bank had agreed to extend financing of about US\$ 250.0 for this project. Of this proposed loan POWERGRID is expected to get about US\$ 110.0 million towards its

proposed project in the North-Eastern Region.ADB has also shown interest in funding other projects of POWERGRID.

### Overseas Economic Corporation Fund of Japan (OECF)

The III tranche of OECF loan (II tranche for the transmission system associated with Gandhar Gas Based Power Project,amounting to JY 3.230 billion was provided to POWERGRID during this year.With this,OECF has so far sanctioned JY 7.115 billion for the Gandhar Transmission project. Kathalguri Transmission Project is also being implemented with OECF assistance amounting to JY 43.552 billion for both power station and transmission system.Transmission system associated with Faridabad Gas based Power Project has also been approved'in principle'by OECF for possible financial assistance.

### Other Financial Institutions and Banks

In addition to mobilisation of funds from the World Bank,ADB,OECF of Japan,as indicated above,efforts have also been made with some other International/National Financial Institutions/Bank,for mobilisation of additional funds for our various projects.Primarily,discussions have been held in this regard with European Investment Bank (EIB),Overseas Development Administration of U.K.(ODA),West Merchant Bank (WMB), Consortium of French Bankers,etc.

### FUNDS MOBILISATION FROM DOMESTIC FINANCIAL INSTITUTIONS

Though the Government of India had given permission to raise bonds (IIseries) to the



## POWER GRID CORPORATION OF INDIA LIMITED

extent of Rs.250 crores (Rs.100 crores as taxfree and Rs.150 crores as taxable), the Corporation could not raise any funds due to depressed capital market conditions.As an alternative,we approached Life Insurance Corporation of India Limited.(LIC),Unit Trust of India (UTI) and Industrial Development Bank of India (IDBI) for term loans to the extent of Rs.150 crores,Rs.100 crores and Rs 100 crores respectively.However,we could get sanction from LIC to the extent of Rs.20 crores only.Regarding balance pending application,we are pursuing the matter with the concerned financial institutions.

**I**ndustrial Financial Corporation of India (IFCI) had sanctioned Buyer's Credit to the extent of Rs.100 crores on March 29,1993 and the same will be utilised during the financial year 1993-94.We had approached nationalised banks for cash credit limits of Rs.100 crores (for FCI scheme)against which we have presently been sanctioned Rs.20 crores towards cash credit limit.Necessary documentation have been furnished for sanction of balance cash credit and co-acceptance limits.

### CAPITAL RE-STRUCTURING

**A**long with assets transfer, **POWERGRID** had to take over all the liabilities also,as per the original loans used for funding of the transmission lines.It was noticed that on this basis of asset transfer and associated loan values,the debt-equity ratio of the Corporation is quite adverse and is placed at 61:39 Such a

debt-equity ratio of **POWERGRID** at the beginning of its activities was likely to affect its smooth functioning, primarily due to inadequate internal resource generation and very limited net budgetary support now being available from the government.

**C**onsidering the critical importance of correcting this imbalance in the debt-equity ratio,Government of India was requested to convert a portion of transferred loans into equity so as to maintain debt-equity ratio of around 50:50, in accordance with the Government of India norms of funding power projects. This proposal has already been approved 'in principal' by the Finance Minister and formal approval of the Cabinet is expected shortly.

### PROJECT APPROVALS

**I**n this period,a major thrust was given by **POWERGRID** to seek investment decisions from Government of India for various transmission projects.During the last year, Feasibility Reports/Detailed Project Reports of fourteen transmission system project were submitted to the Government for approval.While final investment approvals have already been obtained for five schemes,for another six,decisions are expected shortly. Greater emphasis has been laid on Inter-Regional Links and Unified System Co-ordination & Control projects. Major Projects for which investment approvals were obtained during the year are, 800 KV Kishenpur-Moga Dulhasti Contingency Scheme,Chamera - Kishenpur-1 Transmission System, Kopili-1 Transmission System Extension Project etc.

## FINANCIAL PERFORMANCE

### Turnover and Profitability

**D**uring the year 1992-93,**POWERGRID** has achieved a turnover of Rs.634.06 crores of which Rs.562.34 crores was on account of transmission charges and Rs. 64.42 crores was on account of the sale of Chukha power purchased from the Royal Government of Bhutan,including wheeling charges for the same.The balance was from consultancy,project management,supervision fees and other income.The transmission charges include the billing made by NTPC and NHPC prior for transfer of assets from these Corporation.Whereas,the net post tax profit of your company for the financial year 1992-93 works out to an impressive Rs.236.61 crores,the outstanding dues from our customers,namely the State Electricity Boards/departments,amount to Rs.336.46 crores.This is one of the areas of concern to **POWERGRID** which needs urgent redressal. I shall be discussing the issue of dues outstanding later in the commercial status section of this report.



View of Static VAR Compensators at Kanpur Sub-station.



## POWER GRID CORPORATION OF INDIA LIMITED

### Budget Utilisation

The Revised Capital Budget Estimate (RE) for 1992-93 of POWERGRID was Rs. 592.88 crores, whereas actual expenditure during the year was only Rs.270.06 crores. The shortfall in budget utilisation to the extent of Rs.322.82 crores. is on account of the following reasons:

- (a) The contract for the Chandrapur HVDC Project could not be awarded during the financial year 1992-93, and consequently a sum of about Rs. 100 crores could not be utilised.
- (b) The Bonds to the extent of Rs. 250 crores could not be raised during the financial year 1992-93. As an

alternative source of funding, we could raise only Rs. 20 crores from LIC

### OPERATIONAL PERFORMANCE

As on March 31, 1993 a total of 22,228 Circuit Kms. of 400/220/132 KV transmission line and a total transformation capacity of 12,201 MVA, distributed over 39 sub-stations, are under operation. The operational performance of POWERGRID transmission system has been very impressive in all five power regions. overall regional average availability of transmission line during the year 1992-93 was as follows:

Region	Availability
Northern Region-I	98.42%
Northern Region-II	97.87%
Eastern Region	98.34%
North-Eastern Region	95.60%
Western Region	98.43%
Southern region	98.38%

**P**OWERGRID has developed adequate expertise for hotline maintenance of transmission line. This technique has been presently adopted in the Southern and Western Region. Further, POWERGRID has implemented a major programme for replacement of insulators of various transmission line in the North-Eastern Region, which was the main reason for





## POWER GRID CORPORATION OF INDIA LIMITED

transmission line breakdowns. These measures have enabled POWERGRID to achieve higher availability figures for the transmission system.

### CONSTRUCTION PERFORMANCE

a) Programme for the year

**F**or the year 1992-93, Central Electricity Authority (CEA) had indicated a programme of completion of 743.5 Circuit Kms. of transmission line stringing and commissioning of 2,130 MVA of transformation capacity. Against this target, POWERGRID has achieved 669.5 Circuit Kms. of stringing and 2,130 MVA of transformation capacity.

b) Projects commissioned

**D**uring the year 1992-93, POWERGRID has commissioned 10 transmission lines totalling to 1,568 Circuit Kms. This includes six 400KV transmission lines (1,176 Circuit Kms.) and four 220 KV transmission lines (392 Circuit Kms.). POWERGRID has also commissioned five 400/220 KV Auto-transformers totalling to 1,575 MVA of transformation capacity and four bus reactors totalling to 200 MVAR capacity. This includes commissioning of two new 400/220 KV Substations at Malerkotla and Maithon in Northern and Eastern Regions respectively.

**I**n addition to the above, five transmission lines totalling to 905 Circuit Kms., and three Auto-transformers totalling to 880 MVA of transformation capacity were also completed. However, the commissioning of these transmission lines/substations is to take place during 1993-94.



*Transmission lines passing over agricultural land.*

### 8th FIVE YEAR PLAN

POWERGRID had submitted to the Ministry of Power (MOP) a minimum need based programme for implementation of its new and on-going projects through the 8th plan period (1992-97), amounting to Rs. 7,924 crores. However, based on the allocation made, it is observed that a review needs to be undertaken so that the generation and the associated transmission project are provided with compatible funds. The Public Investment Board (PIB) has also suggested prioritisation of the projects to be taken - up/completed during the 8th Five Year Plan, keeping in view, the fund availability with the MOP. Efforts are being made by MOP for straightening this anomaly of funds for generation and associated transmission projects.

### COMMERCIAL STATUS

#### Billing and Collection of Dues

**P**OWERGRID started operating as a commercial organisation during the year. As the Ordinance transferring the transmission assets from NTPC, NHPC and NEEPCO with effect from April 1, 1992, was issued only on January 8, 1993, POWERGRID

started billing and collection for the transmission system formerly belonging to NTPC and NHPC with effect from January, 1993 and March, 1993 respectively. Billing for the ex-NEEPCO transmission system had already started from April, 1992 as per a separate understanding with NEEPCO.

**M**OUs regarding payment of transmission charges, on the same basis as was the case with NTPC and NHPC, by the State Electricity Boards (SEBs) were also signed during the year, with all beneficiaries of Western, Southern and Eastern Regions. In respect of Northern Region, POWERGRID has entered into MOUs with Uttar Pradesh SEB (UPSEB), Haryana SEB (HSEB), Rajasthan SEB (RSEB), which facilitates POWERGRID to raise bills and collect transmission charges from these SEBs. As per the MOUs, POWERGRID shall operate and maintain the transmission system belonging to it, for an efficient operation and secure power supply to these Boards. Most of the SEBs have agreed for payment of monthly transmission charges through letters of credit (LCs) and a large number of them are already making full/part payments

## POWER GRID CORPORATION OF INDIA LIMITED



through LCs. The total amount of LCs opened as on March 31 1993 amounts to Rs. 9.10 crores.

**A**nother important event was the signing of an agreement with Department of Power, Royal Government of Bhutan, regarding the purchase of Power from Chukha Hydro Electric Project, in April 1992.

POWERGRID has been billing the Eastern Region beneficiaries for Chukha power including wheeling charges for the Chukha Transmission System, since July 1992. and regularly releasing payments to Bhutan.

**P**OWERGRID is presently raising transmission charge bills on the SEBs according to the practices adopted by the above generating companies prior to the asset transfer. It has, in the process of transfer, also inherited a number of unresolved disputes from the generating companies. Disputes primarily concern

upward revision of tariffs on account of revised rates for depreciation and return on equity notified by Government of India. Certain minor amounts are also under disputes on account of enhancement of operation and maintenance cost component to account for increased cost due to inflation and charging of interest on Working Capital. Efforts are now on to resolve these long pending issues with the beneficiaries.

**P**OWERGRID, has initiated various measures for collection of dues from the beneficiary States. These measures include follow-up through letters and personal meeting by the Senior Executives of the Corporate Office, including the Chairman and Directors. Assistance of Ministry of power and other Government Agencies has also been sought for early liquidation of these outstanding dues.

### CONSULTANCY

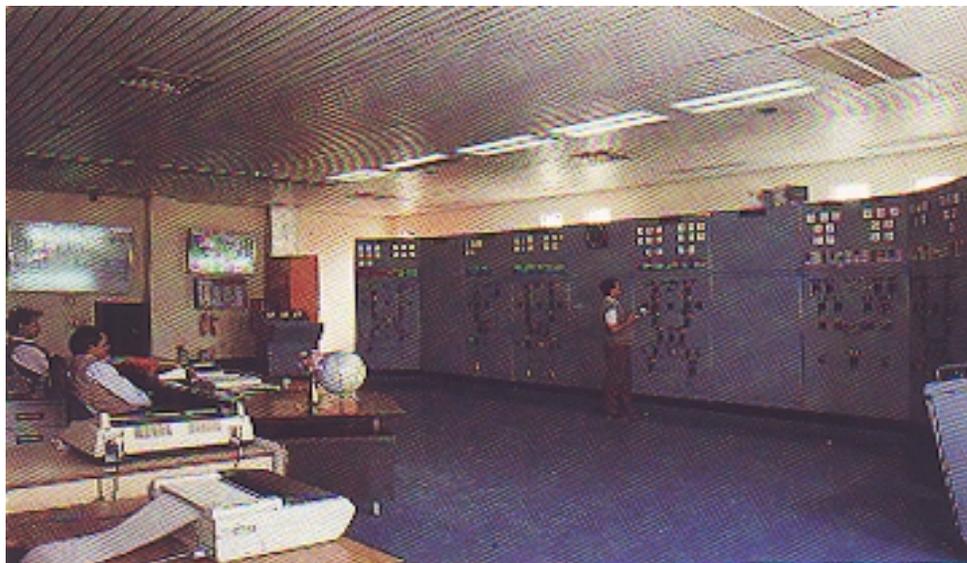
**P**OWERGRID continued to make concerted efforts to enhance its presence in the area of power transmission consultancy. The impact of our presence has been felt by many utilities on account of our participation in their tenders. The consultancy work awarded to us in the previous years are progressing to the satisfaction of our clients. During the year, the following new consultancy assignments were undertaken by POWERGRID:

1. Consultancy in respect of detailed design and engineering of two 400 KV sub-stations (Neelmangala and Talguppa) for Karnataka Electricity Board (KEB).
2. Construction of 132/11 KV sub-station at Yanam, for Electricity Department of the Government of Pondicherry.
3. Installation of load despatch and communication facilities in Pondicherry, for Electricity Department of the Government of Pondicherry.

**O**n the international front, persistent efforts are being made to market our expertise to different countries, by participating in various tenders and various other interactions.

### CONTRACTS AND MATERIALS

**D**uring the year 1992-93, a total of 63 contracts amounting to Rs. 308.65 crores for transmission lines and bay equipments, associated with Gandhar,



Control room of a 400 KV Sub-station.



## POWER GRID CORPORATION OF INDIA LIMITED

Talcher, Kathalguri, Doyang, Ramagundam, Dulhasti and Northern Region Transmission System were awarded. The contractual issues in respect of North-Eastern Region Transmission System were also amicably resolved, with the contracts being accepted by the respective contractors and also OECF according to its formal approval.

**I**n respect of Chandrapur HVDC (back-to-back system), bids were invited on ICB basis along with the financing package. The evaluation of the contractual, technical and financing packages were found to be very intricate and time consuming as the

above concept of inviting the proposals along with the financing package was adopted by POWERGRID for the first time. The above activities in respect of Chandrapur HVDC package had been successfully completed and the detailed terms and conditions, as also the prices etc. were finalised, pending Government approval.

**B**id documents for appointment of consultants on the basis of International Competitive Bidding (ICB) procedure in respect of various proposed World Bank funded projects were prepared and finalised in consultation with the World

Bank. In the case of System Coordination Project and Institutional Development Studies for POWERGRID, internationally recognised consultants have been short-listed and proposals have been invited. Further, bid documents in respect of supply, erection and pre-qualification of bidders have been prepared, as standard bid documents, keeping latest World Bank guidelines in mind.

**V**arious customs authorities have been questioning from time to time, the applicability of Concessional Customs Duty (CCD) under project imports in respect of transmission system materials



400 KV Substation at Kanpur.



## POWER GRID CORPORATION OF INDIA LIMITED

and equipments, This issue has been taken up by POWERGRID with Ministry of power, and some positive decision for enlarging the scope of the definition of “Power Project” to also include transmission and distribution projects for allowing CCD is expected soon.

### QUALITY ASSURANCE AND INSPECTION

With a view to ensure the quality of works executed in our projects, detailed Quality Assurance Programmes are drawn up with the respective supply and erection agencies. Inspection in accordance with the approved Quality Assurance Plans is carried out to ensure conformance with the above Quality Assurance Programme. In order to minimise the time involved in servicing inspection calls, Regional Inspection Offices have been opened during the year at Bangalore, Baroda, Bhopal, Calcutta, Madras and Nagpur. We have also initiated efforts in evolving the culture of Total Quality Management within the organisation.

### PERSONNEL AND ADMINISTRATION

POWERGRID started its operations with a team of talented and experienced manpower drawn from various sister organisations in the power sector, such as NTPC, NHPC and NEEPCO etc. During 1992-93, 303 employees of NLC were absorbed in POWERGRID. As POWERGRID has absorbed employees from organisations with a variety of pay structures, working levels etc. every care has been taken, while formulating the personnel policies, to build up an integrated structure with a distinct POWERGRID work-

culture. Another step in this direction was the induction of the first batch of 69 Engineering Executive Trainees (EETs) in January 1993. After the orientation programme, EETs have been placed for on-the-job training with power Engineers Training Society (PETS).

During the year, a forethought on the professional reinforcement of the organisation has led to the campus recruitment from reputed institutions such as the Indian Institutes of Management (IIMs) and the Indian Institute of Mass Communication (IIMC). There has been a creditable response in favour of POWERGRID from these premier institutions.

Since POWERGRID has got a workforce of about 5,800 employees spread all over the country, it has become imperative to initiate a manpower assessment study for providing a constructive direction to the manpower norms/modules, and 8th plan (1992-97) manpower requirements, the work was assigned to the National Productivity Council (NPC). NPC has completed the field study and their report is expected shortly.

### TRAINING AND HUMAN RESOURCE DEVELOPMENT INITIATIVES

On the merger of NTPC, NHPC, NEEPCO and NLC with POWERGRID, it was felt necessary to take some steps to amalgamate the manpower drawn from organisations with diverse environments and work cultures. Keeping the above aspects in view, a drive was launched by POWERGRID for imparting requisite

exposure to orient such work force into a uniform POWERGRID culture. Adequate steps are also being under taken to establish necessary infrastructural facilities for catering to the training needs of the employees.

### SECOND TOP MANAGEMENT CONFERENCE ON “STRATEGY FORMULATION”

In continuation with the First Top Management Conference which was held on December 17-18, 1991 and where the Corporate Mission of the organisation was defined and adopted, the follow-up Second Top Management Conference was held at the Surajkund Complex on September 25-26, 1992. The theme of the conference was, “NPTC - Strategies for Meeting the future Challenges”. A leading management expert acted as the facilitator. The Conference concluded on an optimistic note with the participants reaffirming their faith in the Corporate Mission developed earlier. While Relationship Management was recognised to be a very important factor for dealing with both facilitating and hindering forces, Financial Management was recognised as one of the critical line management responsibilities.

### INTER UTILITY COOPERATION

Since its inception, POWERGRID has been vigorously pursuing the policy of inter utility cooperation not only within the country but also across the borders in respect of sharing of general and specific information, in respect of areas of operation, policies, procedures, system etc. POWERGRID has emerged as a vast



## POWER GRID CORPORATION OF INDIA LIMITED

reservoir of information on worldwide electric sector/utility. We have developed a specialised in-house library of documents/publication/papers on wide ranging subject in respect of electric utilities spread across various countries such as U.K.(NGC), U.S.A.(NERC, FERC, OFFER, MAPP, NEEPOL, etc). New Zealand (Trans Power), France (EDF), Japan, Australia, etc., on topics such as organisational, operation, commercial, regulatory, managerial, etc.

### DEVELOPMENT OF FINANCIAL PROJECTION MODEL

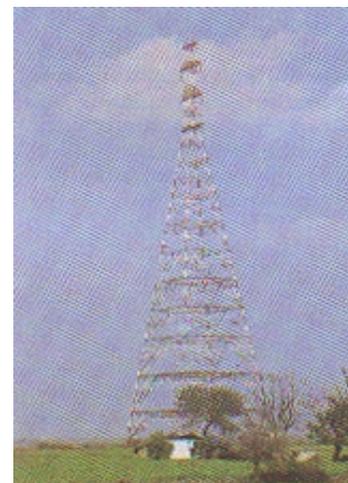
A customised computer based financial projection model has been developed for use by the various national and international funding organisations as well as to use it is a management tool for financial performance monitoring and timely decision making. This model is fully automatic, menu driven, user friendly and provides detailed financial projections. This model has been very well appreciated by the World Bank and other international financial agencies. The Model has been developed on PC-386 version and can provide details about financial performance for the next 10 years, with 1 provision for extension upto 15 years.

### OFFICE AUTOMATION AND MANAGEMENT INFORMATION SYSTEM

Management Systems and Information Collection, its processing and its dissemination is considered to be one of the vital areas for providing various inputs to the top management at the right time for timely decision making. Accordingly, a major drive has been initiated in the organisation for office automation. As a first step in building this system and data base, steps have been initiated to interconnect all departments at the Corporate Office for exchange of information through Local Area Network (LAN). At present, three departments have already been interconnected viz., Corporate planning, Corporate Monitoring and Load Despatch & Communication, including Chariman and other Directors' Secretariats through LAN. The other Departments will also be integrated into the System in due course of time. Presently, in the Corporate Office, about 140 PCs and one VAX computer, along with related peripherals and latest computer software are in operation.

### INFORMATION SYSTEMS PLANNING STUDY

Information is a critical resource which can provide corporate entities strategic advantage as well as foresight for meeting future challenges and opportunities. Information needs vary with corporate hierarchy, based on hierarchical functions. A leading management consultant was appointed by POWERGRID to conduct an



400 KV Single Circuit Tension Type Tower

Information Systems Planning (ISP) Study for POWERGRID. The purpose of the study was to provide a framework for designing, developing and implementation of information systems at the Corporate Office. The plan submitted by the Consultant describes the strategy in respect of hardware and software development/procurement, and its various other aspects such as operations, security, design, organisational training, etc.

### CONCERN FOR ENVIRONMENT

POWERGRID has kept pace with global environment awareness. Of all the major industrial projects, transmission project have been found to be most environment friendly. Rehabilitation & Resettlement (R&R) problems that may arise while executing large transmission system projects spread over the vast length and breadth of the country are practically brought to zero level by judicious/

## POWER GRID CORPORATION OF INDIA LIMITED



optimal alignment of transmission lines. As far as denudation of forest is concerned, utmost cautious approach is adopted by POWERGRID to ensure minimal impact on forestation. All efforts are made at the time of route selection to totally avoid forest areas. Wherever it becomes inevitable, infringements on forest areas are kept to the bare minimum.

Appreciating the concern for environment, a dedicated Environment Management Department has been constituted in POWERGRID in order to further bring down the impact of transmission lines on forests. Keeping in view the requirements stipulated by Government of India and various international financial institutions, it has now become obligatory to obtain environment clearance before new projects are posed for investment decision/ financial assistance. This department is located at the Corporate Office, and has environment experts to ensure that route alignment experts to ensure that route alignments cause bare minimum adverse ecological effects. For a streamlined coordination with various field officers, Nodal Officers have been appointed at regional headquarters, to interact with site officials and State Forest authorities.

A long-term plan for reducing the processing time required for obtaining environment clearance (s) for new transmission projects has been drawn-up by POWERGRID, and a proposal for development of a **Forest Bank** has been submitted to the Government for its consideration. Through this approach, land for compensatory afforestation will not be required to be identified and acquired on case to case basis, prior to project approval and instead an equivalent area from the Forest Bank could be off-set against various forest infringement (s). This process would streamline the procedure of seeking Government approval and also for timely implementation of various transmission system schemes of POWERGRID. In this context, it may be noted that as per the prevailing guidelines, in the case of transmission line of 220 KV class or below passing through forest, compensatory forestation is permissible on degraded land. However, in the case of Higher Voltage class lines, compensatory forestation is to be carried out on non-forest land, although, there is no additional loss on forest land in any way over and above the loss of vegetation, similar to that in the case of 220 KV class lines. This loss of vegetation is also restricted to the three metre wide corridor within the right of way and is also made good by natural regeneration once the construction work is completed. In view of above, our endeavour would be to take up this issue with the Government for streamlining and extending of the procedures applicable to 220 KV class to higher voltage class lines.

### ACKNOWLEDGEMENTS

The Board wishes to place on record its sincere appreciation of the invaluable assistance rendered by the Government of India, particularly the Ministry of Power, Ministry of Finance, Planning Commission, Ministry of Project Implementation, Department of Public Enterprises, Regional Electricity Boards, State Electricity Boards/ Departments, Central Electricity Authority and Central Generating Organisations.

The achievements of the Corporation are a result of combined, continuous, dedicated efforts and contributions put in by all the employees of the Corporation. The Directors take this opportunity to acknowledge this contribution.

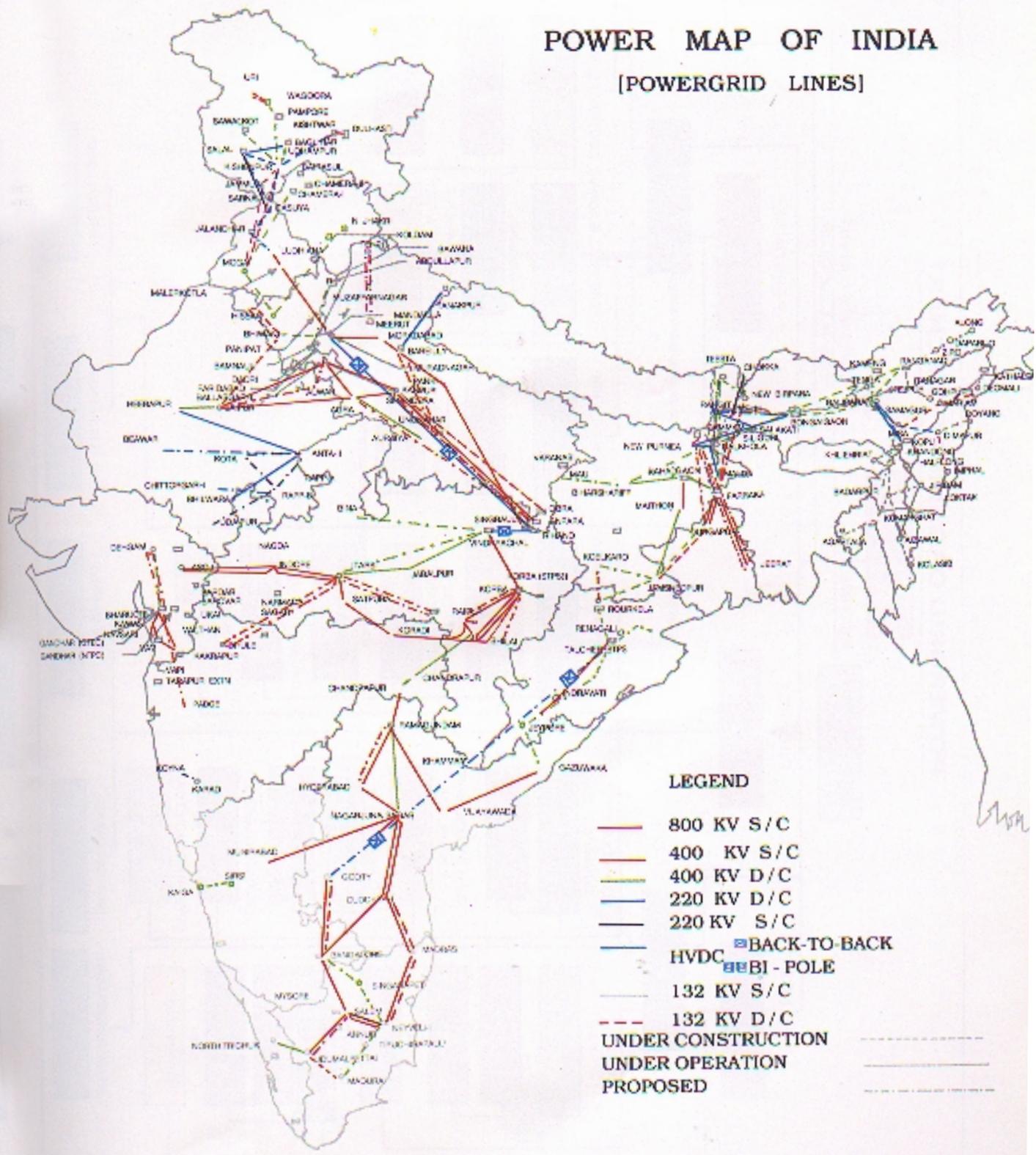
(R.K. Narayan)  
Chairman & Managing Director

New Delhi

Date : September 23, 1993

# POWER MAP OF INDIA

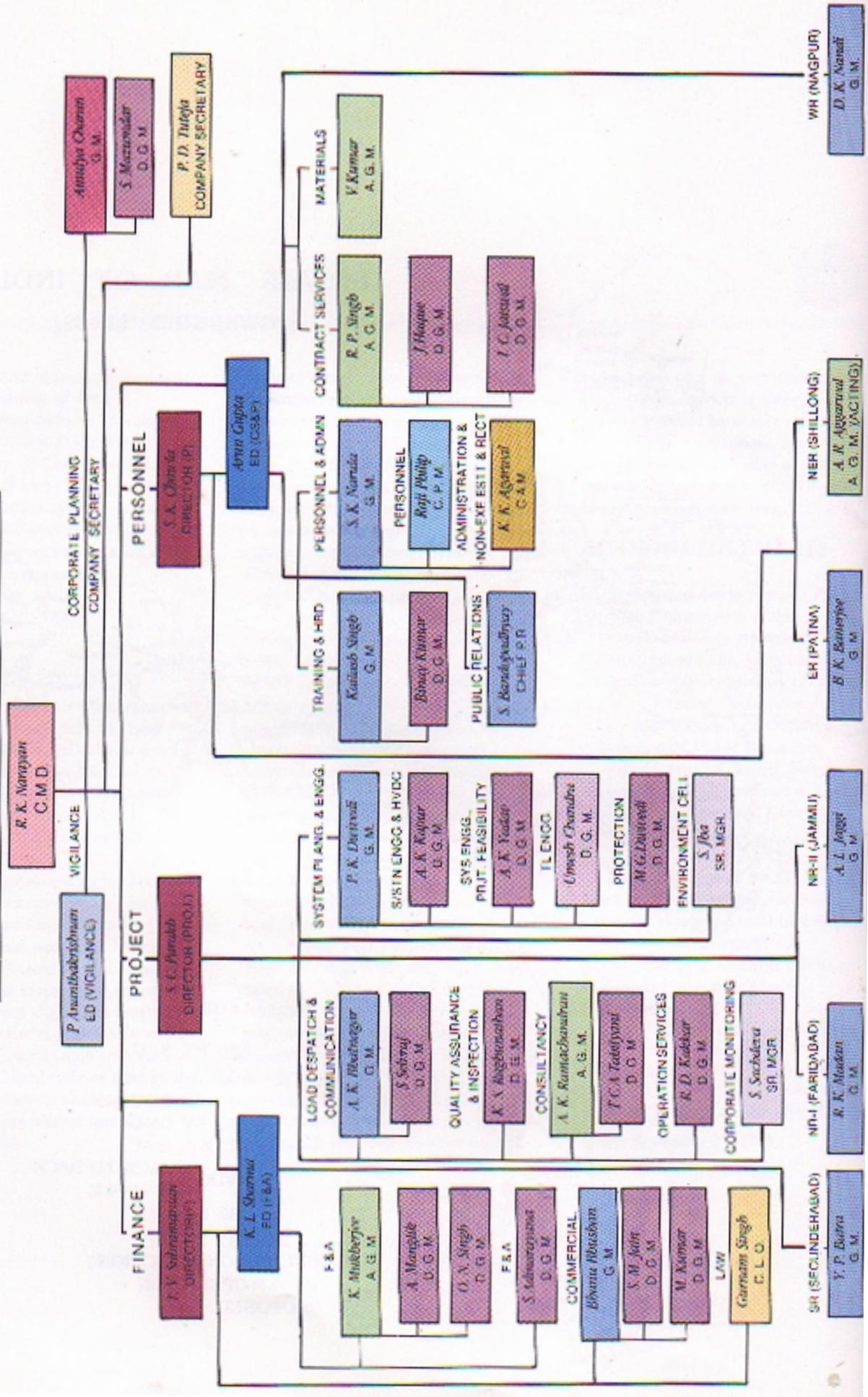
## [POWERGRID LINES]



### LEGEND

- 800 KV S/C
- 400 KV S/C
- - - 400 KV D/C
- 220 KV D/C
- - - 220 KV S/C
- □ HVDC BACK-TO-BACK
- ▣ HVDC BI-POLE
- 132 KV S/C
- - - 132 KV D/C
- ⋯ UNDER CONSTRUCTION
- UNDER OPERATION
- - - PROPOSED

# POWERGRID ORGANISATION CHART





## REVENUE EXPENDITURE ON SOCIAL OVERHEADS FOR THE YEAR ENDED 31.03.1993

(Rs. in Thousands)

Sl. No.	Particular	Land Scaping & waste land development	Township	Educanl. & School facilities	Medical facilities	Subsidised Transport	Social & cultural activities	Subsidised canteen	Total	Previous Year
1.	Payment to Employees			386	13457	250	45	1321	15459	5571
2.	Material Consumed		538			257			795	46
3.	Rates & Taxes		398			132			530	
4.	Welfare Expenses	1153	440	174	4389	1296	2059	967	10478	4331
5.	Others including Repair & Maintenance		4979			521	13		5513	1892
6.	Depreciation		9742							
7.	Sub total (1+2+3+4+5+6)	1153	16097	560	17846	2456	2117	2288	42517	11840
8.	Less Recoveries		754						754	74
9.	Net Expenditure (7-8)	1153	15343	560	17846	2456	2117	2288	41763	11766
10.	Previous Year	439	1864	106	5370	912	2343	732	11766	



## ACCOUNTING POLICIES

### 1.0 Methods of Depreciation :

- 1.1 (a) Depreciation is charged on straight line method as per rates prescribed under the Electricity (Supply) Act, 1948.  
(b) Depreciation on fixed assets is being provided from the year following that in which the assets become available for use. In respect of assets, where rate has not been laid down under the aforesaid Act, depreciation is provided on straight line method at the rates corresponding to the rates laid down under the Income Tax Act.  
(c) Depreciation is provided retrospectively for the effect of foreign exchange fluctuations relating to the fixed assets.
- 1.2 In the case of operating transmission system assets of NTPC, NHPC & NEEPCO transferred w.e.f. 01.04.1992 depreciation has been charged based on gross block as indicated in transferors books, so that the life of the assets as laid down under Electricity(Supply) Act is maintained.
- 1.3 Items of scientific appliances included under different heads of assets, plant and machinery and loose tools costing either Rs. 5000/- or less or with written down value of Rs. 5000/- or less as at the beginning of the year are charged off to revenue.

### 2.0 Treatment of Expenditure during Construction:

- 2.1 In respect of supply-cum-erection contracts, the value of supplies received at site is taken as Capital Work-in-Progress.
- 2.2 Incidental expenditure during construction (net) including corporate office expenses (allocated to the projects pro-rata to the annual capital expenditure) for the year is apportioned to capital work-in-progress on the basis of accretions thereto. Interest during construction is apportioned on the closing balance of Capital work-in-progress.
- 2.3 Capital expenditure not represented by assets is allocated to other capital assets, which are directly benefited from such expenditure. Where such identification is not possible, the expenditure is accounted for under incidental expenditure during construction in the year in which the work is completed.
- 2.4 Deposit work/cost plus contracts are accounted for on the basis of statement of account received from the contractors.
- 2.5 Claims for price variation in case of contracts are accounted for on acceptance.
- 2.6 Expenses for the year common to operation and construction activities are allocated to Profit & Loss Account and incidental expenditure during construction in proportion on transmission charges to annual capital outlay in the case of corporate office and transmission charges to accretion to Capital Work-in-Progress in the case of projects. In respect of assets commissioned, the interest on loans for capital works, chargeable to profit and loss account is ascertained on the basis of approved debt equity ratio for the project irrespective of actual availment of the loan and equity which is reallocated in the year of conversion of debt/equity to conform to the approved norms for the said project.

### 3.0 Conversion or Translation of Foreign Currency Items:

- 3.1 Foreign Currency loan/deposits are translated with reference to the rates of exchange ruling at the year end. Cumulative difference is transferred to capital work-in-progress/fixed assets.

### 4.0 Valuation of Inventories:

- 4.1 Valuation of inventories is effected on monthly weighted average method based on actual costs.
- 4.2 Value of scrap other than steel-scrap adjusted in the accounts as and when sold.

### 5.0 Treatment of retirement Benefits

- 5.1 Gratuity is provided on actuarial valuation basis

### 6.1 Recognition of Income from consultancy

- 6.1 Income from Consultancy service is being accounted for on the basis of actual progress/technical assessment of work executed.



## ACCOUNTING POLICES (Contd.)

### 7.0 Valuation of Fixed Assets:

- 7.1 In the case of commissioned assets, where final settlement of bills with contractor is yet to be effected, capitalisation is made on provisional basis subject to necessary adjustment in the final settlement.
- 7.2 Assets and Systems common to more than one Transmission System are capitalised on the basis of engineering estimates/assessments.
- 7.3 Net pre-commissioning expenditure is adjusted directly in the cost of related assets and systems.

### 8.0 Miscellaneous:

- 8.1 Expenses on training and recruitment Research and Development are charged to revenue in the year of incurrence.
- 8.2 Pre-paid expenses and prior-period expenses and income of items of Rs. 5,000/- and below are charged to natural heads of accounts.
- 8.3 Interest/surcharge recoverable from debtors and on advance to suppliers as well as warranty claims/Liquidated damages are accounted for on receipt/acceptance.
- 8.4 Bond issue expenses are being written off over maturity period of bonds.



# BALANCE SHEET

As at 31st March, 1993

(Rs.in Thousands)

	Schedule No.		As at 31st March, 1993	As at 31st March, 1992
<b>SOURCES OF FUNDS</b>				
Shareholder's Funds				
Capital	1		1849,17,20	61,10,00
Reserves and Surplus	2		<u>234,79.01</u>	
			2083,96,21	61,10,00
Loan Funds				
Secured Loans	3		51,22,09	
Unsecured Loan			<u>2634,61.70</u>	237,71,48
			<u>2685.83.79</u>	<u>237,71,48</u>
Total			<u>4769.80.00</u>	<u>298,81,48</u>
<b>APPLICATION OF FUNDS</b>				
Fixed Assets				
Gross Block	4	3520,55,61		5,56,68
Less: Depreciation		<u>141,58.65</u>		3,35
Net Block			3378,96,96,	5,53,33
Capital work-in-progress	5		754,12,23	63,99,51
Construction stores and advances	6		<u>294,06.93</u>	10,03,67
Investment	7		4427,16,12	79,56,51
			10	---
<b>Current Assets, Loan and Advances</b>	<b>8</b>			
Inventories		49,76,14		75,55
Sundry debtors		336,46,24		---
Cash and bank balances		110,84,61		73,36,15
Other current assets		4,68,25		2,07,98
Loan and Advances		<u>176,25.45</u>		179,44,79
			678,0069	255,64,47
Less: Current Liabilities and Provision	9			
Liabilities		349,17,63		55,62,58
Provision		<u>1,64.74</u>		32,96
			<u>350,82.37</u>	55,95,54
Net Current Assets			327,18,32	199,68,93
Miscellaneous expenditure (to the extent not written off or adjusted) profit and loss Account	10		15,45,46	17,73,83
			----	<u>1,82.21</u>
Total			<u>4769.80.00</u>	<u>298,81,48</u>
Contingent Liabilities	11		<u>45.81.55</u>	---
Notes on accounts	17			

Schedules 1 to 17 and Accounting policies from integral part Accounts:

(P.D.TUTEJA)  
Secretary

(K.L.SHARMA)  
E.D. ( Finance)

(S.C.PARAKH)  
Director (Projects)

(R.K.NARYAN)  
Chairman & Managing Director

For Batra Sapra & Company  
Chartered Accountants

As per our report of even date  
For Laxminiwas & Jain  
Chartered Accountants

For Sri Associates  
Chartered Accountants

Place : New Delhi  
Date : 7th September, 1993

(A. L. BATRA)  
Partner

(S. K. JAIN)  
Partner

(I. PASHA)  
Partner



# PROFIT & LOSS ACCOUNT

For the year ended 31st March, 1993

(Rs.in Thousands)

	Schedule No		For the year Ended 31st March, 1993	For the year Ended 31st March, 1992
<b>INCOME</b>				
Transmission Charges			562,33,79	----
Sale of Electric Powe			64,42,30	----
Consultancy,Project Managemnt and Supervision Fees			4,40,49	21,34,19
Other Income	12		<u>2,89,43</u>	<u>33,48</u>
			<u>634,06,01</u>	<u>21,67,67</u>
<b>EXPENDITURE</b>				
Purchase of Electric Power			36,60,46	----
Transmission and Administration Expenses	13	74,72,00		26,39,23
Depreciation		138,80,44		2,39
Prior Period adjustment (Net)	16	<u>46,48</u>		1,15
			213,98,92	26,42,77
Less: Incidental expenditure during construction transferred to capital Work-in-progress	15A	<u>19,40,65</u>		3,11,05
			194,58,27	23,31,72
Preliminary Expenses written off			<u>40,14</u>	----
			231,58,87	23,31,72
Profit (before Interst & Finance charges)			402,47,14	- 1,64,05
Interest and finance charges	14		229,32,97	1,76,82
Less: Interest & finance charges transferred to capital Work-in-Progress	15B	<u>63,47,05</u>		1,58,66
			165,85,92	18,16
Profit for the year (before tax)			236,61,22	- 1,82,21
Provision for Taxation			----	----
Profit after Tax			236,61,22	----
Balance profit from last year's account			- 1,82,21	----
Transfer to Bonds Redemption Reserve			13,00,00	----
Transfer to General Reserve			200,00,00	----
Balance of profit carried over to Balance Sheet			<u>21,79,01</u>	<u>- 1,82,21</u>

(P.D.TUTEJA)  
Secretary

(K.L.SHARMA)  
E.D. ( Finance)

(S.C.PARAKH)  
Director (Projects)

(R.K.NARYAN)  
Chairman & Managing Director

For Batra Sapra & Company  
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As per our report of even date  
For Laxminiwas & Jain  
Chartered Accountants

For Sri Associates  
Chartered Accountants

(A. L. BATRA)  
Partner

(S. K. JAIN)  
Partner

(I. PASHA)  
Partner



## CAPITAL SCHEDULE - 1

(Rs. in Thousands)

	As at 31st March, 1993	As at 31st March, 1992
<b>AUTHORISED</b>		
5,00,00,000 (Previous year 5,00,00,000) equity shares of Rs. 1000/- each	<u>5000,00,00</u>	<u>5000,00,00</u>
<b>ISSUED, SUBSCRIBED AND PAID-UP</b>		
7,11,000 (Previous year 5,11,000) equity shares of Rs. 1000/- each fully paid up	71,10,00	51,10,00
Share capital deposit	<u>1778,07,20</u>	<u>10,00,00</u>
Total	<u>1849,17,20</u>	<u>61,10,00</u>

## RESERVES AND SURPLUS SCHEDULE - 2

(Rs. in Thousands)

	Balance As At 31st March, 1992	Addition	Balance As At 31st March, 1993
General Reserve	-	200,00,00	200,00,00
Bonds Redemption Reserve	-	13,00,00	13,00,00
Surplus as per Profit & Loss Account	-	21,79,01	21,79,01
Total	-	<u>234,79,01</u>	<u>234,79,01</u>

## LOAN FUNDS SCHEDULE - 3

(Rs. in Thousands)

	As at 31st March, 1993	As at 31st March, 1992
<b>SECURED LOANS</b>		
Transferred by Act 24 of 1993. From LIC (secured by Mortgage of Kopili Additional, Doyang and Gohpur - Itanagar Transmission system)	19,90,00	-
Amount payable to NHPC-Bonds 'B' series (to the extent allocated) redeemable non-convertible Bonds of Rs. 1000 each redeemable at par		
a) On 11th December 1994 (interest @ 13% per annum)	12,18,85	-
b) On 11th December 1997 (interest @ 9% per annum)	<u>19,13,24</u>	-
Secured by equitable Mortgage of Assets of Chukha transmission Systems	<u>31,32,09</u>	-
-Total Secured Loans	51,22,09	-



## LOAN FUNDS SCHEDULE - 3 (contd.)

(Rs. in Thousands)

	As at 31st March, 1993	As at 31st March, 1992
<b>UNSECURED LOANS</b>		
16.75%/17% taxable 7 Years Redeemable non-Convertible Bonds of Rs. 1000/- each redeemable at per (earliest Date of redemption is 10th/13th March 1999)	100,00,00	100,00,00
Interest accrued and due	17,00	-
9% Tax Free 10 Years redeemable Non-convertible Bonds of Rs. 1000/- each redeemable at per (earliest Date of redemption is 10th March 2002)	100,00,00	100,00,00
Loan from Life Insurance Corporation of India	19,90,00	-
Loan from International Bank for Reconstruction and Development (guaranteed by Govt. of India)	78,80,22	-
	298,87,22	200,00,00
<b>Loan transferred by Act 24 of 1993</b>		
a) i) Loan from Govt. of India	798,27,80	-
ii) Interest accrued and due	7,00,12	-
b) Industrial Bank of Japan and Nippon Life Insurance	34,86,00	-
c) Syndicated Loan from Industrial Bank of Japan and other Japanese Banks/ Financial Institutions	232,62,00	-
d) Exim Bank, Japan	277,67,47	-
e) Skandinorviska Enskilda Banken I, Sweden	79,10,30	-
f) Skandinorviska Enskilda Banken II, Sweden	279,68,36	-
g) Export Development Corporation, Canada	50,60,31	-
h) Payable to NTPC on a/c of Bonds	3,81,38,00	-
i) Payable to NHPC on a/c of Bonds	1,47,70,37	-
j) Loan from Unit Trust of india	9,12,27	-
	2298,03,00	-
<b>Unsecured Loan from others</b>		
a) National Thermal Power Corporation Limited	9,70,00	9,70,00
b) Nathpa Jhakhri Power Corporation Limited	10,00,00	10,00,00
c) Nuclear Power Corporation	10,01,48	18,01,48
	37,71,48	37,71,48
<b>Total Unsecured Loans</b>	2634,61,70	237,71,48
<b>GRAND TOTAL (SECURED+ UNSECURED)</b>	2685,83,79	237,71,48



## FIXED ASSETS (TRANSMISSION LINES)

### SCHEDULE - 4A

(Rs. in Thousands)

	Gross Block			As at 31.03.93	Depreciation up to 31.03.93	Net Block	
	As at 31.03.92	Additions	Sales/Adj.			As at 31.03.93	As at 31.03.92
<b>LAND</b>							
(Including Development)							
Freehold	30,67	20,97,83	- 8,94	21,37,44	-	21,37,44	30,67
Leasehold	-	4,11,82	3,26	4,08,56	10,30	3,98,26	-
Unclassified	-	2,90,29	-	2,90,29	-	2,90,29	-
Roads,Bridges, Culverts,&Helipads							
Building	89	10,27,30	-12,63	10,40,82	17,73	10,23,09	89
Main Plant	3,78	12,93,16	- 77	12,97,71	40,16,	12,57,55	3,78
Others	5,83	19,74,82	- 32,22	20,12,87	78,13	19,34,74	5,83
Temporary erection	4,35	56,70	- 2,69	63,74	18,59	45,15	4,35
Water Supply, drainage & sewerage	1,66	2,83,98	- 7,07	2,92,71	10,81	2,81,90	1,66
Plant & Machinery	1,22,69	3138,00,54	-164,37,60	3303,60,83	134,17,80	3169,43,03	1,22,69
Construction and Workshop equipment	91,02	3,53,84	- 23	4,45,09	24,88	4,20,21	91,02
Electrical Installation	-	66,48,61	- 3,85	66,52,46	2,76,45	63,76,01	-
Vehicles	2	1,60,98	4,88	1,56,12	60,48	95,64	2
Speed Boats	-	2,47	-	2,47	-	2,47	-
Furniture,Fixtures and Other equipment	35,95	3,56,28	47,76	3,44,47	27,22	3,17,25	35,95
EDP & WP Machines	27	39,62	8,79	31,10	4,06	27,04	27
Laboratory and Workshop equipment	-	1,15,26	-	1,15,26	14,01	1,01,25	-
<b>Total (A)</b>	<b>2,97,13</b>	<b>3289,13,50</b>	<b>-164,41,31</b>	<b>3456,51,94</b>	<b>140,00,62</b>	<b>3316,51,32</b>	<b>2,97,13</b>

## FIXED ASSETS ( RESEARCH & DEVELOPMENT)

### SCHEDULE - 4B

(Rs. in Thousand)

	Gross Block			As at 31.03.93	Depreciation up to 31.03.93	Net Block	
	As at 31.03.92	Additions	Sales/Adj.			As at 31.03.93	As at 31.03.92
Buildings-Others	-	66,12	-	66,12	-	66,12	-
<b>Total (B)</b>	<b>-</b>	<b>66,12</b>	<b>-</b>	<b>66,12</b>	<b>-</b>	<b>66,12</b>	<b>-</b>



## FIXED ASSETS (OFFICE COMPLEX) SCHEDULE - 4C

(Rs. in Thousands)

	Gross Block			Depreciation up to 31.03.93	Net Block		
	As at 31.03.92	Additions	Sales/Adj.		As at 31.03.93	As at 31.03.92	
LAND (Including Development							
Freehold	-	9,04	-	9,04	-	9,04	-
Leasehold	-	29,37	-	29,37	1,19	28,18	-
Building-Others	-	4,26,56	-	4,26,56	7,82	4,18,74	-
Temporary erection	77	68,44	-	69,21	17	69,04	77
Electrical Installation	-	28,29	-	28,29	6	28,23	-
Vehicles	7,32	23,29	81	29,80	7,39	22,41	6,33
Furniture, Fixtures & Other equipment	1,41,16	3,65,17	24,91	4,81,42	33,41	4,48,01	1,39,73
EDP & WP Machines	23,40	2,06,66	3,08	2,26,98	4,47	2,22,51	22,47
<b>Total (C)</b>	<b>1,72,65</b>	<b>11,56,82</b>	<b>28,80</b>	<b>13,00,67</b>	<b>54,51</b>	<b>12,46,16</b>	<b>1,69,30</b>

## FIXED ASSETS (TOWNSHIP ASSETS) SCHEDULE - 4D

(Rs. in Thousands)

	Gross Block			Depreciation up to 31.03.93	Net Block		
	As at 31.03.92	Additions	Sales/Adj.		As at 31.03.93	As at 31.03.92	
LAND (Including Development							
Freehold	-	36,40	-	36,40	-	36,40	-
Leasehold	-	57,88	-	57,88	1,84	56,04	-
Roads, bridges, culverts & helipads	10,32	3,68,10	-8,66	3,87,08	7,12	3,79,96	10,32
Buildings-Others	51,52	37,58,19	3,83	38,05,88	65,71	37,40,17	51,52
Temporary erection	6,34	8,55	-	14,89	3,38	11,51	6,34
Water supply, drainage & sewerage	1,27	4,37,84	-3,76	4,42,87	9,27	4,33,60	1,27
Electrical Installation	5,73	2,18,65	-3,99	2,28,37	12,04	2,16,33	5,73
Vehicles	-	4,51	-	4,51	1,32	3,19	-
Furniture, fixtures & Other equipment	11,72	46,75	1,68	56,79	2,73	54,06	11,72
Hospital Equipment	-	12	-	12	-	12	-
School Equipment	-	2,09	-	2,09	11	1,98	-
<b>Total (D)</b>	<b>86,90</b>	<b>49,39,08</b>	<b>-10,90</b>	<b>50,36,88</b>	<b>1,03,52</b>	<b>49,33,36</b>	<b>86,90</b>



## FIXED ASSETS SUMMARY) SCHEDULE - 4

(Rs. in Thousands)

	Gross Block			As at 31.03.93	Depreciation up to 31.03.93	Net Block	
	As at 31.03.92	Additions	Sales/Adj.			As at 31.03.93	As at 31.03.92
LAND							
(Including Development							
Freehold	30,67	21,43,27	- 8,94	21,82,88	-	21,82,88	30,67
Leasehold	-	4,99,07	3,26	4,95,81	13,33	4,82,48	-
Unclassified	-	2,90,29	-	2,90,29	-	2,90,29	-
Roads, Bridges, Culverts, & Helipads	11,21	13,95,40	- 21,29	14,27,90	24,85	14,03,05	11,21
Building							
Main Plant	3,78	12,93,16	- 77	12,97,71	40,16,	12,57,55	3,78
Others	57,35	62,25,69	- 28,39	63,11,43	1,51,66	61,59,77	57,35
Temporary erection	11,46	1,33,69	- 2,69	1,47,84	22,14	1,25,70	11,46
Water Supply, drainage & sewerage	2,93	7,21,82	- 10,83	7,35,58	20,08	7,15,50	2,93
Plant & Machinery	1,22,69	3138,00,54	-164,37,60	3303,60,83	134,17,80	3169,43,03	1,22,69
Construction and							
Workshop equipment	91,02	3,53,84	- 23	4,45,09	24,88	4,20,21	91,02
Electrical Installation	5,73	68,95,55	- 7,84	69,09,12	2,88,55	66,20,57	5,73
Vehicles	7,34	1,88,78	5,69	1,90,43	69,19	1,21,24	6,35
Speed Boats	-	2,47	-	2,47	-	2,47	-
Furniture,Fixtures and							
Other equipment	1,88,83	7,68,20	74,35	8,82,68	63,36	8,19,32	1,87,40
EDP & WP Machines	23,67	2,46,28	11,87	2,58,08	8,53	2,49,55	22,74
Laboratory and Workshop equipment	-	1,15,26	-	1,15,26	14,01	1,01,25	-
Hospital equipment	-	12	-	12	-	12	-
School equipment	-	2,09	-	2,09	11	1,98	-
<b>Grand Total</b>	<b>5,56,68</b>	<b>3350,75,52</b>	<b>-164,23,41</b>	<b>3520,55,61</b>	<b>141,58,65</b>	<b>3378,96,96</b>	<b>5,53,33</b>
Previous Year	23,62	5,33,06	-	5,56,68	3,35	5,53,33	
Depreciation for the year						138,80,44	2,39



## CAPITAL WORK IN PROGRESS (TRANSMISSION LINES) SCHEDULE - 5A

(Rs. in Thousands)

	Balance As at 31st March, 1992	Additions by Transfer of Assets	Additions During the year	Adjustments	Capitalised During the year	Balance As at 31st March, 1993
Development of Land	12,46	3,72,82	2,49,86	10	1,87,07	4,47,97
Road,bridges , culverts & helipads	8,87	2,87,51	2,39,78	7,59	1,70,63	3,57,94
Buildings (other)	65,90	12,14,07	7,15,61	10,98	5,34,00	14,50,60
Temporary erection	2,37	23,32	29,63	1,47	2,25	51,60
Water supply,drainage and sewerage	27	43,56	35,34	3,83	20,05	55,29
<b>PLANT &amp; MACHINERY</b> (including associated civil works)	9,44,14	122,46,53	142,44,14	7,82,23	47,27,03	219,25,55
On own account & on supply-cum- erection contract	51,79,62	472,91,53	171,03,47	- 8,44,74	254,54,35	449,65,01
Electrical installations	-	96,49	78,22	1,17	49,31	1,24,23
Furniture fixtures & other office equipment	-	-	4,41	-	4,41	-
Survey, Investigation,Consultancy & Supervision Charges	-	6,11,87	7,02,69	-	-	13,14,56
Survey,& Soil Investigation	6,53	1,41,21	65,97	1,67	-	2,12,04
Difference in Exchange on foreign Loans						
Skadinorviska Enskilda Banken-I	-	-	- 4,11	-	- 4,11	-
Skadinorviska Enskilda Banken-II	-	23,41	5,01,56	-	5,24,97	-
Industrial Bank of Japan and Nippon Life Insurance	-	2,81,31	4,64,00	1,66,00	5,79,31	-
Syndicated Loan from Industrial Bank of Japan and other Japanese Banks/Financial Institutions	-	15,35,66	30,96,00	14,89,40	25,29,72	6,12,54
EXIM Bank, Japan	-	76,64,65	38,30,00	20,95,63	79,82,56	14,16,46
Export Development Corporation,Canada	-	-	23,76	-	-	23,76
<b>Total (A)</b>	<b>62,20,16</b>	<b>718,33,94</b>	<b>413,80,33</b>	<b>37,15,33</b>	<b>427,61,55</b>	<b>729,57,55</b>

## CAPITAL WORK IN PROGRESS (RESEARCH & DEVELOPMENT) SCHEDULE - 5B

(Rs. in Thousands)

	Balance As at 31st March, 1992	Additions by Transfer of Assets	Additions During the year	Adjustments	Capitalised During the year	Balance As at 31st March, 1993
Building (Others)	-	12,16	53,96	-	66,12	-
<b>Total (B)</b>	<b>-</b>	<b>12,16</b>	<b>53,96</b>	<b>-</b>	<b>66,12</b>	<b>-</b>



## CAPITAL WORK IN PROGRESS (OFFICE COMPLEX) SCHEDULE - 5C

(Rs. in Thousands)

	Balance As at 31st March, 1992	Additions by Transfer of Assets	Additions During the year	Adjustments	Capitalised During the year	Balance As at 31st March, 1993
Buildings (others)	-	59,09	83,95	-	73,74	69,30
Temporary erection	17,07	-	94,58	-	1,11,65	-
Electrical installations	-	15	-	-	-	15
Furniture Fixture & other office equipment	-	-	2,99	-	-	299
<b>Total (C)</b>	<b>17,07</b>	<b>59,24</b>	<b>1,81,52</b>	<b>-</b>	<b>1,85,39</b>	<b>72,44</b>

## CAPITAL WORK IN PROGRESS (TOWNSHIP ASSETS) SCHEDULE - 5D

(Rs. in Thousands)

	Balance As at 31st March, 1992	Additions by Transfer of Assets	Additions During the year	Adjustments	Capitalised During the year	Balance As at 31st March, 1993
Development of Land	-	-	1,01	-	-	1,01
Road, bridges, culverts & helipads	3,64	1,55,19	1,13,84	8,66	45,72	2,18,29
Buildings (others)	95,73	10,60,80	10,77,59	8,37	4,53,46	17,72,29
Temporary erection	-	17,28	15,03	-	-	32,31
Water supply drainage and sewerage	7,99	1,08,64	87,94	5,15	11,80	1,87,62
Electrical installations	9,11	89,54	64,42	4,00	47,83	1,11,24
<b>Total (D)</b>	<b>1,16,47</b>	<b>14,31,45</b>	<b>13,59,83</b>	<b>26,18</b>	<b>5,58,81</b>	<b>23,22,76</b>

## CAPITAL WORK IN PROGRESS ( INCIDENTAL EXPENDITURE DURING CONSTRUCTION) SCHEDULE - 5E

(Rs. in Thousands)

	Balance As at 31st March, 1992	Additions by Transfer of Assets	Additions During the year	Adjustments	Capitalised During the year	Balance As at 31st March, 1993
Incidental expenditure during construction	45,81	122,38,62	81,45,54	-	-	204,29,97
Less: Allocated to Capital Work in progress	-	-	203,70,49	-	-	203,70,49
<b>Total (E)</b>	<b>45,81</b>	<b>122,38,62</b>	<b>- 122,24,95</b>	<b>-</b>	<b>-</b>	<b>59,48</b>
<b>GRAND TOTAL (A+B+C+D+E)</b>	<b>63,99,51</b>	<b>855,75,41</b>	<b>307,50,69</b>	<b>37,41,51</b>	<b>435,71,87</b>	<b>754,12,23</b>
Previous Year	34,02	-	65,77,57	-	2,12,08	63,99,51



## CONSTRUCTION STORES & ADVANCES SCHEDULE - 6

(Rs. in Thousands)

		As at 31st March, 1993	As at 31st March, 1992
Construction Stores (at cost)			
Steel	40,80,07		16
Cement	2,81,19		19,86
Others	147,06,92		5,39,38
		190,68,18	5,59,40
Advance for Capital Expenditure			
Secured	86,24		9,27
Unsecured, considered good against Bank guarantees	76,77,89		35,26
Others	25,74,62		3,99,74
		103,38,75	4,44,27
Total		294,06,93	10,03,67
Construction stores include Materials in transit, under inspection and with contractors	81,32,30		4,86,47

## INVESTMENTS SCHEDULE - 7

(Rs. in Thousands)

	As at 31st March, 1993	As at 31st March, 1992
Other than trade investments (Unquoted at cost)		
500 Fully paid up shares of Rs. 10/- each in Employees Co-operative Society Limited. Bhadravati.	5	-
500 Fully paid up shares of Rs. 10/- each in Employees Co-operative Society Limited. Itarsi.	5	-
Total	10	-



## CURRENT ASSETS, LOANS AND ADVANCES SCHEDULE - 8

(Rs. in Thousands)

		As at 31st March, 1993	As at 31st March, 1992
<b>Inventories</b>			
(At cost as certified by Management)			
Loose tools	22,87		9,63
Consumable stores	31,37		61
Components, Spares & other spare parts	49,21,90		65,31
		49,76,14	75,55
Inventories includes stores in transit			
Rs. 329.37 lakhs (previous year 0.47 lakhs)			
<b>Sundry Debtors</b>			
(Unsecured, considered good)			
Debts outstanding for a period exceeding six months	128,15,97		-
Other debts	208,30,27		-
		336,46,24	-
Cash and Bank Balances			
Cash, drafts, stamps and imprest	6,11		4,89
Remittance in transit	1,19,42		26,50
Term deposits in Indian Bank	19,15,66		73,97,73
Balance with scheduled banks on current accounts	94,90,87		1,85,38
		115,32,06	76,14,50
Less: Funds, held on customers' A/c	4,47,45		2,78,35
		110,84,61	73,36,15
<b>Other Current Assets</b>			
Interest accrued	3,98,08		2,07,91
Others	70,17		7
		4,68,25	2,07,98
<b>Loans and Advances</b>			
<b>Loans</b>			
Employees	12,30,12		2,84,60
Others	1,90		-
		12,32,02	2,84,60
<b>Advances</b>			
<b>Advances Recoverable in Cash or kind ors for Value to be Received from</b>			
Contractors & Suppliers, including material issued on loan	4,51,60		29,16
Employees	1,73,92		74,79
Claims recoverable	5,75,75		4
Others	27,71,90		27,80,79
		39,73,17	28,84,78
Less: Provision for bad and doubtful advances and claims	2,10,59		-
		37,62,58	28,84,78
Deposits with customs, port trust and others	123,30,85		137,75,41
Public deposit A/c. with Government of India	3,00,00		10,00,00
		163,93,43	176,60,19
<b>Total</b>		<b>176,25,45</b>	<b>179,44,79</b>
		<b>678,00,69</b>	<b>255,64,47</b>



## CURRENT ASSETS, LOANS AND ADVANCES SCHEDULE - 8 (Contd.)

(Rs. in Thousands)

			As at 31st March, 1993	As at 31st March, 1992
<b>Particulars of Loans and Advances</b>				
Secured			8,74,89	1,55,76
Unsecured considered good			167,50,56	177,89,03
Considered doubtful and provided for			2,10,59	-
Total			<u>178,36,04</u>	<u>179,44,79</u>
Due from Directors & Officers of the company	Maximum Amount 1992-93	Maximum Amount 1991-92		
Director	3,64	58	2,52	54
Officers	40,83,	5,94	34,78	5,32

## CURRENT LIABILITIES AND PROVISIONS SCHEDULE - 9

(Rs. in Thousands)

			As at 31st March, 1992	As at 31st March, 1992
<b>Current Liabilities</b>				
<b>Sundry Creditors</b>				
For capital expenditure	76,69,72			4,61,11
Other goods and services	24,80,86			2,94,37
Book overdraft (Banks)	11,01,42			19,49,53
		112,52,00		27,05,01
Deposits, retention money from contractors and other	62,23,03			2,09,11
Less: Investments held as security	26,87			3,50
		61,96,16		2,05,61
Other Liabilities		91,70,99		23,46,15
<b>Interest Accrued but not due on Loans from</b>				
Government of India	52,49,90			-
Foreign Banks/Financial Institution				-
Industrial Bank of Japan and Nippon Life Insurance	29,13			-
Syndicated Loan from Industrial Bank of Japan and other Japanese Banks/Financial Institutions	47,42			-
Exim Bank, Japan	52,41			-
International Bank for Reconstruction and Development	1,97			-
Skandinorviska Enskilda Banken-I	78,45			-
Skandinorviska Enskilda Banken-II	4,21,37			-
Export Development Corporation, Canada	1,20,18			-
Other Loans	8,07,13			2,06,67
Interest accrued but not due on bonds	14,90,52			99,14
		82,98,48		3,05,81
			349,17,63	55,62,58
<b>Provisions</b>				
Provision for Gratuity			1,64,74	32,96
Grand Total			<u>350,82,37</u>	<u>55,95,54</u>



## MISCELLANEOUS EXPENDITURE (To the extent not written off or adjusted) SCHEDULE - 10

(Rs. in Thousands)

	Balance As at 1st April, 1992	Additions	Deduction	Balance As at 31st March, 93
Deferred Revenue expenditure	17,33,69	-	1,88,23	15,45,46
Preliminary Expenses	40,14	-	40,14	-
<b>Total</b>	<b>17,73,83</b>	<b>-</b>	<b>2,88,37</b>	<b>15,45,46</b>

## CONTINGENT LIABILITIES SCHEDULE - 11

(Rs. in Thousands)

	As at 31st March, 1993	As at 31st March, 1992
Claims against the company not acknowledged as debts	37,18,62	-
Others	8,62,93	-
<b>Total</b>	<b>45,81,55</b>	<b>-</b>

## OTHER INCOME SCHEDULE - 12

(Rs. in Thousands)

		For the year ended 31st March, 1993	For the Year ended 31st March, 1992
Hire charges for equipment	7,97		-
Interest from Indian Banks	1,10,30		2,59
Others	1,30,06		34,63
		2,40,36	37,22
Profit on fixed assets discarded	7,35	-	
Miscellaneous income	1,75,91		2,32
		4,31,59	39,54
Less: Income transferred to incidental expenditure during construction		1,42,16	6,06
<b>Total</b>		<b>2,89,43</b>	<b>33,48</b>



## TRANSMISSION, ADMINISTRATION & OTHER EXPENSES SCHEDULE - 13

(Rs. in Thousands)

		For the year ended 31st March, 1993	For the Year ended 31st March, 1992
Employee Cost			
Empolyees' remuneration and benefits			
Salaries, wages, allowance & benefits		28,70,66	11,42,34
Contribution to provident and other funds		2,07,10	1,19,35
Welfare expenses		4,66,08	1,46,72
		<u>35,43,84</u>	14,08,41
Transmission Expenses			
Repair & Maintenance			
Buildings	1,19,87		28,57
Plant & Machinery			
Sub Station	2,56,58		38,02
Transmission Lines	2,10,91		89,29
Construction equipment	2,87		9
Others	63,51		45,11
		<u>6,53,74</u>	2,01,08
Power charges	4,56,18		1,72,72
Less: Recovery from contractors	1,56		-
		<u>4,63,62</u>	1,72,72
Stores consumed		6,87	1
Water charges		3,53	2,16
Total		<u>11,27,76</u>	3,75,97
Administration Expenses			
Training & Recruitment expenses	4,80		8,17
Less: Fees for training and application	24		58
		<u>48,56</u>	7,59
legal expenses		8,58	11,17
Professional charges & consultancy		39,74	14,99
Communication expenses		2,10,80	83,56
Travelling expenses (excluding foreign travel)	5,66,80		2,31,84
Foreign travel only	58,66		12,36
		<u>6,25,46</u>	2,44,20
Tender expenses	44,20		19,36
Less: Sale of tenders	6,40		1,61
		<u>37,80</u>	17,75
Payment to statutory Auditors			
Fee (Subject to approval of Company law board)	2,25		90
In other capacity (certification of prospectus etc)	1,45		31
Expenses	4,05		1,08
		<u>7,75</u>	2,29



## TRANSMISSION, ADMINISTRATION & OTHER EXPENSES SCHEDULE - 13 (Contd.)

(Rs. in Thousands)

		For the year ended 31st March, 1993	For the Year ended 31st March, 1992
Advertisement and publicity		33,57	19,88
Printing and stationery		1,13,84	46,41
EDP hire and other charges		16,55	10,66
Entertainment expenses		7,09	2,31
Brokerage & Commission		84	30
Donations		15	-
Research & development expenses		13,47	-
Rent		2,23,22	93,60
Construction stores written off		27	20
Temporary works charged off		28,85	4,39
Miscellaneous expenses (excluding Director's fee)		5,55,93	1,81,39
Insurance		7,89,63	1,04,90
Rates and taxes		17,06	1,87
Expenses for Transit Camp	23,11		7,55
Less: Income from Transit Camp	<u>1,87</u>		16
		<u>21,24</u>	7,39
		28,00,40	8,54,85
Total		<u>74,72,00</u>	<u>26,39,23</u>
Stores consumption included in repair and maintenance		96,40	18,24



## FINANCE AND OTHER CHARGES SCHEDULE - 14

(Rs. in Thousands)

		For the year ended 31st March, 1993	For the Year ended 31st March, 1992
<b>Interest on</b>			
Loans from Government of India		98,32,71	-
Loans from Banks			
Indian		30,32	3,26
Foreign			
International Bank for reconstruction and Development	1,97		-
Industrial Bank of Japan & Nippon & Life Insurance	1,59,47		-
Industrial Bank Of Japan & Other Japanese Banks and Financial Institutional	11,67,36		-
Exim Bank, Japan	14,46,92		-
Skandinorviska Enskilda Banken -I	2,49,75		-
Skandinorviska Enskilda Banken-II	10,03,51		-
Export Development Corporation (Canada)	5,19,96		-
		<u>45,48,94</u>	-
<b>Loans from Financial Institutions</b>			
Unit Trust of India	1,41,84		-
Life Insurance Corporation of India	3,04,67		-
		<u>4,46,51</u>	-
Secured/Unsecured redeemable bonds	77,46,95		1,53,24
Less: Interest earnings on bonds	5,58,17		1,35,24
		<u>71,88,78</u>	18,22
Other		<u>5,06,06</u>	1,41,91
			<u>1,63,39</u>
Bond issue expenses		1,88,23	11,31
Rebate to Customers		1,11,99	-
Commitment charges		30,68	-
Management/Arrangers Fees		12,49	-
Other finance charges		36,24	2,12
Other expenses on foreign company loans		2	-
		<u>225,53,32</u>	<u>1,76,82</u>
<b>Total</b>		<u>229,32,97</u>	<u>1,76,82</u>



**INCIDENTAL EXPENDITURE DURING CONSTRUCTION  
SCHEDULE - 15**

(Rs. in Thousands)

		For the year ended 31st March, 1993	For the Year ended 31st March, 1992
<b>A. Expenses</b>			
<b>Employees' Remuneration and Benefits</b>			
Salaries, wages, allowances and benefits		7,96,06	1,24,62
Contribution to provident and other funds		59,01	13,98
Welfare expenses		1,23,33	17,57
		<u>9,78,40</u>	<u>1,56,17</u>
<b>Transmission Expenses</b>			
<b>Repairs &amp; Maintenance</b>			
Buildings	10,07		2,16
Construction equipment	2,09		8
Others	11,86		5,22
		<u>24,02</u>	<u>7,46</u>
Power	62,44		11,87
Less: Recovered from contractors	1,56		-
		<u>60,88</u>	<u>11,87</u>
Water charges		2,02	32
		<u>86,92</u>	<u>19,65</u>
<b>Administration Expenses</b>			
Legal expenses		1,56	1,62
Professional charges & consultancy fee		12,03	2,25
Communication expenses		70,34	17,02
Travelling expenses		1,82,47	38,17
Tender expenses	35,52		7,11
Less: Income from sale of tenders	1,87		38
		<u>33,65</u>	<u>6,73</u>
Payment to Auditors		2,23	33
Advertisement and Publicity		9,50	2,79
Printing and stationery		32,67	8,54
EDP hire and other charges		2,98	1,66
Entertainment expenses		2,29	36
Brokerage and commission		5,88	7
Rent		57,44	15,23
Construction Stores written off		42	15
Temporary works written off		9,47	2,58
Miscellaneous expenses		1,62,28	32,58
Insurance		1,74,27	2,84
Rates and taxes		3,08	54
Depreciation		59,04	35
Transit Camp Expenses	7,27		1,28
Less: Income from Transit Camp	28		3
		<u>6,99</u>	<u>1,25</u>
Total of Administrative expenses		<u>8,28,59</u>	<u>1,35,06</u>
Prior Period adjustment (net)		<u>46,74</u>	<u>17</u>
Total (A)		<u>19,40,65</u>	<u>3,11,05</u>



## INCIDENTAL EXPENDITURE DURING CONSTRUCTION SCHEDULE - 15 (Contd.)

(Rs. in Thousands)

		For the year ended 31st March, 1993	For the Year ended 31st March, 1992
<b>B. Interest and Finance Charges</b>			
<b>Interest on</b>			
Loan from Government of India		19,82,72	-
Loan from Bank			
Foreign			
Syndicated Loan from Industrial Bank of Japan and other Japanese Banks/ Financial Institutions	1,45,84		-
Exim Bank, Japan	5,65,89		-
Export Development Corporation (Canada)	5,19,96		-
International bank for Reconstruction and Development	1,97		-
		12,33,66	-
Loans from Financial Institutions			
Loan from Life Insurance Corporation	2,25,14		-
Others	4,12,94		1,39,76
		6,38,08	1,39,76
Secured/Unsecured Redeemable Bonds		11,97,51	18,22
Bonds Others		12,59,12	-
Commitment charges		30,27	-
Other Finance charges		5,69	68
Total (B)		63,47,05	1,58,66
<b>C. Less Other Income</b>			
Hire charges		4,88	-
Interest from			
Banks		92,78	7
Others		28,83	5,45
Miscellaneous income		15,67	54
Total (C)		1,42,16	6,06
Grand Total (A+B-C)		81,45,54	4,63,65

## PRIOR PERIOD ADJUSTMENT (NET) SCHEDULE - 16

(Rs. in Thousands)

		For the year ended 31st March, 1993	For the Year ended 31st March, 1992
<b>Income</b>			
Excess provision written back	13,41		-
Others	12,82		-
		26,23	-
<b>Expenditure</b>			
Salary, wages, allowances & benefits	52,15		98
Power charges	4,73		-
Rates and taxes	9		-
Others	15,74		17
		72,71	1,15
Prior period expenditure/income (Net)		46,48	1,15



## NOTES ON ACCOUNTS

### SCHEDULE-17

- In terms of The National Thermal Power Corporation Limited, National Hydro electric Power Corporation Limited and North- Eastern Electric Power Corporation Limited (Acquisition and Transfer of Power Transmission systems) Act, 1993 (24 of 1993), the Power Transmission System and the right, title and interest were transferred and vested in POWER GRID CORPORATION OF INDIA LIMITED through Central Government with effect from 1.4.1992 based on audited statement of account of the transferor organisations as on 31.03.1992.
- The purchase consideration of the Power Transmission System and financing pattern have been mutually identified and agreed as given below, subject to approval of Government of India :

(Rs.in Crores)

	Share Capital Deposit	Loans	Total
National Thermal Power Corporation Limited	1349.37	1987.49	3336.86
National Hydroelectric Power Corporation Limited	205.65	313.39	519.04
North- Eastern Electric Power Corporation Limited	121,.14*	37.39	158,53
<b>Total</b>	<b>1676.16</b>	<b>2338.27</b>	<b>4014.43</b>

\* Includes Rs. 25 crores drawn by Corporation from Public Deposit Account against equity released to NEEPCO on 30.03.1992.

- The funds released by Government of India through NTPC, NHPC and NEEPCO during 1992-93 for execution of Transmission systems of the Corporation have been accounted as shown below:

(Rs.in Crores)

	Share Capital Deposit	GOI Loans	Total
National Thermal Power Corporation Limited	25.129	34.871	60.000
National Hydroelectric Power Corporation Limited	-	20.000	20.000
North- Eastern Electric Power Corporation Limited	65.000	-	65.000
<b>Total</b>	<b>90.129</b>	<b>54.871</b>	<b>145.000</b>

- As per M.O.U dated 28.08.91 between Nuclear Power Corporation Limited (NPC) and Corporation the ownership of Transmission Line works of NPC was transferred to the Corporation w.e.f., 1.4.1991.
- For associated Transmission System assets of National Hydro electric Power Corporation Limited (NHPC) situated in Jammu and Kashmir, The Lease agreement has not been transferred from Central/State Government/NHPC, hence these assets will continue under management contract dated 18.11.1991 between NHPC and the Corporation.
- Pending Government of India approval for transfer of ownership as per M.O.U dated 30.11.1992, the transmission lines associated with Neyveli Lignite Corporation Limited (NLC) have been transferred to the Corporation on management basis with effect from 01.12.92.
- The cost of land include provisional deposit, payment/ liabilities towards compensation, rehabilitation and other expenses.
- Fixed assets include Company's share of Rs. 5.62 crores in common services and facilities of 400 KV substation of UPSEB and RSEB pending execution of formal agreement for joint ownership.
- Certain assets like furniture, fixtures, etc., retained by the transferor organisation will be settled/ adjusted in subsequent years.
- Balances shown under advances, sundry debtors and creditors are subject to confirmation. In the opinion of the management, the value on realisation of current assets, loans and advances in the ordinary course of business will not be less than the value at which these are stated in the Balance Sheet.
- Materials in transit/under inspection/ with contractors are subject to confirmation/ reconciliation and consequential adjustments, if any.



## NOTES ON ACCOUNTS

### SCHEDULE - 17(Contd.)

12. Provision has not been made for entry tax and sales tax on works contracts and materials issued to contractors for which appeals are pending and/or the amount are also not ascertainable.
13. Pending finalisation of agreement with Orissa State Electricity Board, charges for wheeling of power through Jeypore Talcher Transmission system have been accounted for at the rate of Rs. 40 lakhs per month.
14. The realisation of transmission charges by National Thermal Power Corporation Limited (NTPC) during 01.04.92 to 31.12.92 has been transferred to the Corporation. In Western Region as against billing of Transmission Charges of Rs. 87,82,47,561/- NTPC has informed realisation of Rs. 43,06,87,958/-. However as informed by State Electricity Boards, the payment by them to NTPC was more by Rs. 32,43,64,574/-. Accordingly an amount of Rs. 75,50,52,532/- has been accounted as recoverable from NTPC towards realisation of Transmission Charges.
15. The transmission charges includes Rs. 23,25,39,680/- for Anta and Auriya Transmission Systems pending acceptance of tariff by State Electricity Boards.
16. Consultancy, Project Management and Supervision fees includes Rs. 30 lakhs ( Previous year Rs. 18.75 lakhs) for management fee for Mandola Sub-station for which the agreement is yet to be finalised.
17. Pending receipt of funds from Canbank Financial service Limited, and Andhra Bank Financial Service Limited, the Corporation has not provided for the interest payable on 17% taxable bonds of Rs. 78,96,66,000/- and 9% taxfree bonds of Rs. 64,99,82,000/- (1st Issue-1992) issued to these organisations amounting to Rs. 17,02,41,600/- and Rs. 2,25,00,000/- respectively. At the same time the Corporation has not accounted for interest income amounting to Rs. 11,28,00,000/- and 2,95,62,500/- from these institutions for amount deposited with them. No provision is considered necessary for principal amounts of deposits of Rs. 94 crores (previous year 110.80 crores) with Canbank Financial Services Limited and Rs. 21.50 crores (previous year Rs. 21.50 crores) with Andhra Bank Financial Services Limited kept with these organisations in compliance to their conditions for subscriptions to private placement of Bonds, as these are considered recoverable.
18. The wage agreement/pay scales were operative upto 31.12.1991. The revision of wage agreement's/pay scales are under negotiation and so no provision is made in the books.
19. The establishment expenses for the year 1992-93 of HVDC, Vindhyachal have been accounted for on the basis of certified statement of Account furnished by National Thermal Power Corporation Limited.
20. Provision for gratuity was made on estimated basis for the year 1991-92 whereas on actuarial basis for the year 1992-93. The effect of the change in the accounting policy on the profit is not ascertainable.
21. In the absence of taxable income no provision for income tax for the year is considered necessary.
22. As per accounting Policy No. 8.3 surcharge on outstanding dues for State Electricity Boards amounting of Rs. 18.98 Crores (previous year Rs. Nil) has not been accounted for.
23. Depreciation charged in the Account is lower by Rs. 42,48,41,013/-(Previous year Rs. 22,66,800/-) if calculated as per Section 205 (2) (b) of companies Act 1956. The Cumulative effect of the same upto 31st march 1993 is Rs. 42,70,89,043/- (upto previous year Rs. 22,48,030/-).
24. Estimated amount of capital commitments is Rs. 611.48 Crores)( previous year Rs. 67.04 crores )
25. a) Employees' remuneration and benefits include the following for the Directors including Chairman & managing Director:

( Rs. in lakhs)

	Current Year	Previous Year
Salaries & Allowances	3.53	2.72
Contribution to Provident Fund & Other funds including Gratuity & Group Insurance	0.35	0.27
Other Benefits	1.16	0.65

b) In addition to the above remuneration the whole time Director s have been allowed the use of staff car including private journeys on payments of Rs. 250/Rs. 400 per month, as contained in the Ministry of Finance (BPE) Circular No.2 (180/pc/64 dt. 29.11.64 as amended).



## NOTES ON ACCOUNTS SCHEDULE - 17 (Contd.)

26.

	Current Year	Previous year
a) Purchase of Power (Million Units)	1309	nil
b) Sale of Power (Million Units)	1309	nil

(Rs./ lakhs)

27.

	Current Year	Previous year
a) Value of imports calculated on CIF basis:		
i) Capital goods	4795.85	-
ii) Spare Parts	21.57	-
b) Expenditure in foreign currency		
i) Professional and Consultancy fee	106.81	-
ii) Interest	867.29	-
iii) Others	21.78	7.03
c) Value of Components, Stores and Spare parts consumed:		
i) Imported	0.10	0.01 %
ii) Indigenous (including fuel)	105.53	99.99 %
d) Earnings in foreign exchange:		
i) Consultancy	-	-
ii) Interest	0.80	-
iii) Others (Sale of tender papers)	0.33	0.07

28. Previous year's figures have been regrouped/ rearranged wherever necessary

**(P.D. TUTEJA)**  
Secretary

**(K.L.SHARMA)**  
E.D. ( Fin.)

**(S.C. PARAKH)**  
Director(Projects)

**(R.K.NARAYAN)**  
Chairman & Managing Director

For BATRA SAPRA & CO.  
Chartered Accountants

As per our report of even date  
For LAXMININIWAS & JAIN  
Chartered Accountants

For SRI ASSOCIATES  
Chartered Accountants

**(A.L. BATRA)**  
Partner

**(S.K. JAIN)**  
Partner

**(I. PASHA)**  
Partner

Place: New Delhi

Date: 7th September, 1993



# Auditors' Report

To the Members of the  
Power Grid Corporation of India Limited,  
New Delhi

We have audited the attached Balance Sheet of Power Grid Corporation of India Limited as at 31st march, 1993 and annexed Profit & Loss Account for the year ended on that date together with the Schedules, Notes forming part of Accounts and Accounting Policies referred to therein:

## We report that:

1. The Company is governed by the Electricity (Supply), act, 1948, the provisions of the said Act read with the rules thereunder have prevailed wherever the same have been inconsistent with the provision of the companies Act, 1956.
2. As required by the Manufacturing and the Other Companies (Auditor's Report Order, 1988 issued by the Company Law Board in terms of Section 227 (4A) of the Companies Act, 1956, we give in the Annexure a statement on the matters specified in paragraphs 4 and 5 of the said order.
3. Further to our comments in the Annexure referred to in Paragraph 2 above:-
  - (a) We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit:
  - (b) In our opinion, proper books of account as required by law have been kept by the Company, so far as appears from our examination of the books:
  - (c) The Balance Sheet and Profit & Loss Account dealt with by this report are in agreement with the books of account.
  - (d)
    - (i) The Purchase Consideration of the Power Transmission System and funds released by Government of India for execution of Transmission Systems through NTPC, NHPC and NEEPCO has been allocated in the financing pattern of Share Capital Deposit/ Loans, pending approval of Govt. of India (note nos. 2&3 of Schedule 17). Final approval being otherwise than the said exhibition will have corresponding effect on Capital, Loans and on profit for the year through interest on loan the impact of which are not ascertainable.
    - (ii) Certain Assets are withheld by the transferor organisations to be settled/adjusted in subsequent years (Note No. 9 of Schedule 17), which are included in the assets of the Corporation and depreciation charged thereon. The impact of which on assets, depreciation and profit for the the year can not be ascertained and quantified.
    - (iii) The confirmation of balance shown under advance, sundry debtors and sundry creditors and material in transit/under inspection/with contractors and reconciliation there of is pending (Note Nos. 10 & 11 of Schedule 17), the realisation of Transmission Charges by National Thermal Power Corporation Limited. amounting to Rs. 32.44 crores being not confirmed in Western Region (Note No. 14 of. 14 of Schedule 17.) The impact of the above on assets, and liabilities and on the profit can not be ascertained.
    - (iv) Non- provision of entry tax and sales tax on works contract and materials issued to contractors, (Note No. 12 of Schedule 17). The impact of which on liabilities and profit are not ascertained.
    - (v) Non- provision of interest payable on 17% taxable bonds of Rs. 78.97 crores and 9% taxfree bonds of Rs. 65 crores (Ist Issue - 1992) amounting to Rs. 17.02 crores and Rs. 2.25 crores and non accounting for the interest income amounting to Rs. 11.28 crores and Rs. 2.96 crores for the amount of the said bonds deposited with Canbank Financial Services Limited and Andhra Bank Financial Services Limited (Note No. 17 of Schedule 17). The impact of the above, if taken into account is that the profit for the year would be lower by Rs. 5.04 crores.
    - (vi) Non- provision of the anticipated increase in Wages pending Wage Agreement w.e.f. 01.01.1992 (Note No. 18 of Schedule 17). The impact of the above on liabilities and profit are not ascertainable.
    - (vii) The establishment expenses of HVDC- Vindhyachal is accounted on the basis of certified statement of Account furnished by National Thermal Power Corporation Limited. (Note No. 19 of Schedule 17). Hence the same is not authenticated.
    - (viii) Due to change in the accounting of Gratuity from estimated basis to actuarial basis (Note No. 20 of Schedule 17), the impact on profit can not be ascertained.



## **Auditors' Report (Contd.)**

Subject to our comments under para 3(d) above, in our opinion and to the best of our information and according to the explanations given to us, the said accounts read with accounting policies and notes given in Schedule 17 give the information required by the Companies Act, 1956 in the manner so required as applicable to the Electricity generating Companies and give a true and fair view:-

- (i) In the case of the Balance Sheet, of the state of affairs of the Company as at 31st March, 1993: and
- (ii) In the case of the Profit and Loss Account, of the Profit for the year ended on that date.

For **BATRA SAPRA & CO**  
*Chartered Accountants*

**(A.L.BATRA)**  
*Partner*

For **LAXMINIWAS & JAIN**  
*Chartered Accountants*

**(S.K.JAIN)**  
*Partner*

For **SRI ASSOCIATES**  
*Chartered Accountants*

**(I. PASHA)**  
*Partner*

Place: New Delhi

Date: 7th September, 1993



## Annexure to the Auditors' Report

1. The Company has generally maintained proper records showing full particulars, including quantitative details, and situation/location, as far as practicable of its fixed assets. The fixed assets of the Company have been physically verified by the Management during the year except certain assets held by Transferor Organisations. No material discrepancies between the book records and physical inventory have been noted.
2. None of the fixed assets have been revalued during the year.
3. As explained to us, the stocks of stores and spare parts have been physically verified during the year by the management. In our opinion the frequency of verification is reasonable.
4. According to the information and explanations given to us, in our opinion, the procedures of physical verification of stocks followed by the management are reasonable and adequate in relation to the size of the company and the nature of its business.
5. The discrepancies noted on verification between the physical stores and book records were not material, having regard to the size of the operations of the company.
6. In our opinion and on the basis of our examination of the stock records, the valuation of stocks is fair and proper in accordance with the normally accepted accounting principles.
7. The company has not taken any loan from the companies, firms or the order parties listed in the register maintained under section 301 of the Companies Act, 1956. There are no companies under the same management as defined under sub-section (1-B) of section 370 of the Companies Act, 1956.
8. The company has not granted any loan, secured or unsecured to companies, firms or other parties listed in the register maintained under section 301 of the Companies Act, 1956. There are no companies under the same management as defined under sub-section (1-B) of section 370 of the Companies Act, 1956.
9. The company has given deposit to Canbank Financial Services Ltd. and Andhra Bank Financial Service Ltd. in addition to other Financial Institutions and advances in the nature of loan to employees. The other Financial Institutions and employees are generally repaying the principal amount and interest as per stipulation. The Canbank Financial Services Ltd. and Andhra Bank Financial Services Ltd. have not repaid the principal amount and interest thereon. The company has informed that they are taking reasonable steps for recovery of principal and interest.
10. In our opinion and according to the information and explanations given to us, some of the items purchased are of a special nature, for which suitable alternative sources do not exist for obtaining comparable quotations. Subject to the above, there are adequate internal control procedures commensurate with the size of the company and the nature of its business with regard to purchases of stores, components, plant and machinery, equipment and other assets and for the sale of goods/services.
11. According to the information and explanations given to us, there are no transactions of purchase and sale of goods and materials made in pursuance of contracts or arrangements entered in the register maintained under section 301 of the Companies Act, 1956, aggregating during the year to Rs. 50000/- or more in respect of each party, except in case of services rendered by the company. We have been informed that no similar services were rendered to other parties and hence the prices at which services have been rendered are not comparable. On the basis of information and explanations provided, the same appears to be reasonable.
12. On the basis of the information and explanations given, we are of the opinion that the Company has a system of determining unserviceable or damaged stores on the basis of technical assessment. However, as reported by the Management, there is no damaged or unserviceable stores. Therefore, no provision for any loss thereagainst has been considered necessary.
13. The company has not accepted any deposit from the Public Under Section 58-A of the Companies Act, 1956 and rules made thereunder.
14. The company does not have any by-product. In our opinion, reasonable records have been maintained by the company for the sale and disposal of scrap.
15. The company has a system of Internal Audit. In our opinion, it requires to be strengthened to commensurate with the size and nature of its business.
16. Central Govt. has not prescribed maintenance of cost records under section 209(1)(d) of the Companies Act, 1956 in respect of the company.



## **Annexure to the Auditors' Report (Contd.)**

17. The company is regular in depositing Provident Fund dues with the appropriate authority. As per information made available to us, ESI Act is not applicable to the company.
18. According to the information and explanations given to us, there were no undisputed amount payable in respect of income tax wealth tax, sales tax, customs duty and excise duty which have remained outstanding, as at 31st March, 1993, for a period of more than six months from the date they became payable.
19. According to the information and explanations given and the records of the Company examined, no personal expenses have been charged to revenue account, other than those payable under contractual obligations or in accordance with the generally accepted business practice.
20. The company is not a Sick Industrial Company as defined in Section 3(1)(0) of the Sick Industrial Companies (Special Provisions) Act, 1985.
21. In regard to the company's activities relating to consultancy, project management and supervision, we report that:
- (i) the company has a reasonable system of allocation of man hours consumed on the respective activities.
  - (ii) the company has a reasonable system of internal control of allocation of man hours commensurate with the size of the company and the nature of its business.
  - (iii) the company has a reasonable system of recording receipts, issues, and consumption of materials and stores commensurate with the size and the nature of its business.
22. In regard to Company's activities relating to the trading:-
- There are no damaged goods to be determined, hence, significant part of such goods and making the provisions for such loss do not arise.

For **BATRA SAPRA & CO**  
Chartered Accountants

For **LAXMINIWAS & JAIN**  
Chartered Accountants

For **SRI ASSOCIATES**  
Chartered Accountants

**(A.L.BATRA)**  
Partner

**(S.K. JAIN)**  
Partner

**(I. PASHA)**  
Partner

Place: New Delhi

Date: 7th September, 1993



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**COMMENTS OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA UNDER SECTION 619(4) OF THE COMPANIES ACT, 1956 ON THE ACCOUNTS OF POWER GRID CORPORATION OF INDIA LIMITED, NEW DELHI FOR THE YEAR ENDED 31ST MARCH, 1993**

I have to state that the Comptroller and Auditor General of India has no comments upon or supplement to the Auditors' Report under Section 619(4) of the Companies Act, 1956 on the accounts Power Grid Corporation Of India Limited, New Delhi for the year ended 31st March, 1993.

New Delhi  
Dated: 22nd September, 1993

**(KANWAL NATH)**  
PRINCIPAL DIRECTOR OF COMMERCIAL AUDIT  
AND EX-OFFICIO MEMBER, AUDIT BOARD



**ANNEXURE TO DIRECTOR'S REPORT**  
**Particulars of Employees pursuant to section 217 (2A) of the Companies Act, 1956**

S.No	Name	Designation and nature	Remuneration (Rs.)	Qualifications	Experience (years)	Date of Commencement of employment	Age (Years)	Last Employment held
1.	2.	3.	4.	5.	6.	7.	8.	9.
<b>Employed for the full of the year</b>								
1.	Adinarayana S.	CFM	1,65,784	M. Com., ACA	18	21.02.91	46	NTPC LTD.
2.	Agarwal A.K.	CPM	1,54,515	B.A. Eco.(Hons), PGD in PM & L.	23	01.04.91	44	NHPC LTD.
3.	Agarwal S.K	Sr. Mgr.	1,56,073	B.E.(E) M..Tech.	18	21.06. 91	39	NTPC LTD.
4.	Amulya Charan	G.M	1,82,272	B.E. (M), PGD in Busi. Admn.	19	14.03.91	45	NTPC LTD.
5.	Asthana A.K.	Sr. Manager (Com.)	1,65,029	B.E. (Civil)	23	16.08.91	47	NTPC LTD.
6.	Arun Kumar	Sr. Mgr.	1,61,702	B.E. (E)	16	26.06.91	38	NTPC LTD.
7.	Bahri R.	Sr. Manager	1,51,133	B. Sc., Engg. (E)	19	16.08.91	41	NTPC LTD.
8.	Banerjee B.K	GM (ER)	1,48,734	B. Sc., BE (Civil)	28	16.08.91	53	NTPC LTD.
9.	Banerjee S.K	Sr. Manager	1,52,278	BE (Elect.)	24	16.08.91	46	NTPC LTD.
10.	Batra Yash Pal	AGM	1,78,803	B.Sc. (E) (Civil), M.I.E.	33	16.08.91	57	NTPC LTD.
11.	Bhanu Bhushan	GM	1,44,628	B. Sc., Engg.(E)	26	21.01.91	49	NTPC LTD.
12.	Bhatnagar A.K	AGM	1,48,205	B.Sc.,Engg.(Telecom)	29	27.08.91	53	CMC LTD.
13.	Bhattacharjee K.	Sr. Manager	1,58,228	M. Tech	24	16.08.91	49	NTPC LTD.
14.	Bire S.G	DGM, WR	1,45,224	B.E. (Elect.)	26	16.08.91	49	NTPC LTD.
15.	Chandra U.	CDE	1,59,309	B. E. (E)	21	16.08.91	44	NTPC LTD
16.	Chopra V.N	DCDE	1,60,974	B.E. (C).	24	16.08.91	48	NTPC LTD
17.	Choudhary R.P	Sr. Manager	1,49,223	B. E. (E)	25	16.08.91	48	NTPC LTD
18.	Das Dilip Kumar	Manager	1,44,097	B. Sc., Engg.(E)	22	16.08.91	45	NTPC LTD
19.	Dwivedi M.G	Sr. Manager	1,54,208	B. Sc., Engg.(E),M.E.	21	19.11.91	48	NHPC LTD
20.	Dwivedi P.K	GM	1,57,205	B. Tech. (E).	22	20.09.91	51	NTPC LTD
21.	Gopala Rao V.	DGM	1,45,061	B.E. (Mech.)	32	16.08.91	53	NTPC LTD
22.	Gopalkrishnan V.	Chief Vig. Off	1,54,136	M.A., L.L.B.	27	04.12.91	51	NTPC LTD
23.	Gupta B.K.	Sr. Manager	1,53,033	B.E. Engg. (M)	23	16.08.91	43	NTPC LTD
24.	Gupta P.N.	Sr. Manager	1,93,687	B. Sc., B.E (Elect.) MBA, LLB.	25	16.08.91	49	NTPC LTD
25.	Gupta V.K.	Manager	1,55,428	B.E. (E), M. Tech (C&1)	16	16.08.91	38	NTPC LTD
26.	Haque Jainul	DGM (CS)	1,58,686	B.E. (M)	24	16.12.91	46	NTPC LTD
27.	Jaggi A.L.	GM	1,80,013	B.E. (Elect.)	31	19.11.91	54	NHPC LTD
28.	Jain S.M	DGM	1,65,518	B. Sc., Engg.(E)	29	10.10.91	51	NTPC LTD
29.	Kakkar R.D	DGM	1,66,149	B. Sc., Engg.(E)	27	08.04.91	51	NTPC LTD
30.	Kanwar B.S.	DGM	1,58,242	B. Sc., Engg.	30	19.11.91	51	NHPC LTD
31.	Kapur A.K	DGM	1,47,561	BE (Elect.)	31	15.07.91	53	CEA
32.	Kidwai I.R.	Manager	1,46,481	B. Com. (Hons.), PGD in Busi. Mgt	18	31.01.92	39	NTPC LTD
33.	Kumar V.	AGM	1,55,276	B. Tech. (Hons.), M. Tech. (Str.)	31	16.08.91	54	NTPC LTD
34.	Madan R.K	GM	1,74,522	B. Sc., (Elect. Engg.)	29	19.11.91	52	NHPC LTD.
35.	Mahendra Kumar	DGM	1,20,556	B. SC., B.E. (E), Adv. Dip. in busi. Mgt.	23	18.06.92	45	NTPC LTD
36.	Manglik A.	DGM	1,70,238	B.E. (E), ME, PG Dip. in IR	18	16.08.91	46	NTPC LTD
37.	Mishra S.B.C.	DGM	1,57,556	B.E. (Elect.)	21	19.11.91	46	NHPC LTD



## ANNEXURE TO DIRECTOR'S REPORT

### Particulars of Employees Pursuant to Section 217 (2A) of the Companies Act, 1956

S.No	Name	Designation and nature	Remuneration (Rs.)	Qualifications	Experience (years)	Date of Commencement of employment	Age (Years)	Last Employment held
1.	2.	3.	4.	5.	6.	7.	8.	9.
38.	Mohan K.A..	ACDE	1,52,019	B.Sc. Engg. (E)	12	16.08.91	32	NTPC LTD.
39.	Nanda R.K..	DGM	1,56,258	B. Tech. (Civil)	29	19.11.91	50	NHPC LTD.
40.	Naraynan M.	DGM	1,55,328	B.E.(Civil)DBA.	27	16.08. 91	53	NTPC LTD.
41.	Narsimhan S.PL	DGM	1,72,494	A.M.I.E., D.E.E (Elect.)	30	16.08.91	51	NTPC LTD.
42.	Narula S.K.	G.M.	1,62,091	B.A. PGD in Labour Law	29	19.02.91	49	NTPC LTD.
43.	Parakh S.C	Director (Proj.)	1,78,213	B.Sc. Engg. (M)	33	15.11.91	55	NTPC LTD.
44.	Pathak A.K.	Sr. Manager (PMS)	1,55,684	B. Sc., Engg., MIE, MIEE	27	16.08.91	52	NTPC LTD.
45.	Puri L.M.	AGM	1,66,434	B.Sc. Engg. (E)	34	16.08.91	58	NEEPCO.
46.	Raizada M.K.	Sr. Manager	1,49,358	B. Tech., Fellow in Busi, Mgmt.	13	11.12.91	40	NTPC LTD.
47.	Raji Philip	CPM	1,44,837	B.Sc.,MBA	14	27.03.91	36	IFFCO.
48.	Ramchandran A.K.	AGM	1,59,890	B. Sc.Mech, ME	28	16.08.91	53	NTPC LTD.
49.	Rao S.S.	DGM	1,59,085	B.E.(Mech)PGDBM 23		16.08.91	46	NTPC LTD.
50.	Roy. M. S.	DGM	1,64,003	B.Sc. Elect.Engg.,	27	16.08.91	54	NTPC LTD.
51.	Satyam K.	DGM,WR	1,46,282	B.E. (Civil.)	25	16.08.91	47	NTPC LTD.
52.	Sharma S.S.	Sr. Manager	1,57,461	B. Sc. Engg (Elect) M.B.A	18	16.08.91	41	NTPC LTD
53.	Singh Kailash	GM	1,66,999	B.A.LLB.	27	01.05.91	52	HSCL
54.	Singh O.N.	Sr. Manager	1,61,434	B.B.M., M.B.M	18	16.08.91	42	NTPC LTD.
55.	Singh. R.P.	AGM (CS)	1,55,586	B. Sc.Engg.(M), Dip. in I&S	23	21.01.91	45	NTPC LTD.
56.	Singh. A. P.	DGM	1,51,766	B.A., LLB,	32	05.04.91	55	NEEPCO
57.	Sree Ramulu P	CFM	1,44,393	B. Com., ACA	18	16.08.91	43	NTPC LTD.
58.	Subramanian T.V.	Director (F)	1,69,375	B.A. (H.), FICWA AMIIA (USA)	33	28.09.90	56	NTPC LTD.
59.	Tahalyani T.C.A.	Sr. Manager	1,45,639	B.Sc. Engg. (E) M.Sc. Engg. (E)	21	19.11.91	46	NHPC LTD.
60.	Tayal H.L.	Sr. Manager	1,56,735	Dip. in Mech., AMIE	22	08.10.91	43	NTPC LTD.
61.	Thamilavel R	Sr. Manager	1,57,455	B.E (Elect.)	23	16.08.91	46	NTPC LTD.
62.	Varaprasada Rao M.	Manager	1,55,623	B.E. (Telecom)	27	16.08.91	50	NTPC LTD.
63.	Yadav R.G.	DGM	1,52,995	B.E. (Mech.)	25	16.08.91	43	NTPC LTD.

NOTE : Remuneration include Salary, Allowances, Payment for Subsidised leased accomodation, reimbursement of medical expenses to employees and employers contribution to Provident funds and other funds. The whole time directors have been allowed the use of staff car including for private journey in payment of Rs. 400 p.m. as may be applicable in accordance with the provision of the BPE Circular No. : 2 (18) = PC = 64 dated 20.11.64 as amended from time to time.