

**ANNUAL
REPORT
1993-94**



POWER GRID
CORPORATION
OF INDIA
LIMITED

अत्वमः त्वयम मेघम।
तत्वमः त्वयम वरुनम्।
प्रदिक्यमः त्वयम जलम।
कारुन्यमः त्वयम प्रदिक्यम।
मेघमः त्वयम चमत्कारम।
भविश्यमः त्वयम मंगलम।

Oh! Clouds the lord
Thy! come as "Varun"
Thy! provide water
Thy! make the world wait
and bring light
making life Brighter



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O V E R V I E W

A NEW LIGHT ON THE INDIAN POWER SCENARIO

The concept of Power and its transmission have recently undergone a sea-change. Traditionally perceived as a basic infrastructure for the country's economic development, to be developed by the government, transportation of power is now being seen in purely marketing terms.

Power is recognised to be instantaneously perishable commodity and this makes the handling operation more complex, requiring immediate attention in case of an untoward incident. Transportation of power from generating points to various load centers on demand plays a very important role in providing a value-added service to the beneficiaries. In fact, transmission is an activity placed between the Generators and the Distributors in the power marketing channel structure.

Today, worldwide, power sector is undergoing a metamorphosis. The move is towards segregation of transmission from generation and distribution of power and bringing the transmission under nodal agency. The agency thus set up, would ensure optimum efficiency and economy of operation through continuous monitoring, planning, mediating and coordinating in a unified manner as a facilitator for exchange of power, amongst various generating and distributing agencies. Further, it would help centrally plan the optimum investments required for the development of the power transmission system for the nation as a whole.

This restructuring envisages competition among the Generators and the Distributors in their respective markets wherein generating companies will be able to concentrate on generation and also meet competition, as the Generators will have the options to supply electricity to more than one distributing agency. This will ensure efficiency gains and optimal utilisation of natural/depletable resources. Subsequently, this will have a cascading multiplier effect on all facets of the country's economy.

EQUITABLE POWER DISTRIBUTION : The need of the hour

Historically, power generation, transmission and distribution were considered as an inseparable business activity, which led to a sub-optimum utilization of scarce natural energy resources.

Rapid strides have been made in the generation capacity additions in the post-independence era (from 1300 MW to the present level of 77,000 MW). The electricity Supply Act, enacted in 1948 with a subsequent amendment in 1975 to cope with the spiralling energy crisis, helped in setting up several new power stations and in strengthening the regional grid system.

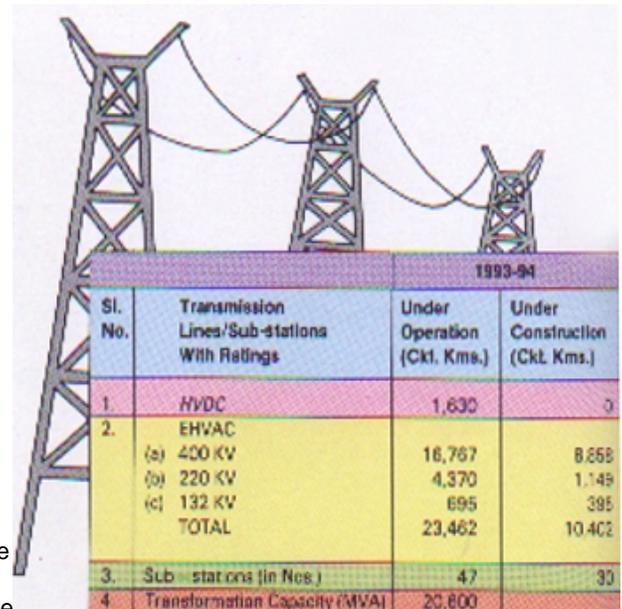
However, in spite of such measures, the power sector has been unable to supply quality and reliable power owing to inadequate transmission capacities, inter-regional transmission tie lines, metering, communication and control facilities resulting in a huge demand-supply gap. And, equitable distribution of power remained a distant dream for quite sometime to come.

Keeping this unbalanced development in Indian power scenario in view, there has been a growing need felt to restructure the entire Indian power sector. This called for a massive task of establishing grid discipline, enhancing the role of Regional Electricity Boards, augmenting the regional grid and ultimately integrating it into a national grid system, rationalizing the traffic structure, installing state-of-the-art metering, communication & control facilities, paving the way for competition and efficiency in all facets of power sector and helping to evolve a proper legal and regulatory framework for establishment of loose power pools for ease of exchange of power and a complete review of a host of other area/issues on the way of development of power sector.

In view of this, it was considered essential to create a facilitator, for the development, establishment and maintenance of all the things mentioned above, by pooling all the transmission lines and sub-stations, being handled by a number of central organization, under the umbrella of a single transmission organization. Thus was the power Grid Corporation of India Limited (POWERGRID) in October 1989.

CAPACITY

(Transmission Lines/Sub-stations)



1993-94			
Sl. No.	Transmission Lines/Sub-stations With Ratings	Under Operation (Ckt. Kms.)	Under Construction (Ckt. Kms.)
1.	HVDC	1,630	0
2.	EHVAC		
	(a) 400 KV	16,767	8,658
	(b) 220 KV	4,370	1,149
	(c) 132 KV	695	395
	TOTAL	23,462	10,402
3.	Sub-stations (In Nos.)	47	30
4.	Transformation Capacity (MVA)	20,600	

POWERGRID : The Change Agent

POWERGRID is the change agent in the evolutionary restructuring movement that is sweeping the Indian power sector an amalgamating force, pooling the best of the transmission expertise available from various organisations in the power sector.

At present, POWERGRID operates approximately 23,500 ckt. kms. of transmission lines comprising of 400 KV, 220 KV, 132 KV AC transmission lines and HVDC transmission system with a total transformation capacity of 20,600 MVA distributed over 50 substations. The net value of assets on 31st March 1994 is Rs. 6050 crores, and it is today one of the largest bulk power transmission organisations in world.

NEW ENTRANTS : Dovetailing the Private Sector

Keeping in view that private/joint venture generating companies will soon enter the arena, POWERGRID will pave the way for a power evacuation system in an effective and reliable manner. The evacuation system will be dovetailed with the regional power grid not only to ensure proper dispersal of power generated from such stations but also to keep the same within the safe and reliable operational limits of the grid.

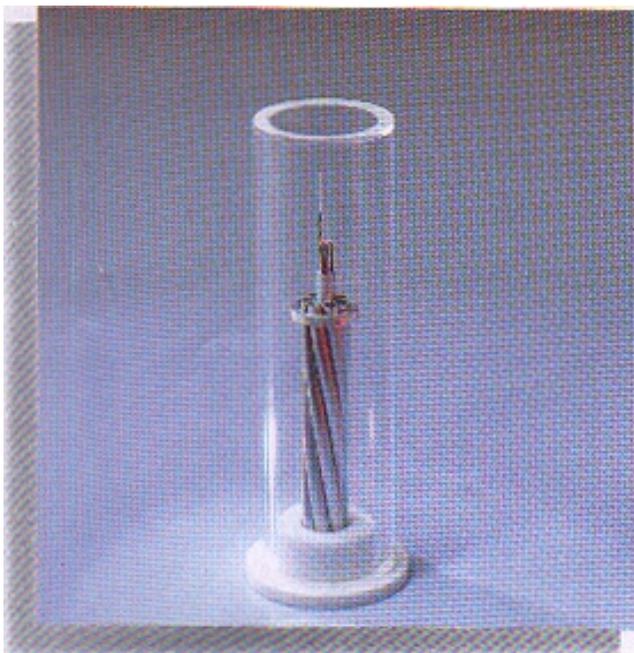
MISSION

Establishment and operation of Regional and National Power Grids to facilitate transfer of power within and across the Regions with reliability, security and economy, on sound commercial principles.

OBJECTIVES

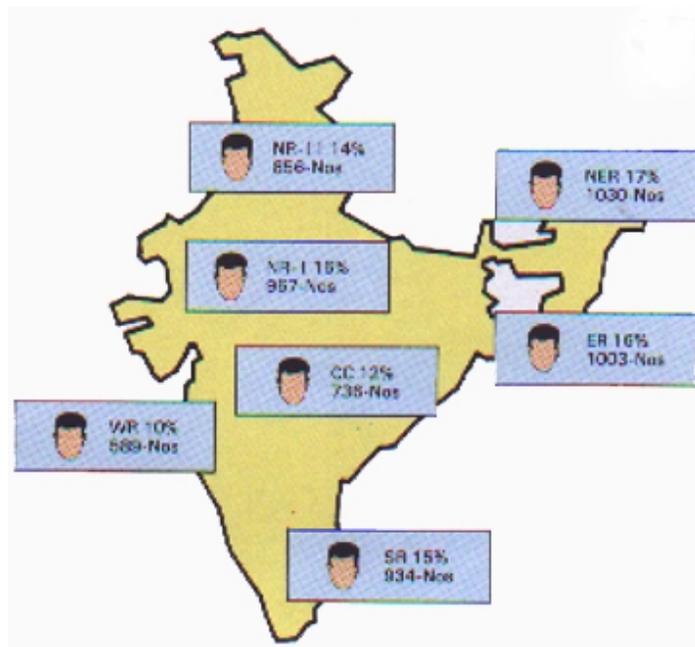
The Corporation has set the following objectives in line with its mission:

- Efficient operation and maintenance of transmission systems.
- Strengthen Regional Power Grids and establish Inter Regional links leading to formation of National Power Grid.
- Establish/augment regional load dispatch centres and communication facilities.



MANPOWER PROFILE

REGION WISE (Excl. Trainees)



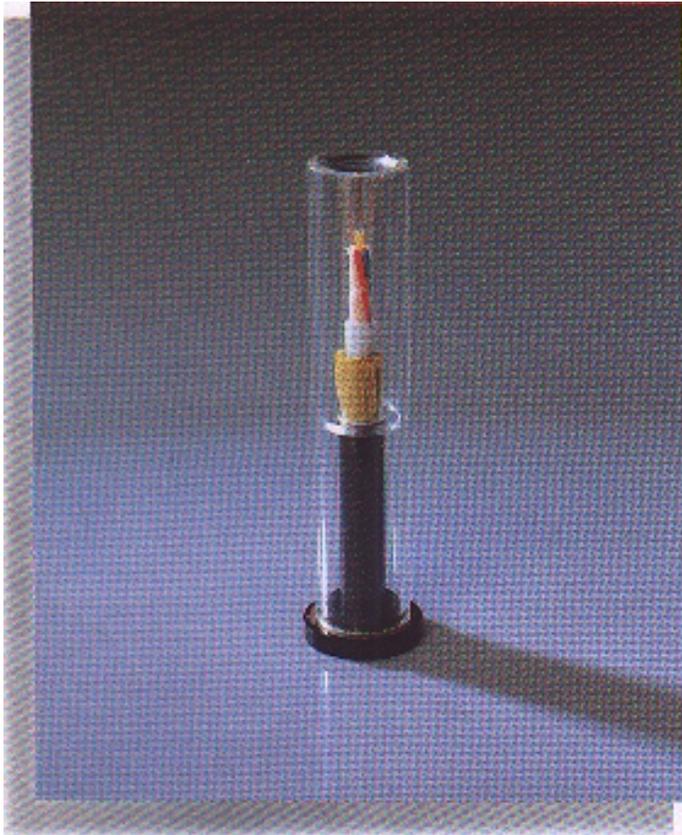
- Introduce rational tariff structure for exchange of power.
- Establish Power Pools to facilitate exchange of power between states/regions leading to formation of National Power grid.
- Achieve constructive cooperation and build professional relations with stake-holders, peers and other related organisations.

CONSOLIDATING THE BASE

The initial consolidation process entailed taking over of transmission systems from central and center-state joint venture organisation, along with related manpower. This process has been completed for NTPC, NHPC, NJPC, NEEPCO, NLC, NPC and THDC.

AUGMENTING THE POWER SYSTEM

At present, the power system is being augmented for improved co-ordination in operation of the regional grids. The transfer of existing RLDCs with related grid operation functions and their co-ordination for power trading is being actively pursued.



INTEGRATED SYSTEM OPERATION

Power Pools will eventually be established to facilitate the exchange of power between states and regions, thus leading to the formation of the NATIONAL POWER GRID.

Of the five regional RLDCs, POWERGRID has taken over the Southern Region LDC on 1st January, 1994. This process will be completed by the end of 1995 when all the five regional LDCs will be operated POWERGRID.

With the establishment of state-of-the-art communication facilities and proper commercial principles and procedures, platform would be set for commencement of optimal integrated system operation.

THRUST AREAS

- Hot line maintenance
- Computerised substation control and data acquisition
- HVDC systems
- Installation of static var compensators and shunt capacitors
- Flexible AC transmission systems
- State-of-the-art load despatch and communication facilities

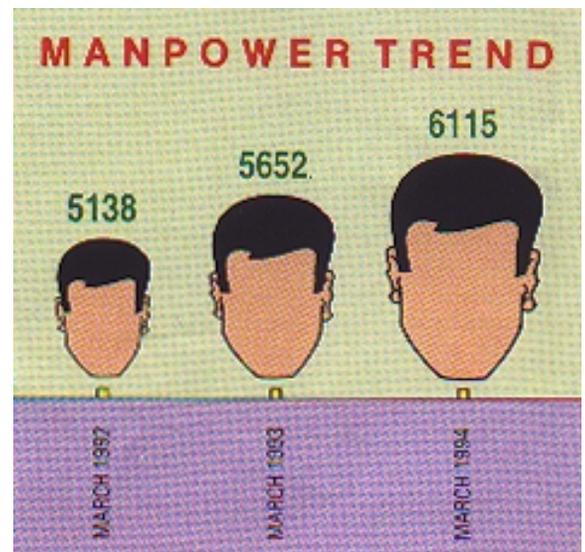
TOWARDS A NATIONAL POWERGRID

POWERGRID WILL TAKE OVER THE regional system CO-ORDINATION centers (RSCCs) for operation, planning and real-time co-ordination activities and establish inter-regional links which will save approx. 10,000 MW of generation capacity by the end of the country's 10th Five Year Plan. This will also reduce unsevered demand by 50% and benefits of Rs. 1,100 crores per year will accrue to the organisation which will be approx. Rs. 13,000 crores by 1999.

POWERGRID will promote creation of Regional Power Pools in all the designate regions on a voluntary co-operation basis to optimise the operation of the total power system. It will provide information on various aspects like price range, generation maintenance schedules, tie-line flows, deviations, billing and settlement etc.

IN-HOUSE EXPERTISE : The Power to Perform

The POWERGRID Board and Senior Management combine the advanced skills of engineering and power technology with the right management and communication acumen to lead a team of engineers and professionals to greater demanding challenges. The 6,000 odd strong workforce is drawn from the various utilities devoted to providing the state-of-the-art-solutions for various projects.



INTERNATIONAL RECOGNITION

International financial institutions like the World Bank, the Asian Development Bank (ADB), Overseas Economic Cooperation Fund (OECF) of Japan, European Investment Bank (EIB) and others have expressed their confidence in our capabilities to operate, monitor and construct the national and regional power grids.

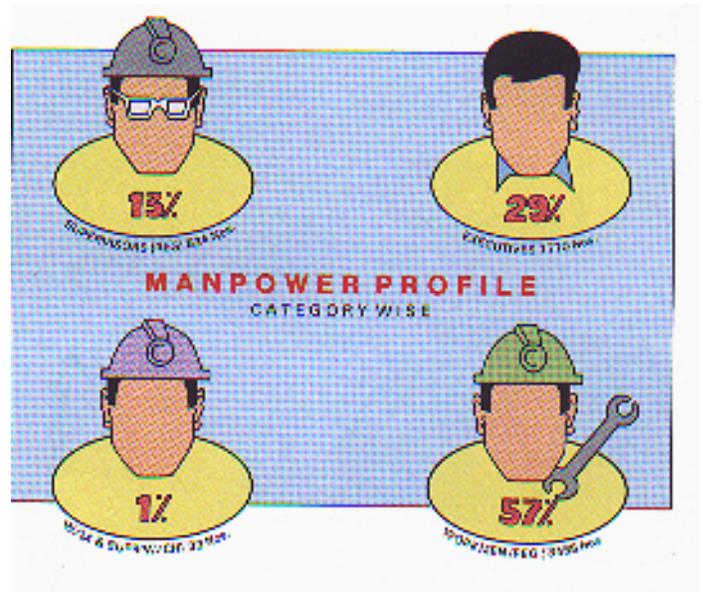
The World Bank's total commitment to POWERGRID amounts to US\$ 1.50 billion for various projects and organisational studies.

ADB has extended financial assistance, as grant, to the tune of US\$ 6,00,000 for undertaking a study on "Bulk Power Transmission Tariffs and Regulations". Further, they are considering a loan of US\$ 250 million for a basket of projects under the North East Power Project.

OECF, Japan has so far committed a total of Japanese Yen 24.2 billion for the Gandhar, Kathalguri & Faridabad Transmission Projects.

EIB is co-financing the Southern Region System Coordination Centre (SRSSC) project to the extent of European Currency Units (ECU) 55 million (about Rs. 198 crores).

In addition to mobilisation of funds from the World Bank, ADB, OECF, Japan, discussions with Overseas Development Administration of UK (ODA), West Merchant Bank (WMB), Banque Indosuez, Paris and Credit Nationale de Paris, has resulted in loan commitments amounting to £ 65 million, £ 59.7 million, FF 206.2 million and FF 172.3 million respectively.



BOARD OF DIRECTOR



R. K. Narayan



T. V. Subramanian



S. C. Parakh



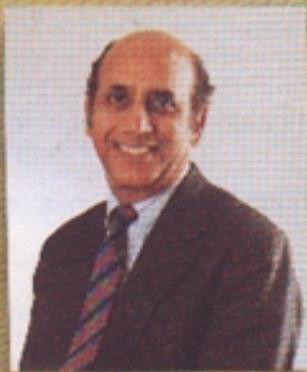
S. K. Chawla



T. Sethumadhavan



A. H. Jung



A. L. Jaggi



H.C. Mital

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 35 years in various fields in the Power Sector.

Born on July 29, 1937, Mr Naryan 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 1st November, 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 organization 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.

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) on 28th September, 1990.

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

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

Born on July 27, 1938, Mr. S.C. Parakah, graduated in Mechanical Engineering (1961) and joined POWERGRID on 15th November, 1991 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.

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 on 25th June, 1993 as Director (Personnel), POWERGRID.

A.L.Jaggi, Director(Operations), POWERGRID

Born on June 1, 1939, Mr. A.L.Jaggi has graduated in Electrical Engineering from Punjab Engineering College, Chandigarh in 1961 and has attended specialized training in Commissioning of Power Plants in India and Advanced Power Sector Management Training in England.

Beginning his career as an Executive Engineer with Government of Himachal Pradesh, he rose to the position of General Manager in NHPC and later joined POWERGRID as GENERAL MANAGER, NORTHERN REGION-II. Mr. Jaggi was appointed as Director (Operations), POWERGRID on 7th December, 1993.

T. Sethumadhavan, Jt. Sec.& Financial Advisor, Ministry of Power

Born on 15th February 1942, Mr. Thayyil Sethumadhavani 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 and was appointed as Director, POWERGRID w.e.f. 11th July,1991.

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 matter 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. He is Director, POWERGRID, since 26th July, 1991.

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

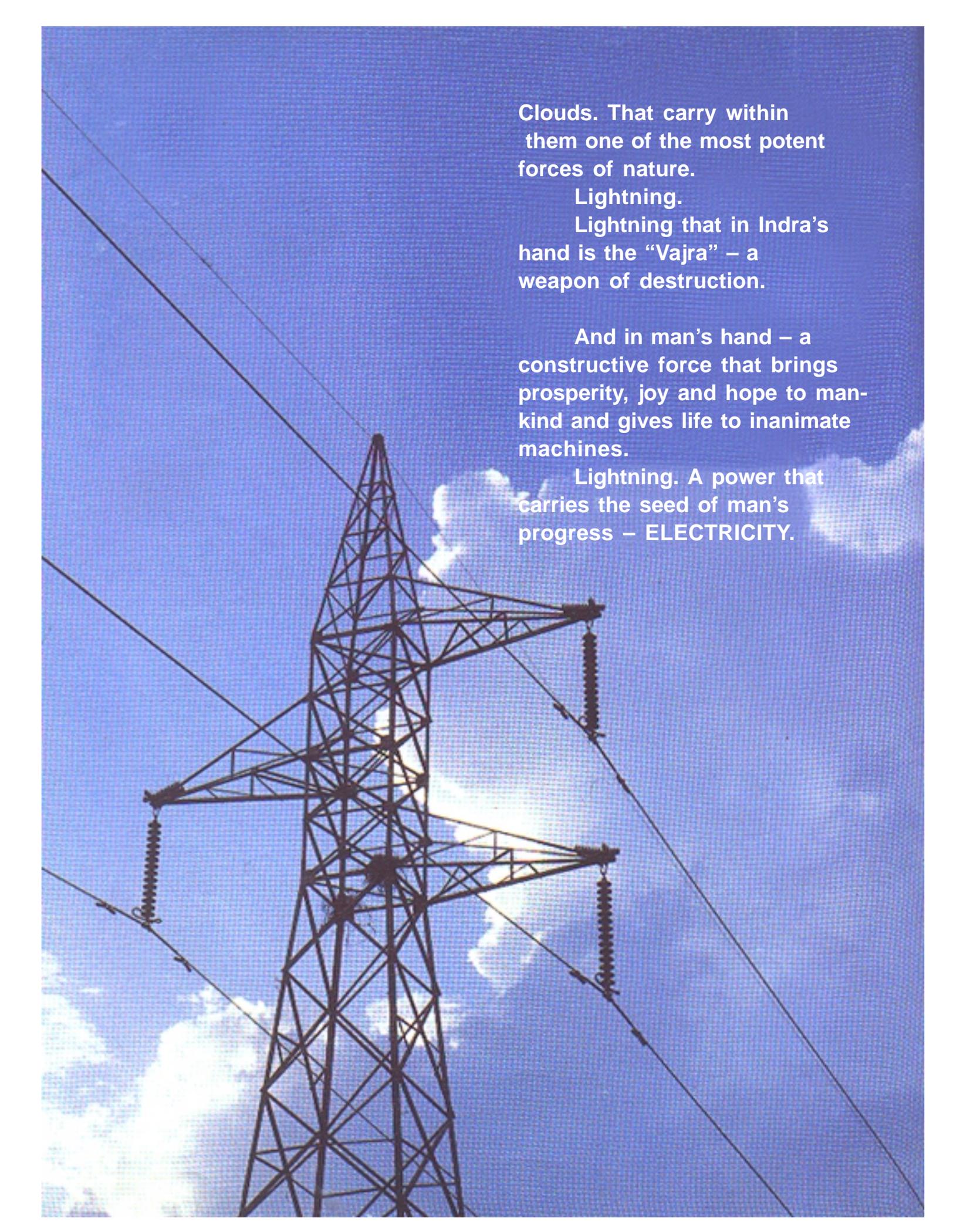
Born on October 2, 1937, Mr. H.C. Mital completed his B.E. (Electrical) in 1957. As Member (Power Systems), CEA, he is deeply involved with the formulation of policy on Power Transmission and Distribution in the country and has also substantially contributed to the development of the corporation in its formative stages. He is director, POWERGRID since 3rd December, 1991.

Company Secretary : Shri. P. D. Tuteja

Statutory Auditors : M/s. Laxmi Niwas & Jain, Chatered Accountants, Hyderabad. M/s. Batra Sapra & Company, Chatered Accountants, New Delhi. M/s. Sri Associates, Chatered Accountants, Calcutta. **Bankers** : Canara Bank, State Bank of Hyderabad, Union Bank of India, Central Bank of India, Bank of Baroda, Indian Overseas Bank, State Bank of Bikaner & Jaipur, State Bank of Patiala, State Bank of Travancore, State Bank of India, Oriental Bank of Commerce, Corporation Bank, Punjab National Bank, Punjab & Sind Bank, State Bank of Mysore, Indian Bank, United Bank of India, UCO Bank, Syndicate Bank.

Registered Office : Hemkunt Chambers, 10th Floor, 89, NehruPlace, New Delhi 110019.





Clouds. That carry within
them one of the most potent
forces of nature.

Lightning.

Lightning that in Indra's
hand is the "Vajra" – a
weapon of destruction.

And in man's hand – a
constructive force that brings
prosperity, joy and hope to man-
kind and gives life to inanimate
machines.

Lightning. A power that
carries the seed of man's
progress – **ELECTRICITY.**



CHAIRMAN'S SPEECH

POWER VISION 2000 PLUS



Gentlemen,

It is my pleasure to be here with you on the occasion of the fifth Annual General Meeting of POWERGRID. We are yet into another year full of commitments and challenge ahead of us on the path towards our vision. Before delving further on the theme chosen for today, let me share with you some of our recent achievements and performance highlights.

■ CONSTRUCTION PERFORMANCE

During the year, the construction performance has been excellent. We could string 1,115 ckt. kms. of transmission lines and commissioned 2,140 MVA of transformation capacity surpassing the MOU target. You may be happy to note that your company has earned "**Excellent Rating**" as per its MOU with the Ministry of Power for the year under review.

■ OPERATIONAL PERFORMANCE

In the area of operation, today your company owns and operates a total of more than 23,000 ckt. kms. of transmission lines consisting of 400 KV,

220KV and 132 KV transmission lines with the total transformation capacity of more than 20,000 MVA, distributed over 50 sub-stations, thereby making it as one of the largest bulk power transmission systems in the world. POWERGRID has been making concerted and vigorous efforts to maintain one of the largest transmission systems in the world which is traversing in difficult climatic and geographical terrain. POWERGRID has been consistently maintaining the system above 97% availability factor which is comparable with the international standards. POWERGRID has also developed adequate expertise for hotline maintenance of transmission lines.

■ COMMERCIAL PERFORMANCE

On the commercial front we could make a positive headway by collecting a revenue amounting to Rs. 530 crores. The outstanding amount as on end of March 1993 works out to more than six months of billing. This high amount of outstandings were largely inherited from the transferor organisations. As you know, POWERGRID had started billing and realisation only from April 1993 onwards and since then it has been able to check the mounting outstanding dues. In this respect, POWERGRID had taken major steps towards timely recovery of transmission charges and bringing down the outstanding arrears. As a result of vigorous follow up and with the assistance of Ministry of Power, Government of India, POWERGRID got the Cabinet Approval for a Central Appropriation to the tune of Rs. 302.21 crores for off-setting the accumulated dues of various SEBs. To check further recurrence of the build-up of dues of various SEBs, POWERGRID took the pragmatic approach of referring the problems to Central Electricity Authority (CEA), who in turn revised the tariff based on the study. These tariffs were notified in the month of January and April 1994 to resolve the long pending disputes.

■ FINANCIAL PERFORMANCE

During the year, your Corporation has established consistent Institutional growth by registering a profit of Rs. 187.88 crores. During the same period your Corporation had been able to streamline its finance and accounts through reconciliation of accounts with the transferor organisations. POWERGRID could also get the approval for capital restructuring of the organisation by converting Rs. 567.50 crores of Government of India (GOI) Loans into Equity. However, profit for the year 1993-94, was marginally lower compared to last year, mainly due to lower tariff notified for the ex-NTPC system as compared to our past billing, though the revenue for the year under review has grown marginally compared to last year.

■ FUNDS MOBILISATION FROM INTERNATIONAL FINANCIAL INSTITUTIONS

International financial institutions like the World Bank, the Asian Development Bank (ADB), Overseas Economic Cooperation Fund (OECF) of Japan, European Investment Bank (EIB) and others have expressed their confidence in our capabilities to operate, monitor and construct the national and regional power grids.

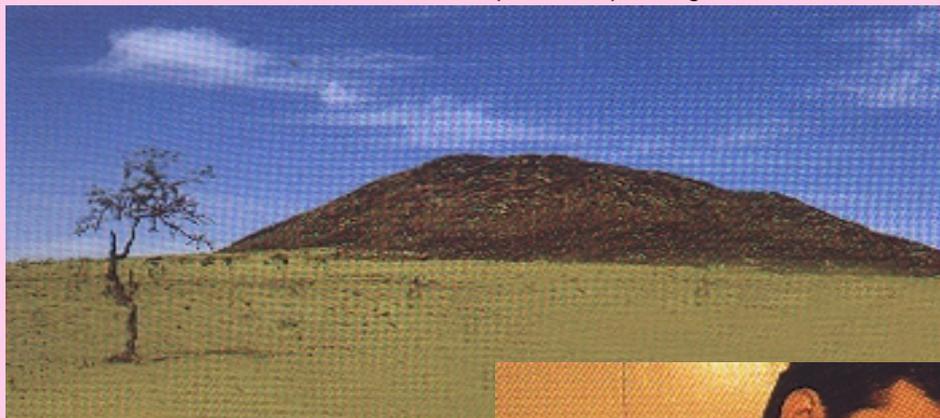
The World Bank's total commitment to POWERGRID amounts to US\$ 1.50 billion for various projects and organisational studies. ADB has extended financial assistance, as grant to the tune of US\$ 0.6 million for undertaking a study on "Bulk Power Transmission Tariffs and Regulations". Further, they are considering a loan of US\$ 250-300 million for a basket of projects. OECF, Japan has so far committed a total of J Yen 24.2 billion for the Gandhar, Kathalguri & Faridabad Transmission Projects. EIB is co-financing the Southern Region





Load Despatch & Communication project to the extent of European Currency Units (ECU) 55 million (about Rs. 198 crores) and has further indicated its interest in funding some other projects of POWERGRID to the extent of ECU 100 million, as also its willingness to participate in the POWERGRID joint Venture equity.

In addition to mobilisation of funds from the World Bank, ADB, OECF, Japan, discussions with Overseas Development Administration (ODA), UK, West



Merchant Bank (WMB), Banque Indosuez, Paris and Credit Nationale de Paris, have resulted in total loan commitments amounting to, FF 396 million and £ 59.69 million along with £ 65 million as ODA grant.

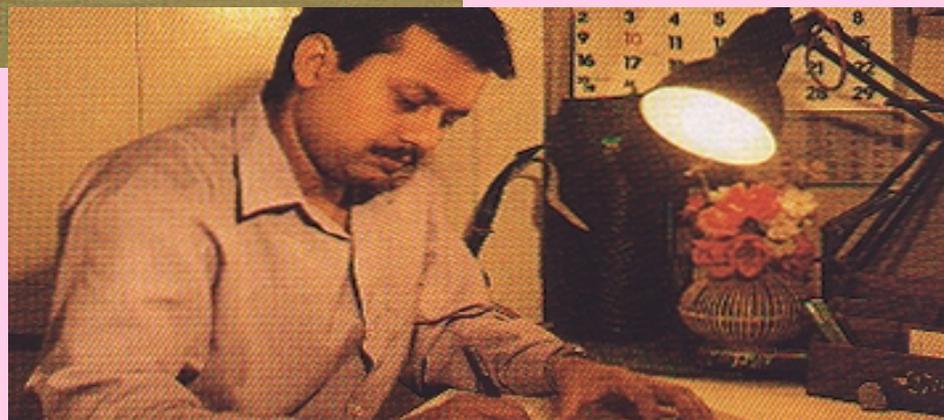
With this brief recapitulation of the performance of your organization, I would now like to elaborate upon POWER VISION 2000 PLUS.

Today, the Indian power sector looks forward to new challenges due to the far reaching changes which have been introduced at national and international levels. Unbundling of the power system has been initiated by segregating transmission from generation and distribution. Liberalisation of policy for investment by private sector in power along with incentives to mobilise resources and its impact on institutional, operational and commercial frame work calls for new strategies and options. Time has come to take hard decisions for gearing up efficiency, for turning around the State Electricity Boards (SEBs) and for operational and commercial efficiency of other utilities in the Indian power sector, to meet the

financing requirements of the power sector and for providing the people of the country reliable and economical service.

■ STRATEGIC INTER-REGIONAL LINKS

In order to reduce regional grid collapses, to provide emergency assistance on a mutual basis and for transmission of surplus power from a power surplus region to deficit



region(s), POWERGRID plans to construct inter-regional links between neighbouring regions. Inter-regional links already exist between Northern and Western regions (500 MW HVDC) and Western and Southern regions (400 KV AC link between Chandrapur and Ramagundam). A *synchronous link* is under construction between North-Eastern and Eastern regions. Another synchronous link between Eastern and Western regions is being planned. POWERGRID is going to construct *asynchronous links* between Southern and Eastern regions (500 MW HVDC) as well between Western and Southern regions (1000 MW HVDC) in the next five years. These

inter-regional links will lead to considerable economies in power generation and increased power availability. It is pertinent to note that the studies conducted by CEA in the year 1991 on perspective plan of "National Power Development upto 2006-7", reveal that inter-regional links will save about 10,000 MW power generation capacities by the end of the 10th Plan. Similarly, a study conducted by the World Bank in year 1991 on "Long Term Issues in Indian Power Sector" indicates that inter-linking of region grids would reduce the unserved energy demand by 50% and accrue benefits of Rs. 1,100 crores per year.

■ STATE-OF-THE-ART TECHNOLOGIES

Keeping in view the ever growing needs of power, requirements of long distance transmission and inter-regional links, POWERGRID is contemplating to induct sophisticated technologies for

ensuring reliability of system which includes HVDC Back to Back system (for regulated flow of power and avoiding transmission of disturbances from one grid to another) ; HVDC and 800 KV transmission system (for long distance transmission); series compensation and static var compensation ; phase shifting transformers (to adjust flow of power in parallel circuits) and flexible A.C. transmission system.

■ SOUTH ASIAN GRID

Some of India's neighbouring countries has vast hydro-potential like Nepal and Bhutan but they do not have adequate





arrangements, accounting procedures and settlement system etc., thereby developing mutual trust.

POWERGRID will eventually be operating the integrated National Grid for India with established common and consistent technical standards throughout India. It will act as a catalytic agent to attract investments in the power sector through improved operational performance. It will unfold itself as a customer- led, customer focused organisations and will help other utilities to maximise the utilizations of their assets and achieve improvement in their performances for an enhanced growth of the Indian power sector.

demand or finance to harness it. POWERGRID's long term perspective plan looks forward to the formation of the Southern Asian Grid by linking its transmission facilities to the neighbouring SAARC nations. In this endeavour POWERGRID is already exchanging power with Bhutan from its Chukha hydro-electric project and has also started a dialogue for interconnection and power sharing arrangements with other neighbouring countries, viz. Nepal and Bangladesh to take advantage of the diversity of resources and load pattern for mutual benefit of each other.



■ AUGMENTATION OF REGIONAL LOAD DESPATCH AND COMMUNICATION FACILITIES

Future expansion programme envisaged in our country demands basic infrastructural facilities like Regional Load Despatch & Communication Centres for data acquisition, real time monitoring and control of the grid system. Considering its importance for the smooth operation of Regional and National Power Grids, POWERGRID has undertaken implementation of state-of-the-art unified Load Despatch and Communication (LD&C) facilities in

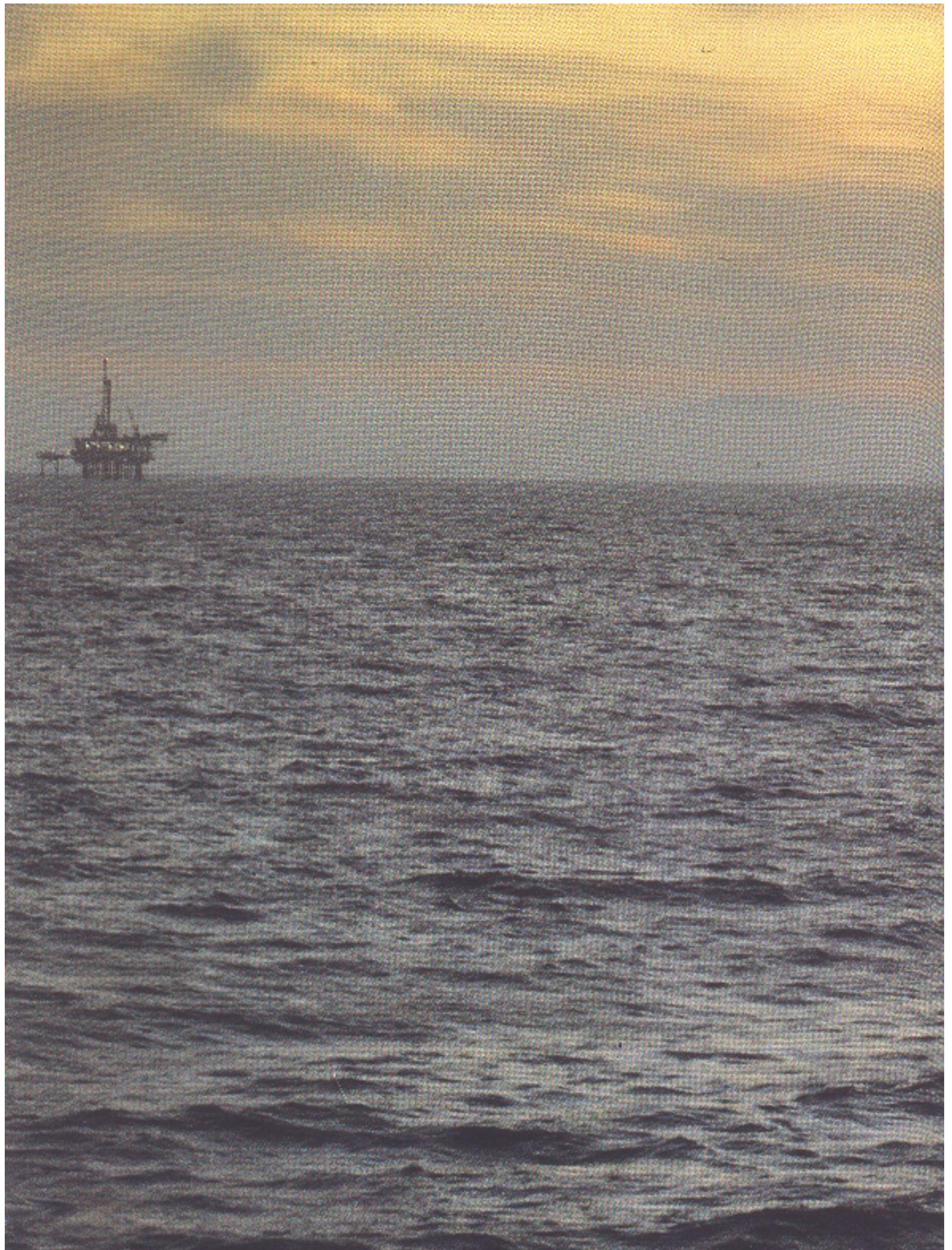
all the regions of the country. The LD&C facilities at State level, Regional level and National will be established and equipped with modern computer based data acquisition and monitoring system for optimal operation of the system.

With the establishment of the above facilities and appropriate institutional arrangements in all the region, POWERGRID will evolve as a co-ordinator and facilitator in respect of bulk power transfer between various interested parties. It will strive to ensure merit order despatch, uniform technical and operating conditions, providing non-discriminatory access to the grid to all participants, transparency in respect of reporting and review procedures, competitive sourcing of new generating capacities, commercial

• POWER POOLING/ TRADING OF POWER

An individual system, unconnected with neighbouring systems, could find its resources depleted and continuous supply in jeopardy, as is the case in most of the SEBs when maintenance of the system, excessive peak demand and loss of generation all occur at the same time. However, operating as a single system the Regions/SEBs can rely on the capacity of the transmission ties between each other and pool to provide the surplus power to meet the continuous demand with increased reliability of supply.

To ensure that most economical energy and more firm power is available to a combined system through pooled operation of integrated





resources than if each entity operated on its own, power trading has become imperative in the Indian power sector.

POWERGRID will promote creation of regional power pools in all the regions, on a voluntary cooperation basis consisting of public and private utilities including non-utility generation and non-conventional energy systems for the benefit of the members. Members of the pool will continue to have basic responsibility for operating their plants and serving their consumers. SEBs and distribution companies can agree on short term and long term power and energy transactions with those parties which have lower incremental cost surpluses, at mutually agreed prices, and thereby avoiding generating sources with higher incremental cost.

POWERGRID will co-ordinate closely the generation dispatch and transmission to optimise 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; a forum for coordinating generation maintenance schedules; monitor tie-line flows for ensuring system reliability and informing the parties accordingly; deviations from agreed transactions; information for raising bills and settlement etc. to ensure most economic generation of power based on commercial principles.

■ SCHEDULING AND DISPATCH ARRANGEMENTS

The REBs are presently responsible for scheduling and dispatching the regional power system which includes maintenance schedules, settings of tariffs for inter-agency power transfer and billing etc. Consistent with the need to preserve the commercial and operational freedom of SEBs to retain responsibility for scheduling and dispatching their own plants within the "loose pool" arrangement, decision is required on how to treat plant owned by central generating companies. There are a few options available which need careful consideration from this aspect:



➤ Responsibility for scheduling and dispatching the plants could rest with companies themselves

In this case, the companies would participate directly in trading through the power pooling arrangements. The central generating organisations would enter bilateral contracts to sell capacity and energy to SEBs and themselves decide whether to generate and fulfil those contracts or instead purchase energy more inexpensively on the day from other generators.

➤ Responsibility for scheduling and dispatching the plants could rest with the concerned SEBs

In this case, the SEBs would specify the physical energy requirement from the plant with which they have "contracted" and require the plant to operate at that level. With capacity and energy "allocated" or "contracted" to more than one SEB, the final dispatched output from the plant should be the sum of all SEBs requirements. If all SEBs act to minimise costs, the plant will dispatch only if it falls within the regional/national "merit order", so long as SEBs are purchasing on a two part, capacity and energy charge

basis. Failure to meet the requested load would trigger availability penalties in the form of reductions in capacity charge payments by the relevant SEBs.

➤ Responsibility for scheduling and dispatching the plants could rest with POWERGRID

This would be a mixture of "loose" and "tight" dispatching and pooling arrangements. Whilst each SEB would dispatch its own plant, it would be for POWERGRID to determine the total output of the central generators and each of SEBs portfolio of plant on the basis of information about the cost of each central plant and the cost at the margin of each SEBs generation sub-system.

➤ Inter-Utility Trading

In this regard, the role of POWERGRID is of vital nature for the power sector, as it will like to act as an administrator rather than be principal in the energy transactions, for reasons of financial risk and avoidance of central control. The broad spectrum of roles that POWERGRID can take for operating loose power pools as facilitator/clearing house for the power trading between the States to enhance the inter-state cooperation for commercial power exchange arrangements are as follows:

• Purely Administrative

Here POWERGRID would simply provide a financial settlement service and it would be for the SEBs to seek out and agree to bilateral transactions. A form of price declaration process will be provided within the pool whereby each SEB can elect to declare a price at which it is willing to buy/sell energy. It will be left to the SEBs, on the basis of bids, to determine bilateral arrangements, with the rules for determining the trading price specified and agreed to in advance, POWERGRID will play no role in determining the transactions to take place.

• Facilitator

In this case, POWERGRID will act as recipient of all the SEBs price declarations, and will determine the pattern of bilateral transactions to take place, the basis of which will be established and agreed by all parties including the SEBs.





In either of the options POWERGRID will entail to resolve the issues related to inadvertent trade; free-riding; treatment of losses; transmission constraints and will clearly specify grid support services and proposed arrangements for operational and financial treatment of grid system services.

POWERGRID will play a vital role in settlement system viz. accounting for trading. It will provide information on metered power and energy flows, prices, transmission pricing aspects of contractual agreements and the trading rules. It will compute applicable charges in accordance with the contractual and trading arrangements for each generator to their customers. POWERGRID will not have a commercial interest or assume related risks in the settlement system. It will provide information on invoices and credits to all the participants to facilitate settlement of accounts. POWERGRID will help in reducing the overall cost of supply by helping SEBs trade power in accordance with merit order dispatch, without actually participating in the transactions for its own account.

➤ Long Term Perspective

After implementation of the bulk power and transmission tariff reforms and completion of the system coordination and control facilities and establishment of inter-regional links, our country will have a national power grid operating with an increasingly competitive and co-ordinated generation and transmission system. The emerging industry structure will consist of 1) central, state and private generating companies including non-utility generators and non-conventional energy sources; 2) POWERGRID as national grid company; 3) state and privately-owned distribution. In this scenario, power trading is initially likely to be dominated by long-term contracts between generators and SEBs, distribution companies as well as bulk consumers (capacity contract trading) supplemented by short-term market (spot trading) with prices reflecting supply and demand on short term basis. The spot trading is then likely to gradually dominate and sophistication will increase as the participants gain experience in the operations of the power pools and realise the

benefits and uncertainties of spot trading in supplementing contract trading. SEBs reliance on purchase of power from central and private generators will steadily increase which will generate will pressures on SEBs to become financially and commercially viable. At the same time generating companies will have to increasingly complete to sell their output to the viable SEBs, private distribution companies and bulk consumers. Also the new private generators will be able to reach the consumers without going through the intermediation of SEBs. Thus, third party access to transmission network of POWERGRID and SEBs will become mandatory *sine qua non* for active markets which will provide competitors direct access to customers and will put pressures for more efficient system.



For safe and reliable operational limits of the grid, POWERGRID will ensure optimal location and size of the power stations. POWERGRID will keep on upgrading the organisational arrangements of pooling and trading through joint planning process with the participants to ensure that supply to the esteemed customers throughout the interconnected system is consistent with environmental, safety and reliability criteria and overall performance meets the agreed standards.

■ FINANCIAL MANAGEMENT

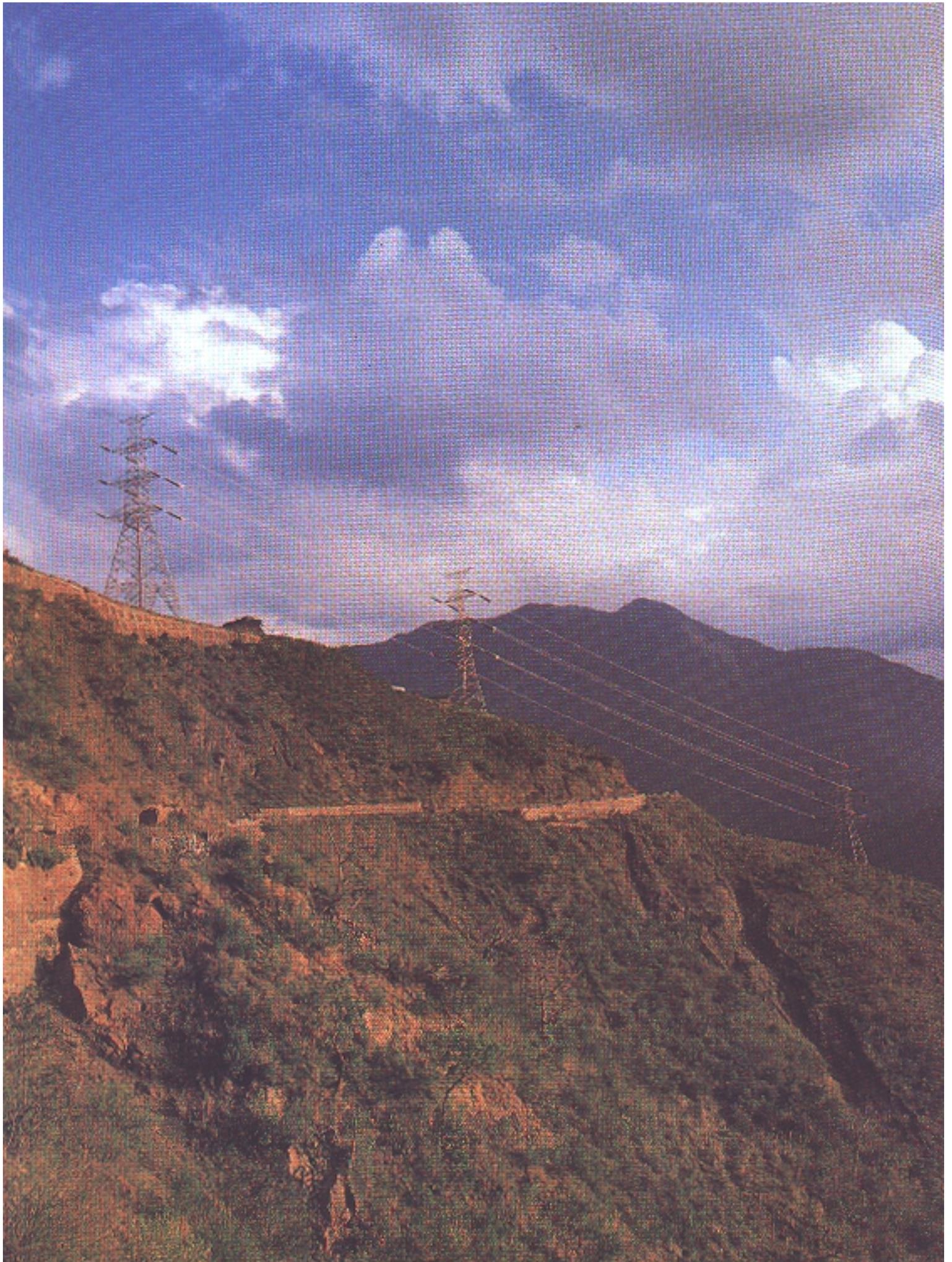
➤ Strategic Investment

As a first step, POWERGRID has decided to address the issue of under-investment in the transmission sector to

ensure that the existing installed generation capacity and new generating capacity being added are full utilised. POWERGRID has thus allocated about 60% of its investment programme during the Eighth Plan for establishment of the missing transmission links and for simultaneous completion of transmission system associated with ongoing generating stations for evacuation of power from these new stations. In addition, about 30% of investment during the same period had been allocated for system improvement and grid strengthening schemes, viz. transmission line and substation reinforcements and load dispatch and communication facilities. The balance investment will be made in new generation linked schemes.

➤ Budgetary Support

Considering the present financial status of SEBs, it is difficult to imagine how most of them will be in a position to bear additional burden of capital servicing cost of such facilities if the same are to be built by POWERGRID through raising resources from financial market and charging full commercial tariff to start with, as is presently envisaged. Considering the vital necessity of building these facilities without any delay, it is imperative that we explore the possibilities of reducing the burden of capital servicing cost on the already financially squeezed SEBs by finding out some via media. One of the ways in which this could perhaps be achieved is by obtaining some element of budgetary support supplemented with an initial subsidy for a period of about 5-10 years on the capital servicing cost of





these facilities, while the SEBs and power sector are being restructured to bear the full commercial cost of all the facilities in the long run. While this budgetary support and initial capital servicing cost subsidy may look large in financial terms, in economic terms, these facilities will have a pay back period of hardly 2-3 years each. Extending such limited budgetary support and financial subsidies routed through POWERGRID will not be a burden on the economy as a whole and will go a long way in optimal integrated development of power sector for fulfilling the vital needs of the growing economy.

■ INSTITUTIONAL RELATIONSHIP

➤ Major Power Sector Players

The Indian power sector is quite complex and includes a large number of central agencies that are superimposed on state power sector. The central electricity statutes—the Indian Electricity Act, 1910 and The Electricity (Supply) Act, 1948 – govern the structure of the power sector in India. Major players in the power sector include the Administrative Ministry i.e. Ministry of Power (MOP), Central Electricity Authority (CEA), State Electricity Boards (SEBs), Regional Electricity Boards (REBs), a large number of other organizations like NTPC, NHPC, NEEPCO, etc. which have been set up with specific functions and responsibilities.

POWERGRID was established by the government under its ownership primarily to promote development and operation of integrated power systems and for this purpose to establish and operate transmission facilities for bulk power transfers/exchanges within and across the regions and encouraged trading of power based on sound commercial principles.

Keeping in view the state of affairs in the Indian Power Sector, National Development Council (NDC) Committee on Power was formed to analyse and submit their recommendations on various aspects of Power Sector including its organisational, managerial and financial structure, improvement in operational performance, tariff policies, matters relating to consumer relation and role of the pri-

vate sector. The NDC Committee in their draft report has already acknowledged that building of National Power Grid by POWERGRID will ensure speeding up of power sector reforms.

➤ Dovetailing Private Sector

POWERGRID will also dovetail the transmission system required for private/joint sector projects (not confined to a particular state only but may extend to different states in the region and may even go beyond a particular region) into the overall transmission system in the States(s)/Regions(s) with the objective of ensuring that the generated power is transmitted to the load centers in a smooth, economic and reliable manner. Further, this will also ensure that any surplus generation is optimally utilised.

Since entry of Independent Power Producers (IIPs) is on the anvil in the Indian power system, it has become necessary to provide Third Party Access (TPA) to transmission system, POWERGRID will promote effective access to transmission grid to the private generators for competitive development of bulk power markets. It will provide competitors direct access to customers and will put pressures for more efficient development of power system.

➤ Regulatory Aspects

There is a need for establishment of an independent regulatory body for power sector on the line of Federal Energy Regulatory Commission (FERC), USA, which could regulate private, states and central generating, transmission and distribution companies; endorsement of bulk power and transmission tariffs; establish appropriate statutory standards for smooth and fair system operation and audit of compliance of such laid down statutory provisions. This regulatory body is also expected to ensure transparency in all the facets of the power sector operations and to enforce efficiency norms.

UNBUILDING OF POWER SYSTEM IN THE STATES

The process of unbundling of the power system has so far been focused in the Central Sector and the same has to be carried through to the State Sector for realising the full potential and benefits of the same. It will be worthwhile consider-

ing segregation of SEB activities into generation, transmission and distribution as independent division/entities. The concept of unbundling of SEBs as promoted by us has already been accepted and states are seriously considering the same. The State Government of Orissa has already announced unbundling their SEB. State owned generation can be supplemented by promoting Independent Power Producers (IPPs) either at the State Grid or at the Regional level connected through POWERGRID owned regional network. The distribution system owned by the State could possibly be considered for restructuring into area distribution companies and could possibly be made to compete with private distribution companies which are likely to enter, though in a small way initially, in some of the major commercial centers. The transmission part of SEBs will work in tandem with POWERGRID with mandatory wheeling of power for all the generating organisations including private sector and non-utility generation including non-conventional sources of energy. At the same time generating companies will have to increasingly compete to sell their output to the viable SEBs, private distribution companies and bulk consumers. This will then ensure optimum system design and efficient, secure, economic and reliable transmission of power in the Indian power system.

■ CONCLUSION

As we try to peep into the coming century, many issues will emerge from competition and customer needs. I am sure, to meet the needs of 21st we will respond in a positive and professional manner. The reforms, which we are passing through, would lead to redefinition of many activities and will spur the search for new structures and approaches in the power sectors for growth.

R.K. NARAYAN
Chairman &
Managing Director

Place: New Delhi

Dated: 27th September, 1994.



DIRECTORS' REPORT

To
The Members,
Gentlemen,

I am privileged to present to you on behalf of the Board of Directors, the 5th Annual Report on the operations of the Power Grid Corporation of India Limited (POWERGRID), together with the Audit Statement of Accounts for the financial year 1993-94.

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 organisations in the power sector. POWERGRID was incorporated in 1989 with an initial authorised share capital of Rs. 5,000 crores and charged with the mission of establishment and operation of Regional and National Power Grids to facilitate transfer of power within and across the Regions with reliability, security and economy on sound commercial principles.

In accordance with the Government's decision of transferring the transmission systems 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 Ltd. 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 16, 1993 and March 23, 1993 respectively and 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. Similarly, the transmis-



sion system associated with Neyveli Lignite Corporation Limited (NLC) has been transferred to POWERGRID by way of Act No. 56 of 1994 dated September 14, 1994 with retrospective effect from April 1, 1992.

While in the case of NJPC, no separate agreement is required as their transmission work was handled by NHPC, the transmission business of Nuclear Power Corporation Limited including ongoing and new projects has also been taken over by POWERGRID on August 28, 1991. The Memorandum of Understanding (MOU) for transfer of assets with THDC was signed on October 27, 1993. However, the manpower associated with the transmission system was transferred with effect from August, 1993.

■ ORGANISATIONAL DEVELOPMENT AND CONSOLIDATION

After successful completion of the first phase of POWERGRID's establishment and development, comprising taking over of the transmission assets of all Central Generating Companies in 1993, POWERGRID has now embarked on the second phase of its development. The management of the Southern Regional Load Despatch and Communi-

cation Centre (SRLDC) located at Bangalore was taken over by POWERGRID on January 1, 1994.

Immediately after taking over the SRLDC, POWERGRID took up a review of the system parameters (voltage and frequency) with a view to bring about improvement. Detailed studies were carried out on the very poor voltage profile that was then existing, and the possible remedial measures. The corrective actions taken based on system studies, with the active support extended by the SEB, resulted in a dramatic improvement in voltages at nodal 400 KV substations e.g. Bangalore, from 300-310 KV to 340-350 KV level. Further, studies have been carried out for finding out ways of all round improvement in system parameters. Findings and recommendations are presently under discussion, with the constituent members, prior to their implementation.

Frequency has, however, been a much more serious problem, and its correction requires long term remedies. Increasing overdrawal by some constituents has greatly aggravated the situation, and in spite of perpetual cautioning from SRLDC, a series of grid disturbances occurred during March 1994. The matter has been taken up at the REB level and a plan has been formulated to bring down the overdrawal by the defaulting constitu-



It is expected that order for these meters for Southern Region should be placed in the near future.

Plans are also being drawn up for immediate reinforcement of other areas e.g. operator training, system studies, contingency analysis, protection co-ordination, control room facilities, communication etc. Assistance from the National Grid Company Plc., UK (NGC) in system operation is being taken under an inter-utility collaboration, financed by ODA, UK.

■ CONSTRUCTION PERFORMANCE

➤ Programme for the year

Construction performance for the year 1993-94 has been commendable and has surpassed the MOU target set for the year by stringing 1,115 Circuits Kms of transmission lines and commissioning of 2,140 MVA of transformation capacity against targets of 1,088 Circuit Kms. of stringing and 1,890 MVA of transformation capacity respectively. With the above achievements POWERGRID earned the 'Excellent' Rating as per its MOU with the Ministry of Power for the year 1993-94.

During 1993-94, POWERGRID completed/commissioned six 400 KV lines and one 220KV line. It also completed/commissioned six new sub-stations.

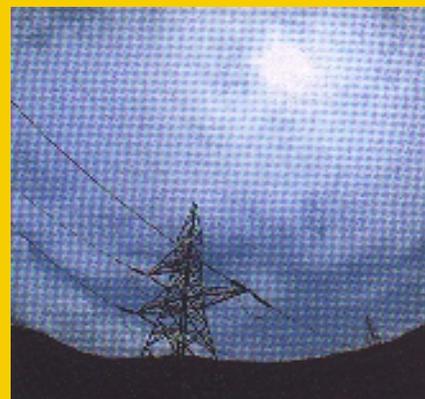
ents, if they still do not self regulate their drawal according to their rightful share in the Central power plants in the Southern Region.

As a long term measure, SRLDC has initiated a scheme of daily scheduling of SEBs' drawals and Central generation, and also a system of daily accounting of overdrawals/underdrawals, to implement the frequency linked surcharge/incentive scheme which had been approved by SREB earlier. POWERGRID is also proceeding with the providing of the special energy meters (the indigenous development of which got started in 1992) through field trials and type testing.

Most of these lines have been completed well ahead of their respective linked generation units. The timely/ a head of schedule completion of POWERGRID's Transmission Lines and sub-stations has come as a result of the effective project management at the critical stages.

➤ Budget Utilisation

During the last year the actual budget utilisation was Rs. 770.09 crores against the Capital Outlay of Rs. 801.30 crores i.e. a utilization of around 96.10%. However, External

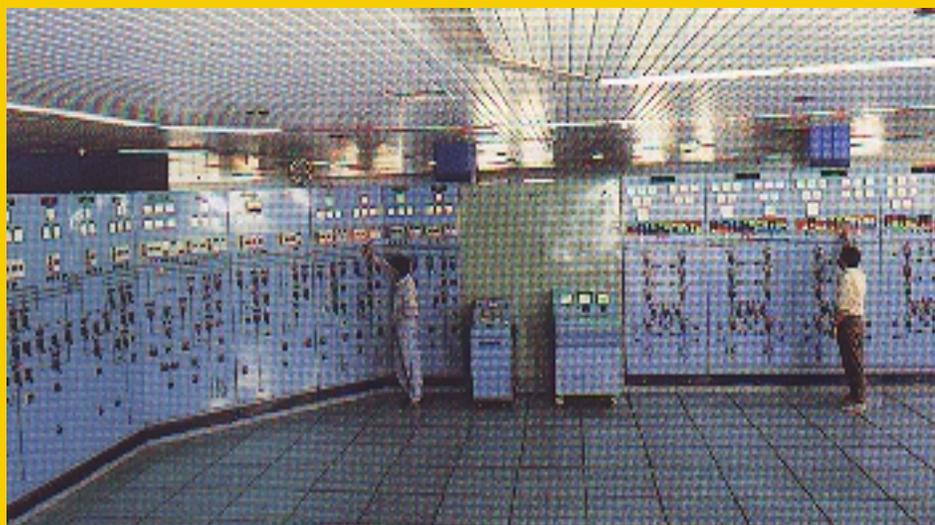


Assistance Budget of Rs. 317.0 crores was fully utilised. The shortfall of Rs. 31.21 crores in the capital Outlay was mainly due to the delay in approval of the new schemes of POWERGRID.

■ OPERATIONAL PERFORMANCE

As on March 31, 1994 a total of 23,500 Circuits kms. of 400/220/132 KV transmission lines and a total transformation capacity of 20600 MVA which includes capacity of Converter Transformers in HVDC system, distributed over 47 sub-stations, are under operation. The operational performance of POWERGRID transmission system had been very impressive in all the five power Regions. Overall Regional average availability of transmission lines during the year 1993-94 was 97.58%, excluding NER.

POWERGRID has developed adequate expertise for Hot Line maintenance of transmission lines. This technique has





been presently adopted in Southern and Western Regions. Further, POWERGRID has implemented a major programme for replacement of insulators of various transmission lines in the North-Eastern Region, which was the main reason for transmission line breakdowns. These measures have enabled POWERGRID to achieve higher availability figures for the transmission system.

➤ System Operation

Southern Region has been plagued with acute low voltage during high demand seasons. After taking over of SRLDC, efforts have been made to improve the voltage in the 400 KV network in February '94 by removal of three line reactors, optimisation of the taps of 400/200 KV transformers and increase in MVAR generation at some of the generating stations near the load centres. The improvement in voltage at critical buses is about 30-40 KV and reduction in energy losses by about 10.3%.

Further to the above steps, studies have been carried out to analyse closing of 220 KV inter-state links and to further improve overall voltage profile in the system. The suggested methods indicate possibility of an improvement of 30-35 KV without any investment and about 50-60 KV improvement with marginal investment in the system. The steps without investment would also result in reduction of losses by about 30-50 MW and about 750 MVAR. Reduction of MVAR draws by marginal investment would further reduce the losses by about 60 MW and about 900 MVAR.

• COMMERCIAL PERFORMANCE

For the year 1993-94 POWERGRID has collected a revenue of Rs. 530 crores. The outstandings as on March 31, 1993 worked out to Rs. 336.50 crores which amounted to more than six months of billings. As you are aware, your organization got effective control over the billing and realisation process from April, 1993 onwards, after the legal transfer of assets was completed. The



outstandings as on March 31, 1993 were, therefore, largely inherited from the transferor generating companies. After POWERGRID commenced billing and realisation of transmission service charges itself, it has been able to arrest the trend of mounting outstanding dues. The major factor for outstanding dues of POWERGRID has been the long pending disputes between the transferor generating companies and SEBs.

➤ Steps taken to reduce outstanding dues

POWERGRID launched a major drive for timely recovery of the transmission charges to bring down the outstanding arrears. Apart from vigorous follow-up with Chairman and Chief Secretaries of the defaulting states directly by POWERGRID and by MOP, advisory letters were issued to the defaulting states, informing them about likely suspension of the transmission services in case of non-payment of transmission charges. Notices for disconnection of power supply to various defaulters were also issued. Hon'ble Minister of Power also addressed letters to Heads of major defaulting States for immediate liquidation of the outstanding dues. This continuous effort has improved the realisations significantly.

To liquidate the large outstanding amount inherited by POWERGRID from generating companies, POWERGRID

took assistance of Ministry of Power Government of India for Central Appropriation. This proposal was approved by the Cabinet to offset Rs. 302.21 crores from the dues of various SEBs.

In order to check the building up of arrears, to earlier levels, immediate steps were taken to resolve the long pending tariff disputes inherited from the transferor companies. These disputes were referred to the Central Electricity Authority by the Ministry of Power for resolution. Based on the findings of CEA, revised tariff rates have been notified. The notification for the Northern Region was issued in January '94 and in the case of Western, Eastern and Southern regions the notifications were issued in April '94. The North Eastern Region is already governed by the Unified Common Pooled Transmission Tariff (UCPTT) already governs the North Eastern Region and as such there are no disputes in billing. The monthly-validated billing amount has been reduced with the issue of these notifications but our percentage realisation as compared to billing has improved and the validated out standings have reduced substantially.

■ FINANCIAL PERFORMANCE

The financial performance of the Corporation has been satisfactory for the Financial Year 1993-94. During the



year the finances of the Corporation got streamlined with reconciliation of accounts with the transferor organisation namely NTPC, NHPC and NEEPCO, as also the transfer of assets from NLC, and Salal-I Project of NHPC located in the State of Jammu & Kashmir. Government of India approval was obtained for Capital Restructuring of the organisation by converting Rs. 567.50 crores GOI Loans into equity, and consequent reconciliation of interest payments with the controller of Accounts of the GOI. As a result of this capital restructuring, the Debt-Equity of the company has improved to a health ratio of 44:56. This would give us the required financial leverage to raise the necessary resources at optimal cost for our ongoing and new projects. It would also reduce the risk profile of your company. Further the reduced debt has also reduced our interest burden by Rs. 71 crores and you would be happy to note that this benefit is a recurring one.

The Gross Block of the Corporation increased by Rs. 708 crores during 1993-94 which includes Rs. 366 crores of Gross Block transferred from NLC. The revenue for 1993-94, however, has

however, is lower as compared to the profit of Rs. 236.61 crores during the last financial year 1992-93.

The marginal growth in revenue and the decline in profits is mainly due to the lower tariff notified for the ex- NTPC system as compared to our past billings. This has resulted in a reduction in the revenue for 1992-93 by Rs. 108.18 crores and this adjustment has been posted in the current year revenue. Moreover, the notified tariff is based on the averaging of the ROE, Interest Depreciation and O&M charges over a five years period. Specifically, the Return On Equity and the interest under the notified tariff is based on the five years average of the Net Fixed Assets. The current year 1993-94 being only the second year of the five years period, the capital employed earns less than the standard rate. Due to a combination of prior period adjustment and the notified tariff being lower than the normative tariff, the profits for 1993-94 are lower. However, the dip in profits in the initial years of the five years block, due to averaging, would be made up in the later years.



grown marginally to Rs. 648.76 crores, compared to Rs. 634.06 crores during the last financial year 1992-93. The profit of the Corporation during 1993-94 works out to Rs. 187.88 crores. During the year an amount of Rs. 200 crores has been transferred to the General Reserve Account. The profit of Rs. 187.88 crores,

➤ Dividend

The board is pleased to recommend for consideration and approval a dividend of Rs. 5 crores on the Equity Share Capital of the company for the Financial year 1993-94.

■ CAPITAL RESTRUCTURING

As reported earlier, to correct the adverse debt-equity ratio of the Corporation at the time of asset transfer, as on April 1, 1992 Government of India was requested to convert a portion of transferred loans into equity so as to maintain a desirable debt-equity ratio, in accordance with the Government of India norms of funding power projects. During the year, this proposal of Capital Restructuring has been approved, and a Government Notification to this effect issued on March 31, 1994.

This Capital Restructuring has led to loans amounting to Rs. 567.50 crores being converted to equity, resulting in an appropriate debt-equity ratio of 44:56 now. This Capital Restructuring will also lead to increased retained earnings of the Corporation on this account, by Rs. 71 crores every year and increased annual internal resource generation by more than Rs. 100 crores, leading to reduced dependence of the Corporation on the budgetary supporter of the Government.

■ FUNDS MOBILISATION FROM INTERNATIONAL FINANCIAL INSTITUTIONS

As indicated last year, the World Bank has extended a new loan of US\$ 350.0 million directly to POWERGRID, which is the first of its kind to be granted to any Central Transmission Agency by the World Bank. The total World Bank Loan commitments to POWERGRID, including the transmission related loans transferred from NTPC and NHPC, amount to US\$ 1,479.5 million. During the year, the process of World Bank loan transfer from NTPC and NHPC has also been completed with the signing of Loan Agreements, Project Agreements & Subsidiary Loan Agreement. Further, the World Bank has expressed happiness and re-imposed faith on POWERGRID, for its performance and commendable institutional growth with the excellent development progress made in all the spheres of its activities and has indicated its interest in financing another project of



POWERGRID to the extent of about US\$ 400 million. Presently, the World Bank is conducting pre-appraisal studies for this future loan.

ADB also, has shown interest to extend financing to the extent of about US\$ 250 million. In the last year OECF has sanctioned J Yen 3.5 billion towards the

The European Investment Bank has further indicated its interest in funding some other projects of POWERGRID to the extent of ECU 100 million, as also its willingness to participate in the POWERGRID joint-Venture equity.

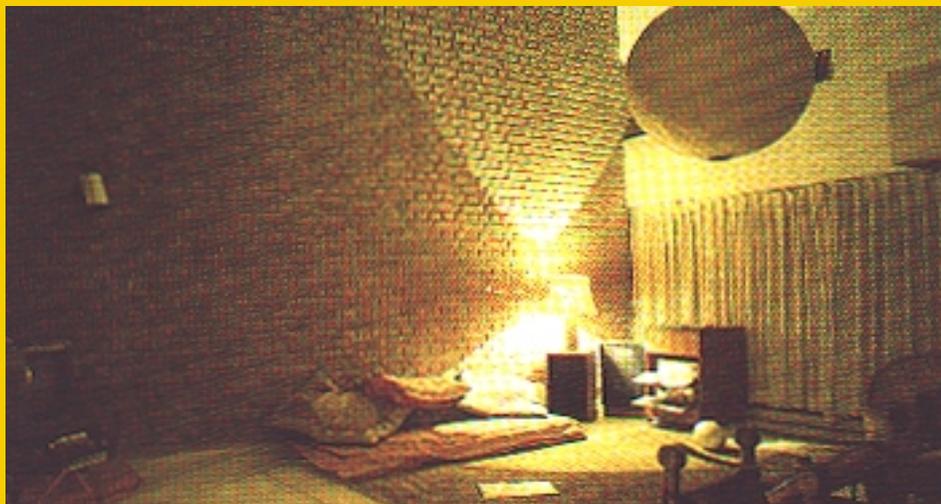
In addition to mobilisation of funds from the World Bank, ADB, OECF of Japan and

■ PROJECT APPROVALS

In the last year, POWERGRID made significant investment decisions regarding various transmission projects amounting to a total of Rs. 1,951 crores. Major projects for which investment approvals were obtained during the year are:

➤ Projects

- i) Kopili Stage 1 Extension Transmission System
- ii) Kishenpur-Moga Transmission System
- iii) Chamera-Kishenpur Transmission System
- iv) Agartala Transmission System
- v) Ganga Valley(Tehri) Transmission System
- vi) Augmentation of Central Transmission System in Northern Region
- vii) Chandrapura HVDC project
- viii) Augmentation of Central Transmission System in Western Region
- ix) Augmentation of Central Transmission System in Southern Region
 - a) Installation of Auto Transformers
 - b) Installation of Reactors
- x) Kaiga Transmission System
- xi) Balipara-Tenga Transmission System



Faridabad Transmission Project which takes the cumulative amount of loans so far sanctioned to POWERGRID by OECF to J Yen 24.2 billion for the Gandhar, Kathalguri and Faridabad Transmission projects.

For financing the Chandrapura HVDC Back-to-Back Project, four Loan Agreements, total amounting to about FF 396 million and UK £ 59.69 million, were concluded and signed during the year. This includes a soft loan from the French treasury amounting to FF 172 million. In addition, an ODA grant of 65.0 million pound sterling has also been sanctioned for financing the same project, as also to provide Technical Assistance for developing system in certain critical areas.

POWERGRID has also signed a loan agreement with the European Investment Bank amounting to ECU 55 million (about Rs. 198 crores) on the 17th of Decemer, 1993. This loan to be utilised for co-financing Southern Region Load Despatch Centre Project, is the first loan from the European Investment Bank to Asian country and will go a long way to implement the SRLDC project in time.

other International Commercial Banks as indicated above, efforts have also been made with some other International/National Financial Institutions/Banks for mobilization of additional funds for our various projects.

■ FUNDS MOBILISATION FROM DOMESTIC FINANCIAL INSTITUTIONS

Subsequent to the excellent credit rating of A1(A one) assigned by Investment Information & Credit Rating Agency of India Limited (ICRA), POWERGRID came out with a Commercial Paper issue amounting to Rs. 67 crores in two tranches which was fully subscribed by the bankers. Similarly, POWERGRID was successfully able to raise bonds worth Rs. 250 crores on private placement basis after they were credit rated as high safety investment instruments at LLA + (L double A plus) by ICRA. A term loan of Rs. 150 crores has also been sanctioned to POWERGRID by UTI.





■ ANNUAL PLAN

The annual outlay prepared for the financial year 1994-95 for POWERGRID is Rs. 1,110.75 crores. This will fund construction of various sanctioned ongoing schemes besides some of the new schemes which are presently in the advanced stages of investment approval.

■ VIII FIVE YEAR PLAN

POWERGRID had submitted to the Ministry of Power a minimum need based programme for implementation of its new and ongoing projects through the VIII Plan Period (1992-97), amounting to Rs. 7,924 crores. However, in view of the severe resource constraints, an amount of Rs. 5,948 crores has been allotted to POWERGRID during the VIII Five Year Plan. This will mainly fund various sanctioned ongoing schemes besides a number of new schemes which are presently awaiting investment approval. The timely availability of investment approval. The timely availability of investment approval to these schemes will go a long way in partly bridging the demand and supply.

■ STRATEGIC STUDIES

In order to fulfil the mission and objectives for which POWERGRID was created, it was found essential to undertake certain strategic studies based on which a detailed action plan for development of POWERGRID could be drawn. The following studies are being/have been undertaken in this direction.

Bulk Power and Transmission Tariff and Regulations Studies

A study was performed by a team led by ECC Inc. Fairfax, Virginia, under ADB grant during the financial year 1993-94. The terms of reference for the study covered the following:

- Assess alternative tariff structures for bulk power transactions and for power transmission and recommend new tariff structures; and

- Assess regulatory requirements and recommend key regulations for transmission and POWERGRID's tariffs as a power transmission service company.

The studies have been completed and the final report received and forwarded to the States and Government of India. A time bound action plan for implementation of the recommendations of the report is being chalked out with the Government of India.



➤ Institutional Development Studies

This study, being funded by the World Bank, is intended to undertake a review of the existing system and develop a comprehensive institutional development plan for implementation. The areas covered under this study are as follows:

- To advise POWERGRID on methods and procedures to improve the control and co-ordination of the regional grids and to promote economic power trading on a commercial basis between State Electricity Boards and public and private generators;

- To define POWERGRID's role and responsibilities in such activities and its relationships with other parties;
- To develop a complementary organisational structure and prepare an institutional development plan.

POWERGRID has appointed a consortium of consultants, consisting of members of Coopers & Lybrand, UK, Power Technologies Inc., USA and Coopers & Lybrand(India) Pvt. Ltd., Delhi for the said study. Work on these studies has already been initiated.

➤ Long Term Transmission System Planning Studies

Rapid changes are taking place in the demand supply balance and there are disparities in the availability of energy resources in various regions. In order to optimise investment in development of the regional and national grids, a study is being undertaken with World Bank assistance for formulating long term transmission expansion plans for the entire country. This study will identify essential elements of the grid to be taken up for construction by POWERGRID in a phased manner. Preparation of a detailed Feasibility Report for the selected major projects from the angle of POWERGRID's investment programme is also included in the scope. The process of appointing the consultants for this project is in an advanced stage.

■ INTERUTILITY COOPERATION

Since its inception, POWERGRID has been vigorously pursuing the policy of interutility cooperation not only within the country but also across the borders in respect of sharing of general and specific information, in this area of operation, policies, procedures, systems etc. POWERGRID has emerged as a vast reservoir of information on the worldwide electricity sector. We have developed a specialised in-house - library of documents/publications/papers on wide ranging subjects in respect of electric utilities and related organisations spread



across various countries such as U.K (NGC, OFFER), U.S.A. (NERC,FERC,MAPP, NEEPOL etc.), New Zealand (Transpower), France (EDF), Europe (UCPTE), Holland (SEP), Sweden (KRAFTNET & VATTENFAL), Norway (STATNET), Japan (EPDC & TEPCO), etc., on topics such as organisational, operationl, commercial, regulatory, managerial etc.

In July, 1993 POWERGRID entered into a Memorandum of Understanding (MOU) with National Grid Company, U.K. (NGC) and in May, 1994 with TransPower, NewZealand, for mutual benefits by way of developing business through exchange of information and expertise, systems and procedures, technologies, technical cooperation, etc. in the future. The MOU with NGC is being funded by a grant-in-aid of £ 2 million as agreed between NGC and Overseas Development Agency (ODA), UK.

The study covers the area of power systems operation, transmission maintenance and visits to selet utilities. Phase-I of the studies covered initial review, information collection information analysis, determination of constraints and the preparation of the report based on these studies. The study covered the area of power system operation, transmission maintenance and study includes implementation of phase-I activities in the specific areas.

In the Phase-I of their programme, NGC team, for information collection and maintenance review, visited India from January 24, 1994 to February 4, 1994. During their visit, NGC team visited projects located in Northern and Southern Regions. They made their presentation at Corporate Office on February 4, 1994 outlining the main differences in maintenance policies adopted by POWERGRID and NGC.

The second visited of NGC team started on April 11, 1994 with visit to the Southern Region which was followed by an internal presentation at Corporate Office on April 20, 1994. The work programme for phase-I was completed in June, 1994 and report was also submitted in June,



1994, Terms of reference for phase-II have been finalised and the work is about to start.

Recently, POWERGRID has signed a joint Venture MOU with NGC, UK, confirming mutual willingness to build and maintain the Northern Region to Eastern Region Inter Connection Transmission Project. It has been agreed that NGC will be the main promoter for this project and POWERGRID, the co-promoter.

■ DESIGN AND ENGINEERING

Foundation stone of 1,000 MW (2x500 MW blocks) of HVDC back to back link at Chandrapur, one of the largest plants of its kind in the world, was laid down by the Hon'ble Prime Minister Shri P.V. Narasimha Rao on December 25, 1993. Since then activities relating to design and engineering of this project have commenced and this link shall become operational by end of 1996. This shall be another big step towards the formation of the National Power Grid.

Design and Engineering for India's first 800 KV Line between Kishenpur and Moga and 400 KV double circuit lines in hilly and snow-bound areas associated with the Nathpa-Jhakri and kolddam, were completed and technical specifications finalised. Endeavour has been made to further improve the performance of the Rihand-Delhi HVDC link by making good deficiencies in the AC system.

➤ Introduction of New Technologies

All Aluminium Alloy Conductors (AAAC) and Polymer insulators are being proposed to be used for the Ramagundam-Hyderabad 400 KV AC line for trial experience. Besides, long rod insulators are also being proposed, to be introduce as alternative to conventional disc insulators.

Optical Fibre Ground Wire (OFGW) is proposed to be used on some of the forthcoming 800 KV/400 KV transmission lines with a view to provide efficient and reliable communication system.

➤ R&D Activities

- i) Development of a "Real Time Digital Simulator" has been taken up in



association with the Indian Institute of Technology (IIT), Kharagpur. This will help in real time monitoring of power system and provide operational support.

- ii) Design for upgradation of 132 KV double circuit line into 400 KV single circuit was developed.
 - iii) The project on performance of insulator strings with failed disc insulators taken up with association of CPRI was completed. The project on electric and magnetic field measurement of AC and DC line and 400/220 KV Sub-stations taken up in association with CPRI is in progress.
 - iv) Software for selection of distance protection relay settings was developed.
- **Conservation of Energy, Technology Absorption and Foreign Exchange Earnings Outgo**

As regards the requirement of disclosure under Section 217(1)(e) of the Companies Act, 1956 read with rule 2 of the Companies Rules, 1998 relating to conservation of energy, technology absorption and foreign exchange earning and outgo information is given in the Annexure-I to this Report.

➤ **System Planning and Studies**

- i) A "Manual on Transmission System Planning Criteria" was finalised in association with CEA.
- ii) Feasibility for evolving transmission system of private sector projects viz. IB Valley TPS, Mangalore TPS, Teesta, HEP and Wardha TPS was undertaken.
- iii) The scheme for evolving EHV inter-connection between Indian Power System with that of Bangladesh and Nepal was studied.

■ QUALITY ASSURANCE AND INSPECTION

The work of finalisation of standard Manufacturing Quality Plans for all power

system packages with individual contractors initiated last year has been completed during this financial year. This has reduced the time factor in the manufacturing activities by 2-3 months, thereby helping in the speedy execution of the projects.

As a first step in inculcating the Total Quality Management Culture within the company, a time bound action plan had already been initiated to obtain ISO-9001 accreditation.

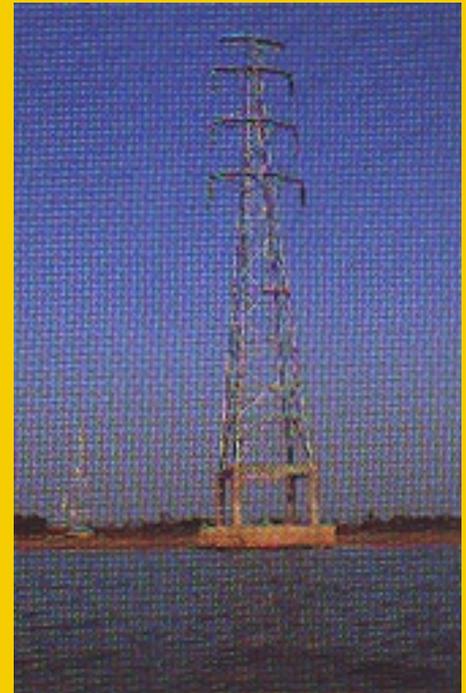
■ CONSULTANCY

Consultancy work for KEB's 400 KV sub-stations was taken up and detailed design memorandum and system study reports were prepared and submitted to KEB. The agreement for the award of consultancy work to POWERGRID in respect of construction of 132/11 kV sub-station at Yanam and installation of load despatch and communication facilities in Pondicherry both for Electricity Department of the Government of Pondicherry are at the very advanced stage of finalisation. Similarly, POWERGRID has just been awarded consultancy work by the West Bengal State Electricity Board (WBSEB) for undertaking Energy Audit and Preparation of System Improvement Scheme of Garia Urban area in south of Calcutta.

Besides these, POWERGRID continued to make concerted efforts to enhance its presence in the area of power transmission consultancy services in the Utility market, especially in the area of Transmission, Distribution and Load Despatch & Communication facilities. The impact had been felt by many Utilities. On the international front also efforts are being made to market our expertise to different countries.

■ PERSONNEL AND HUMAN RESOURCE DEVELOPMENT

POWERGRID is a service-oriented company. Every activity is designed not only to benefit the end user but also for



the development of its invaluable assets- The Human Resources. Human relations in an organisation has assumed tremendous importance in the changing business scenario, for it has been amply well realised that the "Human" is the ultimate resource of an organisation. The changing composition of the work force is creating new challenges for the management of workers. The Personnel Department at POWERGRID has the crucial responsibility of retaining a motivated taskforce which can successfully face the challenges a head. This is achieved by innovative personnel policies, congenial working environment and recognition of achievements.

With the transfer of manpower from various transferor organisations to POWERGRID and with the fast expanding demands of the company, the Human resources has gradually grown in size from 5,138 in 1992 to 6,115 as of today. Out of this executives form 16%, Supervisors 11% and workmen 73%. Since POWERGRID is an amalgamation of employees from Central Sector Power Companies, the manpower has diverse backgrounds and varied work cultures. The percentage-wise breakup of employees absorbed from NTPC, NEEPCO, NLC & THDC is 39%,32%,15%,5%&1% respectively. The number of employees



per ckt. km. of Transmission Line was 3.84 during 1993-94. The manpower growth during 1993-94 has registered an increase of 82% with respect to the previous year.

In keeping with our personnel policy of keeping a motivated work-force, the Personnel Department has introduced a number of new policies and Welfare schemes during the year.

■ COMPTROLLER AND AUDITOR GENERAL'S COMMENTS

Review of the accounts for the year ending 31st March, 1994 by the Comptroller and Auditor General of India u/s 619(4) of the Companies Act, 1956 along with Management's comments on the points raised by the CAG is given in Annexure-II to the Report.

■ PARTICULARS OF EMPLOYEES

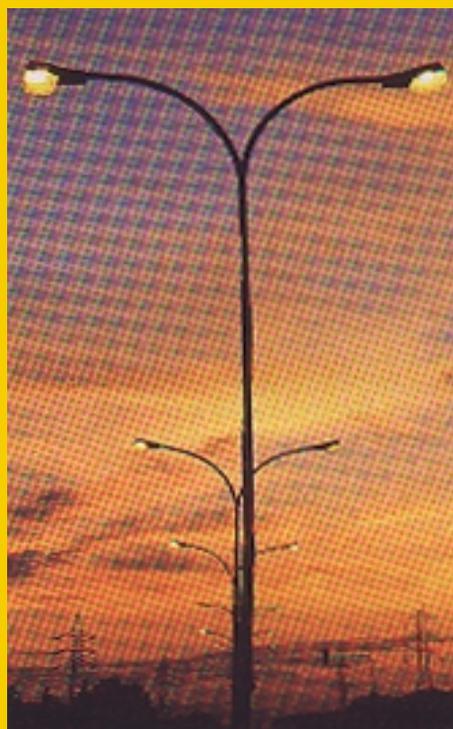
Particulars of Employees, as required under Section 217(2A) of Companies Act, 1956 read with the Companies (Particulars of Employees) Rules, 1975 as amended, are given at the Annexure-III hereto and form a part of this Report.

■ TRAINING

We, at POWERGRID have highly trained work-force in various functions employing a wide spectrum of highly qualified professionals. However, in the present day of technology explosion, we need to upgrade ourselves frequently and swiftly to maintain our winning edge. In order to cope up with the present liberalised economic scenario POWERGRID has realised the vital importance of Training. For imparting high degree of value addition to the work-force at POWERGRID, we have formulated an extensive training calendar with the exclusive objective of keeping our personnel abreast with the latest

technology and state-of-the-art techniques. To meet the challenges of the new business environment, a large number of our executives/non-executives are constantly sent to various institutions/HRD centers for both general and specific inputs.

Total 21,511 mandays of training was imparted during the year and the percentage coverage during the year was 22.79. Out of this 10,407 man days were utilized for Basic Education Programme. During the year 68 young engineers were



inducted in the organisation through the second batch of Engineering Executive Trainees (EETs). The training which the EETs shall undergo for one full year, receives topmost priority in the training and developmental activities of POWERGRID. During this time, the young engineers shall be groomed in all facets of power engineering and general management to enable them to take up the regions of the company as future managers.

➤ Team Building & Cultural Transformation

In order to ensure that POWERGRID successfully reaches its mission and

accomplishes its goals, the management of POWERGRID has been striving to create a new and dynamic work-order within the organisation. With a view to this, POWERGRID organised four top management workshops on Team Building and Cultural Transformation, which involved both the top and middle management. The objective of these workshops was to address the main problem areas of the organisation and to seek a long lasting solution to them. A large number of presentations were made at these workshops which evoked a lot of discussion and brainstorming sessions amongst the participants. These workshops emphasised the role of POWERGRID as a change agent on whom lies the onus of creating a new and rational work order. In order to achieve this, five task forces were formed to look into the various key areas and come out with recommendations. These key areas are: (1) Personnel policies, (2) Grievance handling system, (3) Responsibility mapping & role clarity, (4) Human resource development, (5) Commercial realisation and (6) Communication. These task forces have already submitted their reports which are under review by the top management for implementation of the same.

■ OFFICIAL LANGUAGE

In POWERGRID, the Official Language, Hindi, is being promoted with the active participation of Senior Officials of the Organisation and the Company had made great strides in this direction in a short span. This fact has been duly acknowledged by Parliamentary Committee on Official Language, Department of Official Language and many other Institutions. The role of officers and officials of the various levels of the Organisation in complying with the Official Languages Rules is indeed commendable. The Organisation is committed to train its officials in pursuance of Official Language Rules and the annual programme set for the Purpose. To achieve this goal, Official Language Implementation Committees have been set up to enable officials to set targets as per their abilities. As a result of this, the initiation of original letters, noting &



drafting and other official work in Hindi with ease is continually on the increase.

■ REGIONAL HIGHLIGHTS

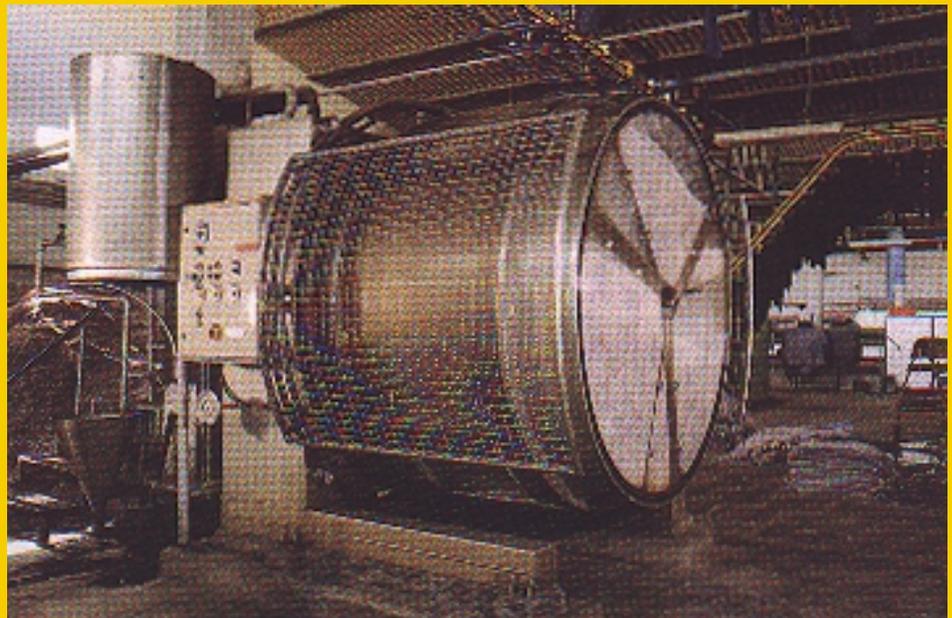
As you know, POWERGRID lines spread all through the length and breadth of the country. In view of having a better control and management of the national grid we have divided this country into six power regions. These are our profit centers. The major highlights in the regions during the year are as follows:

➤ Northern Region – I

You may be aware that our Northern Region –I has the largest EHV network among all the regions of POWERGRID. In the construction area, the foundation work in respect of 400 KV single circuit Bhiwani-Jaipur line is under progress and supply of tower materials has started. The work in respect of shifting of 220 KV Auraiya- Agra line has been completed with the casting of pile foundations etc. at new locations. The overall line availability for this region recorded 98.72%, which is higher by 0.92% against the MOU target. With the takeover of HVDC terminals and back-to-back sub-stations with effect from September, 1993 utilisation of HVDC system has also increased substantially. The state-of-art-Hot Line maintenance has also commenced with various maintenance works during the year under review. During the year this region pioneered some of the major maintenance works in respect of charging and commissioning, fixing of shunt splices, restoring etc. of the various lines.

➤ Northern Region – II

In the area of construction, our Northern Region – II has completed 294 ckt. kms. of stringing. During 1993-94, this region completed/commissioned two 400/200 KV substations each at Moga & Hissar and one 220 KV substation for Kishenpur stage-I. However, the line availability has been lower at 92.40%. The line outages per line per year recorded 5.52 nos. against the MOU target 7.4 nos. In the area of O&M this region has shown a substantial performance and used



Hot Line stringing in some of the lines. This region also conducted the technical workshop for the development of the Executives, Supervisors and workmen.

➤ Eastern Region

The construction performance in the Eastern Region was also commendable with the completion of 275 ckt. kms. of stringing and addition of 945 MVA of transformation capacity. During the year, out of the total six 400 KV transmission lines completed by POWERGRID, this region alone has completed/commissioned four 400KV transmission lines, namely Jamshedpur, - Rourkela, Maithon – Jamshedpur, Talcher – Rengali & Durgapur- Jamshedpur and added two substations each at Jamshedpur and Rourkela. The line availability in this region also recorded a high figure of 98.94%. The outages per line per year was 8.77 nos. Eastern Region has done exceedingly well in achieving the availability target despite the collapse of towers at two locations during the year. Our Eastern Region has taken laudable initiative and various corrective measures in respect of Chukha Transmission System (CTS) for improvement of the system problems by way of departmentally coordinating relay settings, rectification of many disturbance recorders etc. which resulted in saving of Rs. 50 lakhs to the Corporation. For

speedy communication and better grid management, DOT speech channels were established within CPCC-Durgapur, ERLDC-Calcutta and POWERGRID, New Delhi. PLCC and P&T compatible Electronic Exchanges have also been established at Biharsharif, Maithon and Rourkela for establishment of Dialing communication. PLCC links have also been established between Malda substation and CPCC, Dugapur for facilitating communication between Farakka- Kahalgaon system.

➤ Western Region

We are glad to mention that our western Region has been awarded with the “Best Performing Region Trophy” for the overall achievements in the area of O&M, Construction, Safety, Budget Utilisation and Commercial activities. This region has also surpassed its target of stringing by completing 76 ckt. kms. of transmission lines during the year 1993-94. During the year, this region has completed/commissioned one 220 kV Gandhar-Bharuch transmission line. This region has achieved the line availability of 98.62% and 3.99 nos. outage per line per year. In the area of maintenance our Western Region has done many pioneering works in respect of Hot Line (Bare Hand) maintenance and changed many contaminated and



broken insulators at various locations. In this region TOD (Time of Day) metering system has been commissioned at ten locations.

➤ Southern Region

The year 1993-94, has been an outstanding year for the Southern Region. In the area of construction this region has achieved the target 146 ckt.kms. of stringing during the period, this region has completed/commissioned two 400 KV transmission lines viz. Udamalpet-Maduari and Neyveli-Trichy. Work in respect of Trichy- Madurai 400 kV line is going on in full swing and is expected to be completed as scheduled. Meanwhile, Part-I of the Trichy-Madurai line was successfully test charged in the month of February. Line availability in this region recorded a high of 99.2%. We would like to mention here that this region has restored the system departmentally in record time when 7 towers in the 400 kV lines each at Nagarjunasagar-Munirabad and Nagarjunasagar-Gooty collapsed due to heavy wind and gale in that area. This region also started maintaining/ repair works through Hot Line maintenance. In this respect, the region has trained some of the Executives, Supervisors and Technicians for attaining the skill required for the Hot Line maintenance. It is worth mentioning that our Southern Region has come out with the detailed "Operating Instruction Manual" for sub-stations and lines in the Region. Southern Region has demonstrated leadership in setting up the Regional Laboratory, first of its kind to maintain and reduce the costly inventory of the different types of equipments installed at various sub-stations and lines, which was purchased from various suppliers. You will be happy to note that this region has started PC to PC communication over PLCC with a link to Corporate Operation Services, thereby achieving a long line of firsts for many activities. This region has also mooted the idea of making a core nodal expert group to handle various equipments for the first time in our Corporation. This has resulted in implementation of preventive maintenance measure. In this region we have also inaugurated the modern training complex at Hyderabad in line with our

HRD policy for imparting the requisite skill to the employees.

➤ North Eastern Region

Gentlemen, our North Eastern Region is one which has many difficult terrains and this region also faces the worst of natural calamities in India. We extend our special thanks to all those posted there, dedicated to achieving the target. In the area of construction our North Eastern Region has achieved high target of 324 ckt. kms. of stringing. In the field of operation this region has achieved quite an appreciable jump from a line availability of 95.6% to 96.35%. This region also has a lot of surplus manpower in the category of Attendant and Assistant, which needs to be redeployed. In this respect an action plan has already been initiated by way of organising training programme for the 1st batch of 25 employees, which is already completed.

■ CONCERN FOR ENVIRONMENT

Keeping abreast with the nature and development of eco-system, POWERGRID has right from its inception taken up adequate care while selecting the routes for laying of transmission lines, ensuring minimal impact on forestation. Wherever it becomes inevitable, infringements with forests are kept to the bare minimum.

As you are aware, a dedicated Environment Management Cell has been constituted specifically to look into the matters in respect of finding out the environment-friendliness of the project and for streamlining coordination with various State Authorities and field Officials. As a long term strategy to reduce the processing time required for obtaining environment clearance(s) for new transmission projects, POWERGRID has already preempted its action by putting forwards its novel Forest Bank proposal to the Government of India for consideration. The proposal is at present under consideration of Government of India.

· FUTURE PERSPECTIVES

POWERGRID is also exploring possibilities of technical, commercial, financial and operational cooperation with various other new entrants into the power sector. These include various Indian and foreign companies.

POWERGRID is also looking towards possible avenues of diversification into areas compatible with the transmission business such as telecommunication and distribution.

POWERGRID has a catalytic role to play in the power sector. As embodied in our mission statement, POWERGRID expects to play the role of a change agent in bringing about reform and restructuring of the Indian power sector. To this end, we have already made considerable efforts towards rationalisation of the tariff structure. We also actively support private sector participation in the power sector.

■ ACKNOWLEDGEMENTS

Lastly, the Directors wish to place on record their sincere appreciation for consistent support, cooperation and assistance extended to the company by the various Governing Authorities/ Agencies at the State and the Central level, Financial Institutions and Banks and Stake Holders.

Further, the Board takes the opportunity to acknowledge its dedicated employees, but for whose combined contributions and efforts, the achievements of the company would have been far short of the target.

On behalf of the Board

R.K. Narayan
Chairman &
Managing Director

Place: New Delhi
Dated: 27th September, 1994



REVENUE EXPENDITURE ON SOCIAL OVERHEADS FOR THE YEAR ENDED 31.03.94

(Rs. in Thousands)

Sl. Particulars No.	Town-ship	Education & School facilities	Medical facilities	Subsidised Transport	Social & Cultural Activities	Subsidised Canteen	Total	Land Scaping & waste Land devp.	Previous year
1. Payment to									
Employee		742	17646	1694	140	3917	24139		15459
2. Material consumed	544				20		564		795
3. Rates & Taxes				62			62		530
4. Welfare expenses	685	174	6410	2253	3506	1239	14267		10478
5. Other including									
Repair & maintenance	6523				368		6891	28	5513
6. Depreciation	10418				1688		12106		9742
7. Sub total (1 to 6)	18170	916	24056	4009	5722	5156	58029	28	42517
8. Less Recoveries	664				232		896		754
9. Net expenditure (7-8)	17506	916	24056	4009	5490	5156	57133	28	41763
10. Previous year	15343	560	17846	2456	2117	2288	40610	1153	



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. 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, 1961.
 - a) Depreciation on fixed assets is being provided from the year following that in which the assets become available for use.
 - b) 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 & NLC Transferred w.e.f. 01.04.1992, J&K lines w.e.f. 1.4.93 & THDC w.e.f. 1.8.93, depreciation had 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 prorata to the annual capital expenditure) for the year is apportioned to 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 to transmission charges to annual capital outlay in the case of corporate office and transmission charges to accretions 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 Renovation and Modernisation

- 3.1 Expenditure having the effect of extending the useful life of an asset or increasing output or capacity or efficiency of an asset or decreasing operating cost of an asset or alteration or replacement or renovation of building or plant and asset rebuilt by replacement of its components over a period of time shall be capitalised. Major replacement/substitution of one fixed asset by another, particularly of an old asset by a new asset or an old part by a new part with an expenditure limit of Rs. 10 lakhs and above for each transmission line (i.e. between two sub stations, switching stations or Company's Bays situated in SEBS sub-stations) and each sub-station, during a financial year shall be capitalised. However, the cost of replaced/substituted asset along with accumulated depreciation shall be withdrawn when the expenditure on the new replacing asset is capitalised. In the light of this policy framed in line with Electricity (Supply) Annual Accounts Rules 1985.
The following items will accordingly be capitalised for value exceeding Rs. 10 lacs:

- a) Towers, Conductors & Earth wires, Insulators, Accessories & Hardwares and foundations etc..
- b) Transformers, Shunt Reactors, Circuit Breakers, Isolators, CTS, CVTs, Lightning Arrestor, structures, Bus Post Insulators, busbars, main and auxiliary structures, cables and cable trenches, protection, control, PLCC equipments, other switch yard equipments, HVDC equipments & associated buildings etc.



ACCOUNTING POLICIES (Contd.)

4.0 Conversion or Translation of Foreign Currency Items

- 4.1 Foreign Currency loans/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.

5.0 Valuation of Inventories

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

6.0 Treatment of Retirement Benefits

- 6.1 Gratuity is provided on actuarial valuation basis.

7.0 Recognition of Income from Consultancy

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

8.0 Valuation of Fixed Assets

- 8.1 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.
- 8.2 Assets and Systems common to more than one Transmission System are capitalised on the basis of engineering estimates/assessments.
- 8.3 Net pre-commissioning expenditure is adjusted directly in the cost of related assets and systems.

9.0 Capital reserve

- 9.1 Grants-in-aid received from Central Government or other authorities towards capital expenditure for projects and betterment of Transmission Systems as well as consumers' contribution to capital works are treated as capital reserve.

10.0 Miscellaneous

- 10.1 Expenses on training and recruitment, Research and Development are charged to revenue in the year of incurrence.
- 10.2 Pre-paid expenses and prior-period expenses and income of items of Rs. 5,000 and below are charged to natural heads of accounts.
- 10.3 Interest/surcharge recoverable from debtors and on advances to suppliers as well as warranty claims/liquidated damages are accounted for on receipt/acceptance.
- 10.4 Bonds issue expenses/front end fees are being written off over maturity period of bonds/Loans.



BALANCE SHEET
As at 31st March 1994

(Rs. in Thousands)

	Schedule No		As at 31st March, 1994	As at 31st March, 1993
SOURCES OF FUNDS				
Shareholders' Funds				
Capita	1	2889,12,61		1849,17,20
Reserves & Surplus	2	<u>497,92,77</u>		234,79,01
			3387,05,38	2083,96,21
Loan Funds				
Secured Loans	3	304,28,12		51,22,09
Unsecured Loans		<u>2368,78,51</u>		2634,61,70
			<u>2673,06,63</u>	2685,83,79
			<u>6060,12,01</u>	<u>4769,80,00</u>
Total				
APPLICATION OF FUNDS				
Fixed Capital Expenditure				
Fixed Assets				
Gross Block	4	4228,65,02		3520,55,61
Less Depreciation		<u>321,47,51</u>		141,58,65
Net Block		3907,17,51		3378,96,96
Capital Work-in-Progress	5	1307,14,36		754,12,23
Construction stores and advances	6	<u>394,46,08</u>		294,83,43
			5608,77,95	4427,92,62
Investment	7		20	10
Current Assets, Loans and Advances				
Inventories	8	60,93,74		50,41,54
Sundry Debtors		119,05,88		336,46,24
Cash and Bank Balances		337,37,84		110,84,61
Other Current Assets		6,97,17		4,68,25
Loans and Advances		<u>389,01,38</u>		176,20,26
			913,36,01	678,60,90
Less : Current Liabilities and Provisions				
Liabilities	9	463,54,69		350,54,34
Provisions		<u>6,75,56</u>		1,64,74
			<u>470,30,25</u>	352,19,08
Net Current Assets			443,05,76	326,41,82
Miscellaneous expenditure				
(to the extent not written off or adjusted)	10		8,28,10	15,45,46
Total			<u>6060,12,01</u>	<u>4769,80,00</u>
Contingent Liabilities	11		<u>188,65,96</u>	45,81,55
Notes on accounts	18			

Schedules 1 to 18 and Accounting Policies form interal part of Accounts.

(P.D.TUTEJA)
Secretary

For Batra Sapra & Company
Chartered Accountants

(A.L.BATRA)
Partner

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

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

(LAXMINIWAS SHARMA)
Partner

(S.C. PARAKH)
Director (Projects)

(R.K.NARAYAN)
Chairman & Manging Director

For Sri Associates
Chartered Accountants

(I.PASHA)
Partner

Place : Ner Delhi
Date : 10th August, 1994



PROFIT & LOSS ACCOUNT
For the Year Ended 31st March 1994

(Rs. in Thousands)

	Schedule No		For the year Ended March, 1994	For the year Ended March, 1993
INCOME				
Transmission Charges			558,54,34	562,33,79
Sale of Electric Power			86,13,75	64,42,30
Consultancy, Project Mangement and Supervision Fees			46,23	4,40,49
Other Income	12		<u>3,61,72</u>	2,89,43
			<u>648,76,04</u>	<u>634,06,01</u>
EXPENDITURE				
Purchase of Electric Power			54,74,26	36,60,46
Transmission and Administration Expenses	13	100,69,43		74,72,00
Depreciation		167,83,99		138,80,44
Prior Period adjustment (Net)	17	<u>38,95,62</u>		46,48
			307,49,04	213,98,92
Less: Incidental Expenditure during Construction transferred to Capital Work-in-progress	16A		<u>54,05,77</u>	19,40,65
			253,43,27	194,58,27
Provision	14		1,72,91	-
Loss on Fixed Assets Discarded			47,99	-
Preliminary Expenses Written off			-	40,14
			<u>310,38,43</u>	<u>231,58,87</u>
Profit before Interest & Finance charges			338,37,61	402,47,14
Interest and finance Charges	15		248,80,66	229,32,97
Less: Interest & Finance charges transferred to capital work-in-progress	16B		98,30,72	63,47,05
			150,49,94	165,85,92
Profit for the Year (Before tax)			187,87,67	236,61,22
Provision for taxation			-	-
Profit after tax			187,87,67	236,61,22
Balance Profit from last year's account			21,79,01	-1,82,21
Proposed Dividend			5,00,00	-
Transfer to Bonds Redemption Reserve			-	13,00,00
Transfer to General Reserve			<u>200,00,00</u>	<u>200,00,00</u>
Balance of profit carried over to Balance sheet			<u>4,66,68</u>	<u>21,79,01</u>

(P.D.TUTEJA)
Secretary

For Batra Sapra & Company
Chartered Accountants

(A.L.BATRA)
Partner

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

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

(LAXMINIWAS SHARMA)
Partner

(S.C. PARAKH)
Director (Projects)

(R.K.NARAYAN)
Chairman & Manging Director

For Sri Associates
Chartered Accountants

(I.PASHA)
Partner

Place : Ner Delhi
Date : 10th August, 1994



CAPITAL SCHEDULE - 1

(Rs. in Thousands)

	As at 31st March, 1994	As at 31st March, 1993
AUTHORISED		
500,00,00 (Previous Year 500,00,00) equity shares of Rs. 1000/- each.	<u>5000,00,00</u>	<u>5000,00,00</u>
ISSUED, SUBSCRIBED AND PAID-UP		
28,81,319 (Previous Year 7,11,000) equity shares of Rs. 1000/- each fully paid-up	288,13,19	71,10,00
Share capital deposit	2600,99,42	1778,07,20
Total	<u>2889,12,61</u>	<u>1849,17,20</u>

RESERVES AND SURPLUS SCHEDULE - 2

(Rs. in Thousands)

	Balance as at 1st April, 1993	Additions	Balance as at 31st April, 1994
Grants in aid	-	80,26,09	80,26,09
General Reserve	200,00,00	200,00,00	400,00,00
Bonds Redemption Reserve	13,00,00	-	13,00,00
	<u>213,00,00</u>	280,26,09	<u>493,26,09</u>
	21,79,01		4,66,68
Surplus as per Profit & Loss Account	<u>234,79,01</u>		<u>497,92,77</u>

LOAN FUNDS SCHEDULE - 3

(Rs. in Thousands)

	As at 31st March, 1994	As at 31st March, 1993
SECURED LOANS		
Cash credit form banks (Secured by hypothecation of stores, spares, book debts and other current assets)	4,07	-
POWERGRID BONDS I SERIES		
a. 16.75%/ 17% Taxable 7 years Redeemable non-convertible Bonds of Rs 1000/- each redeemable at par on 10/13th March, 1999	36,80,00	-
b. 9% Tax-Free 10 year Redeemable non-convertible Bonds of Rs 1000/- each redeemable at par on 10th March, 2002	39,00,18	-
(Both secured by equitable mortgage of Korba Transmission Lines)	<u>-</u>	75,80,18
LOAN FROM LIFE INSURANCE CORPORATION		
a. Secured by equitable mortgage of Kopili, additional, Doyang and Gohpur - Itanagar Transmission Systems	18,14,33	19,90,00
b. Secured by equitable mortgage of CTP lines	<u>19,90,00</u>	-
	38,04,33	19,90,00



**LOAN FUNDS
SCHEDULE - 3 (Contd.)**

(Rs. in Thousands)

	As at 31st March, 1994	As at 31st March, 1993
Loan from International Bank for Reconstruction and Development (Secured by equitable mortgage of Rihand & Vindhyachal Transmission System) PENDING FINALISATION OF TRIPARTITE AGREEMENT/ BACK TO BACK AGREEMENT - AMOUNT PAYABLE TO GOVERNMENT OF INDIA ON ACCOUNT OF	88,09,45	
A. NHPC PURCHASE CONSIDERATION		
a. 13% B series 7 years Bonds of Rs. 1000/- each redeemable at par on 11th Dec. 1994	12,18,85	12,18,85
b. 9% B series 10 years Bonds of Rs. 1000/- each redeemable at par on 11th Dec., 1997 (Both secured by equitable mortgage of Chukha Transmission Lines)	19,13,24	19,13,24
	31,32,09	31,32,09
B. NLC PURCHASE CONSIDERATION		
a. 13% E series 7 years Bonds of Rs. 1000/- each redeemable at par in December, 1996	35,49,00	-
b. 9% E series 10 years Bonds of Rs. 1000/- each redeemable at par in December, 1999/ March, 2000 (Both secured by equitable mortgage of Neyveli - Salem - Madras Line)	35,49,00	-
	70,98,00	-
Total Secured Loans	304,28,12	51,22,09
UNSECURED LOANS		
POWERGRID BONDS I SERIES		
a. 16.75%/ 17% Taxable 7 years redeemable non-convertible Bonds of Rs. 1000/- each redeemable at par on 10/13th March, 1999	---	100,00,00
b. Interest accrued and due	---	17,00
c. 9% Tax-Free 10 years Redeemable non-convertible Bonds of Rs. 1000/- each redeemable at par on 10th March, 2002	---	100,00,00
POWERGRID BONDS II SERIES		
a. 15% Taxable 5 year Redeemable non-convertible Bonds of Rs. 1000/- each redeemable at part on 11th February	236,00,00	----
b. 10.5% Tax-Free 5 years Redeemable Non-convertible Bonds of Rs. 1000/- each redeemable at par on 11th February, 1999 (Both to be secured by equitable mortgage of Ramagundam & Nagarjuna Sagar Transmission Lines)	14,00,00	----
	250,00,0	---
Payable to Government of India on account of NLC Bonds	89,02,00	---
Loan from LIC (to be Secured by equitable mortgage of CTP Transmission system)	-	19,90,00
Loan from International Bank for Reconstruction & Development	---	78,80,22



**LOAN FUNDS
SCHEDULE - 3 (Contd.)**

(Rs. in Thousands)

	As at 31st March, 1994	As at 31st March, 1993
Loans from Government of India	354,05,44	798,27,80
Interest accrued and due on Government of India Loan	----	7,00,12
Loan from Unit Trust of India (to be secured by mortgage of kahalgaon Transmission system)	150,00,00	----
LOANS GUARANTEED BY GOVERNMENT OF INDIA:-		
a. West Merchant Bank, U.K. & State Bank of India, London	66,49	----
b. Credit National, France	<u>24,32,92</u>	----
	24,99,41	----
PENDING FINALISATION OF TRIPARTITE AGREEMENT/ BACK TO BACK AGREEMENT- AMOUNT PAYABLE TO GOVERNMENT OF INDIA ON ACCOUNT OF		
A. NTPC PURCHASE CONSIDERATION		
1. LOANS FROM		
a. Industrial Bank of Japan and Nippon Life Insurance	39,48,60	34,86,00
b. Syndicated Loan from Industrial Bank of Japan & Other Japanese banks/Financial Institutions	263,49,26	232,62,00
c. Exim Bank, Japan	292,81,08	277,67,47
d. Skandinorviska Enskilda Banken I, Sweden	64,90,37	79,10,30
e. Skandinorviska Enskilda Banken II, Sweden	250,24,17	279,68,36
f. Unit Trust of India	7,09,54	9,12,27
2. BONDS	<u>312,98,00</u>	381,38,00
	1231,01,02	1294,44,40
B. NHPC PURCHASE CONSIDERATION		
a. Export Development Corporation, Canada	45,77,95	50,60,31
b. Bonds	<u>135,98,11</u>	147,70,37
	181,76,06	198,30,68
UNSECURED LOANS FROM OTHERS		
a. National Thermal Power Corporation	---	9,70,00
b. Nathpa Jhakhri Power Corporation	---	10,00,00
c. Nuclear Power Corporation	15,00,00	18,01,48
d. Neyveli Lignite Corporation	56,44,86	---
e. Commercial Paper (maximum amount raised at any time during the year Rs. 6525.44 Lacs previous year Nil)	<u>16,49,72</u>	---
	87,94,58	37,71,48
Total Unsecured Loans	<u>2368,78,51</u>	<u>2634,61,70</u>
GRAND TOTAL (SECURED+UNSECURED)	<u>2673,06,63</u>	<u>2685,83,79</u>



FIXED ASSETS - (TRANSMISSION LINES) SCHEDULE - 4A

(Rs. in Thousands)

	Gross Block			Depreciation		Net Block	
	As at 31.03.93	Additions	Sales/Adj.	As at 31.03.94	upto 31.03.94	As at 31.03.94	As at 31.03.93
LAND (including Development)							
Free hold	1,26,94	5,18	-	1,32,12	-	1,32,12	1,26,94
Leasehold	--	40,14	-	40,14	4	40,10	-
Roads , bridges culverts & helipads,	--	1,40	-	1,40	6	1,34	-
BUILDINGS							
Others	1	1,53	-	1,54	44	1,10	1
Temporary erection	86	-	-	86	51	35	60
Plant & Machinery	1968,13,53	366,86,26	-148,83,48	2483,83,27	161,22,20	2322,61,07	1960,40,14
Construction and							
Workshop Installation	24,41	-	16	24,25	2,96	21,29	22,92
Electrical Installation	63,67,70	32,19	63,67,70	32,19	8,39	23,80	-
Vehicles	9,76	7,12	-	16,88	10,17	6,71	5,76
Furniture, Fixtures and Other equipment	-	3,25	-	3,25	7	3,18	-
Total (A)	2033,43,21	367,77,07	-85,15,62	2486,35,90	161,44,84	2324,91,06	1961,96,37

FIXED ASSETS - (SUB-STATIONS) SCHEDULE - 4B

(Rs. in Thousands)

	Gross Block			Depreciation		Net Block	
	As at 31.03.93	Additions	Sales/Adj.	As at 31.03.94	upto 31.03.94	As at 31.03.94	As at 31.03.93
LAND (including Development)							
Free hold	20,10,50	2,85,57	-1,58,61	24,54,68	---	24,54,68	20,19,54
Leasehold	4,08,56	1,78,20	40,29	5,46,47	21,75	5,24,72	3,71,84
Unclassified	2,90,29	---	67,62	2,22,67	---	2,22,67	2,90,29
Roads , bridges culverts & helipads	10,40,82	1,25,81	-1,81,00	13,47,63	43,98	13,03,65	10,23,09
BUILDINGS							
Main Plant	12,97,71	7,64,52	-3,77,44	24,39,67	1,44,65	22,95,02	15,21,76
Others	20,12,86	2,60,54	-30,67	23,04,07	1,70,21	21,33,86	16,94,95
Temporary erection	62,88	30,01	1,97	90,92	30,19	60,73	44,54
Water Supply, drainage & sewerage	2,92,71	62,50	54,04	3,01,17	20,95	2,80,22	1,97,22
Plant & Machinery	1335,47,30	179,15,24	-31,14,85	1545,77,39	148,33,18	1397,44,21	1270,20,21
Construction and							
Workshop equipment	4,20,68	12,87	-16,98	4,50,53	52,10	3,98,43	3,97,33
Electrical Installation	2,84,76	82,60	3,56	3,63,80	50,40	3,13,40	2,58,65
Vehicles	1,46,36	23,31	15,48	1,54,19	97,27	56,92	85,96
Speed Boats	2,47	---	---	2,47	18	2,29	2,47
Furniture, Fixtures and Other equipment	3,44,47	1,77,10	59,76	4,61,81	54,13	4,07,68	2,81,93
EDP & WP Machines	31,10	41,10	3,94	68,26	7,67	60,59	26,37
Laboratory and Workshop equipment	1,15,26	60,14	-12	1,75,52	36,50	1,39,02	1,01,25
Total (B)	1423,08,73	200,19,51	-36,33,01	1659,61,25	155,63,16	1503,98,09	1353,37,40



FIXED ASSETS - (RESEARCH & DEVELOPMENT) SCHEDULE - 4C

(Rs. in Thousands)

	Gross Block			As at 31.03.94	Depreciation upto 31.03.94	Net Block	
	As at 31.03.93	Additions	Sales/Adj.			As at 31.03.94	As at 31.03.94
BUILDINGS - Others	66,12	--	-86	66,98	1,31	65,67	66,12
Total (C)	66,12	--	-86	66,98	1,31	65,67	66,12

FIXED ASSETS - (OFFICE COMPLEX) SCHEDULE - 4D

(Rs. in Thousands)

	Gross Block			As at 31.03.94	Depreciation upto 31.03.94	Net Block	
	As at 31.03.93	Additions	Sales/Adj.			As at 31.03.94	As at 31.03.94
LAND (including Development)							
Free hold	9,04	---	9,04	--	--	--	--
Leasehold	29,37	---	-	29,37	2,39	26,98	28,17
BUILDINGS							
Others	4,26,56	1,85	68	4,27,73	17,04	4,10,69	4,18,74
Temporary erection	69,21	42,78	1,06	1,10,93	14,91	96,02	69,04
Electrical Installation	28,29	3,25	-15	31,69	1,09	30,60	28,22
Vehicles	29,80	11,00	-4,70	45,50	19,91	25,59	27,87
Furniture, Fixtures and Other equipment	4,81,42	2,41,29	-16,64	7,39,35	85,84	6,53,51	4,74,83
EDP & WP Machines	2,26,98	1,53,96	-1,76	3,82,70	35,70	3,46,98	2,23,18
Total (D)	13,00,67	4,54,13	-12,47	17,67,27	1,76,90	15,90,37	12,70,05

FIXED ASSETS - (TOWNSHIP ASSETS) SCHEDULE - 4E

(Rs. in Thousands)

	Gross Block			As at 31.03.94	Depreciation upto 31.03.94	Net Block	
	As at 31.03.93	Additions	Sales/Adj.			As at 31.03.94	As at 31.03.94
LAND (including Development)							
Free hold	36,40	5,89	-91	43,20	--	43,20	36,40
Leasehold	57,88	67	-26,71	85,26	4,24	81,02	82,47
Roads, bridges, culverts & helipads	3,87,08	97,21	-1,14	4,85,43	16,02	4,69,41	3,79,96
BUILDINGS							
Others	38,05,88	7,26,49	-1,06,58	46,38,95	1,59,54	44,79,41	37,15,74
Temporary erection	14,89	9,08	-4,08	28,05	7,96	20,09	11,52
Water supply, drainage & sewerage	4,42,87	1,83,70	-1,37,21	763,78	28,54	7,35,24	5,18,28
Electrical Installation	2,28,37	58,19	---	2,86,56	29,50	2,57,06	2,16,33
Vehicles	4,51	7,59	2,10	10,00	6,81	3,19	1,66
Furniture, Fixtures and Other equipment	56,79	24,54	-8,42	89,75	8,42	81,33	62,56
Hospital Equipment	12	--	--	12	2	10	12
School Equipment	2,09	43	--	2,52	25	2,27	1,98
Total (E)	50,36,88	11,13,79	-2,82,95	64,33,62	2,61,30	61,72,32	50,27,02



FIXED ASSETS - (SUMMARY)
SCHEDULE - 4

(Rs. in Thousands)

	Gross Block			As at 31.03.94	Depreciation upto 31.03.94	Net Block	
	As at 31.03.93	Additions	Sales/Adj.			As at 31.03.94	As at 31.03.94
Land (including Development)							
Freehold	21,82,88	2,96,64	-1,50,48	26,30,00	--	26,30,00	21,82,88
Leasehold	4,95,81	2,19,01	13,58	7,01,24	28,42	6,72,82	4,82,48
Unclassified	2,90,29	--	67,62	2,22,67	--	2,22,67	2,90,29
Roads, bridges, culverts & helipads	14,27,90	2,24,42	-1,82,14	18,34,46	60,66	17,74,40	14,03,05
BUILDINGS							
Main Plant	12,97,71	7,64,52	-3,77,44	24,39,67	1,44,65	22,95,02	58,95,56
Others	63,11,43	9,90,41	-1,37,43	74,39,27	3,48,54	70,90,73	58,95,56
Temporary erection	1,47,84	81,87	-1,05	2,30,76	53,57	1,77,19	1,25,70
Water supply drainage & sewerage	7,35,58	2,46,20	-83,17	10,64,95	49,49	10,15,46	7,15,50
Plant & machinery	3303,60,83	546,01,50	-179,98,33	4029,60,66	309,55,38	3720,05,28	3230,60,35
Construction and workshop equipment	4,45,09	12,87	-16,82	4,74,78	55,06	4,19,72	4,20,25
Electrical Installation	69,09,12	1,76,23	63,71,11	7,14,24	89,38	6,24,86	5,03,20
Vehicles	1,90,43	49,02	12,88	2,26,57	1,34,16	92,41	1,21,25
Speed Boats	2,47	--	--	2,47	18	2,29	2,47
Furniture, Fixture & other equipment	8,82,68	4,46,18	34,70	12,94,16	1,48,46	11,45,70	8,19,32
EDP & WP Machines	2,58,08	1,95,06	2,18	4,50,96	43,39	4,07,57	2,49,55
Laboratory and Workshop Equipments	1,15,26	60,14	-12	1,75,52	36,50	1,39,02	1,01,25
Hospital equipment	12	--	--	12	2	10	12
School equipment	2,09	43	--	2,52	25	2,27	1,98
GRAND TOTAL	3520,55,61	583,64,50	-124,44,91	4228,65,02	321,47,51	3907,17,51	3378,96,96
Previous year	5,56,68	3350,75,52	-164,23,41	3520,55,61	141,58,65	3378,96,96	



CAAPITAL WORK IN PROGRESS (TRANSMISSION LINES) SCHEDULE - 5A

(Rs. in Thousands)

	Balance As at 31st March, 1993	Additions by Transfer of Assets	Additions during the year	Adjustments	Capitalised during the year	Balance As at 31st March, 1994
Buildings (Others)	--	--	4,34	--	--	4,34
Plant & Machinery (including associated civil works)	160,75,34	20,90,80	312,55,24	-108,01	41,42	494,88,17
On own account & on supply- cum-erection contracts	344,58,45	96,95,51	295,78,13	46,15,84	242,91,37	448,24,88
Electrical Installations	--	48	1,22,17	--	--	1,22,65
Survey,Investigation, Consultancy & Supervision Charges	6,68,33	7,32,12	36,52	--	--	14,36,97
Survey & Soil Investigation	1,81,81	20	22,13	7,38	7,92	1,88,84
Difference in Exchange on foreign Loans Skandinorviska Enskilda Banken I	--	--	10,91	--	10,91	--
Industrial Bank of Japan & Nippon Life Insuracnce	--	--	3,91,82	--	3,91,82	--
Syndicated Loan from Industrial Bank of Japan & other Japanese Banks/ Financial Institutions	--	--	8,98,15	--	8,98,15	--
Export Development Corporation, Canada	18,44	--	17,37	--	--	35,81
International bank for Reconstruction and Development	--	--	4,17,11	--	--	4,17,11
Total (A)	514,02,37	125,19,11	627,54,09	45,15,21	256,41,59	965,18,77

CAAPITAL WORK IN PROGRESS (SUB-STATIONS) SCHEDULE - 5B

(Rs. in Thousands)

	Balance As at 31st March, 1993	Additions by Trasfer of Assets	Additions during the year	Adjustments	Capitalised during the year	Balance As at 31st March, 1994
Development of land	4,47,97	75,59	3,63,35	81,89	2,03,00	6,02,02
Roads, bridges, & culverts & helipads	3,57,94	49,60	1,82,70	5,13	2,82,19	3,02,92
Buildings (other)	14,50,60	4,05,13	6,42,36	30,68	10,75,17	13,92,24
Temporary erection	51,60	--	15,64	7,79	33,67	25,78
Water supply, drainage and sewerage	55,29	15,95	34,23	9,63	55,08	40,76
Plant & Machinery (including associated civil works)	58,50,21	19,20,36	56,16,17	-7,77,00	3,73,85	137,89,89
On own account & on supply- cum-erection contracts	105,06,56	48,15,99	102,95,46	21,52,20	148,91,95	85,73,86
Electrical installations	1,24,23	13,99	23,23	-2,44	68,87	95,02
Survey Investigation,Consultancy & Supervision Charges	6,46,23	--	24,21	4,59,36	--	2,11,08
Survey & Soil Investigation	30,23	--	6,18	-4,58,77	--	4,95,18
Difference in Exchange on foreign Loans Skandinorvisk Enskilda Banken II	--	--	14,43,99	--	14,43,99	--
Industrial Bank of Japan & Nippon & Life Insureanc	--	--	70,78	--	70,78	--
Syndicated Loan from Industrial Bank of Japan and other Japanese Banks/ Financial Institutions	6,12,54	--	21,89,02	16,80,44	10,61,22	59,90
EXIM Bank	14,16,46	--	36,19,39	10,67,96	20,20,34	19,47,55
Export Development Corporation, Canada	5,32	--	5,23	--	--	10,55
West Merchant Bank , U.K. & State Bank of India, London	--	--	13,26	--	--	13,26
Total (B)	215,55,18	72,96,61	245,45,20	42,56,87	215,80,11	275,60,01



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

(Rs. in Thousands)

	Balance As at 31st March. 1993	Additions by Trasfer of Assets	Additions during the year	Adjustments	Capitalised during the year	Balance As at 31st March, 1994
Buildings (other)	69,30	--	18,26	-2,54	2,07	88,03
Temporary erection	--	--	30,30	--	25,06	5,24
Electrical Installations	15	--	--	--	15	--
Furniture Fixtures & Other office equipment	2,99	--	17,95	--	20,33	61
Total (C)	72,44	--	66,51	-2,54	47,61	93,88

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

(Rs. in Thousands)

	Balance As at 31st March. 1993	Additions by Trasfer of Assets	Additions during the year	Adjustments	Capitalised during the year	Balance As at 31st March, 1994
Development of Land	1,01	--	6,90	-35,39	4,60	38,70
Roads bridges, culverts & helipads	2,18,29	--	1,14,15	12,30	65,94	2,54,20
Buildings (others)	17,72,29	1,34,74	3,83,01	92,64	5,16,56	16,80,84
Temporary erection	32,31	1,03	10,75	-5,96	4,36	45,69
Water supply drainage and sewerage	1,87,62	15,94	2,12,22	13,07	1,48,87	2,53,84
Electrical installations	1,11,24	34,71	84,12	-41,10	49,82	2,21,35
Total (D)	23,22,76	1,86,42	8,11,15	35,56	7,90,15	24,94,62

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

(Rs. in Thousands)

	Balance As at 31st March. 1993	Additions by Trasfer of Assets	Additions during the year	Adjustments	Capitalised during the year	Balance As at 31st March, 1994
Incidental Expenditure during Construction	59,48	54,18,95	149,38,86	--	--	204,17,29
Less : Allocated to Capital Work in progress	--	51,25,96	112,44,25	--	--	163,70,21
Total (E)	59,48	2,92,99	36,94,61	--	--	40,47,08
GRAND TOTAL (A+B+C+D+E)	754,12,23	202,95,13	918,71,56	88,05,.10	480,59,46	1307,14,36
Previous year	63,99,51	855,75,41	307,50,69	37,41,51	435,71,87	754,12,23



**CONSTRUCTION STORES & ADVANCES
SCHEDULE - 6**

		(Rs. in Thousands)
		As at 31st March, 1994
		As at 31st March, 1993
CONSTRUCTION STORES (at cost)		
Steel	37,55,99	40,80,08
Cement	8,87,71	2,81,19
Others	131,61,29	147,44,69
	<u>178,04,99</u>	<u>191,44,69</u>
ADVANCE FOR CAPITAL EXPENDITURE		
Secured	50,79	86,24
Unsecured considered good against Bank guarantees	180,33,25	81,89,24
Others (i.e. Unsecured without B.G.)	35,57,05	20,63,26
	<u>216,41,09</u>	<u>103,38,74</u>
Total	<u>394,46,08</u>	<u>294,83,43</u>
CONSTRUCTION STORES INCLUDE		
Material in transit, under inspection and with contractors		81,32,30
	<u>63,18,26</u>	

**INVESTMENTS
SCHEDULE - 7**

		(Rs. in Thousands)
		As at 31st March, 1994
		As at 31st March, 1993
Other than Trade Investments (upquoted at cost)		
500 Fully paid up shares of Rs. 10/- each in Employees Co-op Society Limited Bhadravati		5
		5
500 Fully paid up shares of Rs. 10/- each in Employees Co-op Society Limited Itarsi		5
		5
500 Fully paid up shares of Rs. 10/- each in Employees Co-op Society Limited Nagpur		5
		-
500 Fully paid up shares of Rs. 10/- each in Employees Co-op Society Limited Jabalpur		5
		-
Total	<u>20</u>	<u>10</u>



**CURRENT ASSETS, LOANS AND ADVANCES
SCHEDULE - 8**

(Rs. in Thousands)

	As at 31st March, 1994	As at 31st March, 1993
INVENTORIES		
(At cost as certified by Management)		
Loose tools	53,08	22,86
Consumable stores	94,16	31,48
Components, Spare & other spare parts	<u>59,46,50</u>	49,87,20
	60,93,74	50,41,54
Inventories include stores in transit Rs. 34.44 Lakhs (Previous year Rs. 329.37 Lakhs)		
SUNDRY DEBTORS		
(Unsecured, considered good)		
Debts outstanding for a period exceeding six months	16,06,89	128,15,97
Other debts	<u>102,98,99</u>	208,30,27
	119,05,88	336,46,24
CASH & BANK BALANCES		
Cash, drafts, stamps and imprest	11,94,01	6,11
Remittance in transit	6,72,96	1,19,42
SHORT TERM DEPOSITS		
Indian Banks	219,26,92	19,15,66
Balance with Scheduled banks in current accounts	<u>102,89,66</u>	94,90,87
	340,83,55	115,32,06
Less : Funds held on customers' A/c	3,45,71	4,47,45
	337,37,84	110,84,61
OTHER CURRENT ASSETS		
Interest accrued	6,21,80	3,98,12
Others	<u>75,37</u>	70,13
	6,97,17	4,68,25
LOANS AND ADVANCES		
LOANS		
Employees	20,96,00	12,30,12
Others	<u>31,90</u>	1,90
	21,27,90	12,32,02
ADVANCES		
ADVANCES RECOVERABLE IN CASH OR KIND OR FOR VALUE TO BE RECEIVED FROM		
Contractors & Suppliers, including materials issued on loan	6,30,21	4,46,41
Employees	3,25,32	1,73,92
Claims recoverable	4,08,96	5,75,80
Amount recoverable through Central appropriation	302,21,00	---
Others	<u>38,65,52</u>	27,71,85
	354,51,10	39,67,98
Less : Provision for bad and doubtful advances and claims	<u>2,10,59</u>	2,10,59
	352,40,42	37,57,39
Deposits with customs, port trust and other authorities	15,33,06	123,30,85
Public deposit A/c. with Government of India	<u>--</u>	3,00,00
	367,73,48	163,88,24
	389,01,38	176,20,26
Total	<u>913,36,01</u>	<u>678,60,90</u>



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

		(Rs. in Thousands)	
		As at 31st March, 1994	As at 31st March, 1993
PARTICULARS OF LOANS AND ADVANCES			
Secured		16,42,01	8,98,88
Unsecured considered good		372,59,37	167,21,38
Considered doubtful and provided for		2,10,59	2,10,59
Total		<u>391,11,97</u>	<u>178,30,85</u>
Due from Directors & Officers of the company			
	Maximum Amount 1993-94	Maximum Amount 1992-93	
Directors	4,32	3,64	3,59
Officers	69,81	40,83	52,15

**CURRENT LIABILITIES AND PROVISIONS
SCHEDULE - 9**

		(Rs. in Thousands)	
		As at 31st March, 1994	As at 31st March, 1993
CURRENT LAIBILITIES			
SUNDRY CREDITORS			
For capital expenditure	55,94,93		76,69,72
Other goods and services	44,82,82		24,80,86
Book overdraft (Banks)	<u>6,25,87</u>		11,01,42
		107,03,62	112,52,00
Deposits , retention money from contracors and others	81,68,24		62,23,02
Less : Investments held as security	<u>30,21</u>		26,87
		81,38,03	61,96,15
Other Liabilities		225,36,13	93,07,71
INTEREST ACCRUED BUT NOT DUE ON LOANS FROM			
Government of India	19,21,55		52,49,90
Foreign Banks/Financial Institutions			
Industrial Bank of Japan & Nippon Life Insurance	32,45		29,13
Syndicated Loan from industrial Bank of Japan & other Japanese banks/Financial Institutions	56,60		47,42
Exim Bank	59,53		52,41
Skandinorviska Enskilda Banken I	68,72		78,45
Skandinorviska Enskilda Banken II	3,76,61		4,21,37
Export Development Corporation, Canada	71,28		1,20,18
International Bank for Reconstruction and Development	4,80,26		1,97
West Merchant Bank, U.K. & State Bank of India, London	5		---
Other Loans	4,10,59		8,07,13
Interest accrued but not due on bonds	<u>14,99,27</u>		14,90,52
		<u>49,76,91</u>	82,98,48
			<u>463,54,69</u>
			350,54,34
PROVISIONS			
Proposed Dividend		5,00,00	---
Proposed for shortages in materials		1,72,59	---
Others		2,97	1,64,74
			<u>6,75,56</u>
			1,64,74
Grand Total		<u>470,30,25</u>	<u>352,19,08</u>



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

	(Rs. in Thousands)			
	Balance as at 1st April 1993	Additions	Deductions	Balance as at 31st March, 1994
Deferred Revenue expenditure	15,45,46	5,02,00	12,19,36	8,28,10
Total	15,45,46	5,02,00	12,19,36	8,28,10

CONTINGENT LIABILITIES
SCHEDULE - 11

	(Rs. in Thousands)	
	As at 31st March, 1994	As at 31st March, 1993
Claims against the Company not acknowledged as debts	174,74,28	37,18,62
Others	13,91,68	8,62,93
Total	188,65,96	45,81,55

OTHER INCOME
SCHEDULE - 12

	(Rs. in Thousands)	
	For the year ended 31st March, 1994	For the year ended 31st March, 1993
Hire charges for equipment	26,81	7,97
Interest from		
Indian Banks	93,72	1,09,22
Foreign Banks	2,44,18	89
Others	1,64,15	1,30,25
Profit on fixed assets discarded	5,02,05	2,40,36
Miscellaneous income	3,41	7,35
	<u>1,27,08</u>	1,75,91
Less: Income transferred to incidental expenditure during construction-Sch 16C	6,59,35	4,31,59
	<u>2,97,63</u>	1,42,16
Total	3,61,72	2,89,43



**TRANSMISSION ADMINISTRATION & OTHER EXPENSES
SCHEDULE - 13**

(Rs. in Thousands)

		For the year ended 31st March, 1994	For the year ended 31st March, 1993
EMPLOYEE COST			
EMPLOYEES' REMUNERATION AND BENEFITS			
Salaries, wages, allowances & benefits		38,80,79	28,70,66
Contribution to provident and other funds		3,26,89	2,07,10
Welfare expenses		6,12,28	4,70,89
		<u>48,19,96</u>	35,48,65
TRANSMISSION EXPENSES			
REPAIRS & MAINTENANCE			
Buildings	1,76,66		1,19,87
Plant & Machinery			
Sub station	3,79,01		2,56,58
Transmission lines	1,71,08		2,10,91
Construction equipment	4,58		2,87
Others	1,15,50		63,51
		<u>8,46,83</u>	6,53,74
Power charges	6,46,76		4,65,18
Less: Recovery from contractors	87		1,56
		<u>6,45,89</u>	4,63,62
Stores consumed		30	6,87
Water charges		<u>4,44</u>	3,53
		<u>14,97,46</u>	11,27,76
ADMINISTRATION EXPENSES			
Training & Recruitment expenses	1,16,22		48,80
Less : Fees for training and application	5,08		24
		<u>1,11,14</u>	48,56
Legal expenses		13,11	8,58
Professional charges		46,90	18,83
Consultancy expenses		42,07	20,91
Communication expenses		3,37,53	2,10,80
Travelling expenses (excluding foreign travel)	8,12,42		5,66,80
Foreign travel only	38,45		58,66
		<u>8,50,87</u>	6,25,46
Tender expenses	53,27		44,20
Less: Sale of tenders	18,15		6,40
		<u>35,12</u>	37,80
PAYMENT TO STATUTORY AUDITORS			
Fee (subject of approval of company law board)	2,50		2,25
In other capacity (certification of prospectus etc.)	1,92		1,45
Expenses	11,94		4,05
		<u>16,36</u>	7,75



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

(Rs. in Thousands)

		For the year ended 31st March, 1994	For the year ended 31st March, 1993
Advertisement and publicity		25,57	33,57
Printing and stationery		1,41,95	1,13,84
EDF hire and other charges		22,50	16,55
Entertainment expenses		16,60	7,09
Brokerage & Commission		5,29	84
Donations		50,45	15
Research & development expenses		3,20	13,47
Rent		2,70,99	2,23,22
Construction stores written off		33	27
Temporary works charged off		1,84	28,85
Miscellaneous expenses (excluding Director's fee)		9,13,62	5,55,93
Insurance		7,99,89	7,89,63
Rates and taxes		25,15	17,06
Expenses for Guest House	23,66		18,18
Less: Income from Guest House	2,13		1,75
		<u>21,53</u>	16,43
Total		37,52,01 <u>100,69,43</u>	27,95,59 <u>74,72,00</u>
Stores consumption included in repair and maintenance		<u>1,32,04</u>	<u>96,40</u>

**PROVISION
SCHEDULE - 14**

(Rs. in Thousands)

	For the year ended 31st March, 1994	For the year ended 31st March, 1993
Shortage in stores	1,72,59	-
Others	32	-
Total	<u>1,72,91</u>	<u>-</u>



**FINANCE AND OTHER CHARGES
SCHEDULE - 15**

(Rs. in Thousands)

		For the year ended 31st March, 1994	For the year ended 31st March, 1993
INTEREST ON			
Loan from Government of India		40,46,28	98,32,71
LOANS FROM BANKS			
Indians		2,24,52	30,32
Foreign			1,59,47
Industrial Bank of Japan & Nippon & Life Ins.	1,91,49		
Industrial Bank of Japan & other			11,67,36
Japanese Banks and Financial Institutions	12,37,64		14,46,92
Exim Bank, Japan	15,96,72		2,49,75
Skandinorviska Enskilda Banken I	2,14,70		10,03,51
Skandinorviska Enskilda Banken II	7,86,50		5,19,96
Export Development Corporation (Canada)	4,32,54		1,97
International Bank for Reconstruction & Development	8,30,81		
West Merchant Bank, U.K. &			
State Bank of India, London	5		-
	<u>52,90,45</u>		45,48,94
LOANS FROM FINANCIAL INSTITUTIONS			
Unit Trust of India	4,12,34		1,41,84
Life Insurance Corporation of India	6,33,79		3,04,67
Industrial Finance Corporation of India	1,84,91		-
	<u>12,31,04</u>		4,46,51
Secured/Unsecured redeemable bonds	95,06,53		77,46,95
Less: Interest earnings on bonds	2,20,57		5,58,17
	<u>92,85,96</u>		71,88,78
Others		14,95,14	5,06,06
		<u>215,73,39</u>	225,53,32
FINANCE CHARGES			
Bonds issue expenses		1,49,25	1,88,23
Rebate to Customers		3,73,96	1,11,99
Commitment charges		22,54	30,68
Management/Arrangers Fees		1,45,22	12,49
Legal expenses on foreign loan		2,38	-
L.C & Bank Charges		99,99	36,24
Export Credit Guarantee Department premium		24,28,79	-
Other expenses on foreign company loans		85,14	2
		<u>33,07,27</u>	3,79,65
Total		<u>2,48,80,66</u>	<u>229,32,97</u>



**INCIDENTAL EXPENDITURE DURING CONSTRUCTION
SCHEDULE - 16**

(Rs. in Thousands)

		For the year ended 31st March, 1994	For the year ended 31st March, 1993
A. EXPENSES			
EMPLOYEES' REMUNERATION AND BENEFITS			
Salaries , wages, allowances and benefits		14,71,80	7,96,06
Contribution to provident and other funds		1,25,57	59,01
Welfare expenses		<u>2,27,72</u>	1,23,59
		18,25,09	9,78,66
REPAIRS & MAINTENANCE			
Buildings	38,75		10,07
Construction equipment	3,81		2,09
Others	<u>38,39</u>		11,86
		80,95	24,02
Power	63,18		62,44
Less: Recovered from contractors	<u>64</u>		1,56
		62,54	60,88
Stores and oil etc consumed (excluding consumption for repairs and maintenance)		25	-
Water charges		<u>2,58</u>	2,02
		1,46,32	86,92
ADMINISTRATION EXPENSES			
Legal expenses		3,64	1,56
Professional charges		25,67	6,99
Consultancy expenses		7,87	5,04
Communication expenses		1,46,74	70,34
Travelling expenses		3,38,80	1,82,47
Tender expenses	37,72		35,52
Less : Income from sale of tenders	<u>6,50</u>		1,87
		31,22	33,65
Payment to Auditors		8,42	2,23
Advertisement and Publicity		15,63	9,50
Printing and stationery		63,75	32,67
EDP hire and other charges		8,43	2,98
Entertainment expenses		7,27	2,29
Brokerage and commission		5,03	5,88
Rent		1,34,53	57,44
Construction Stores written off		16	25
Temporary works written off		1,65	9,47
Miscellaneous expenses		4,16,47	1,62,45
Insurance		1,32,23	1,74,27
Rates and taxes		8,48	3,08
Depreciation		1,21,44	59,04
Guest House Expenses	12,80		7,00
Less: Income from guest house	<u>58</u>		27
		12,22	6,73
Non Operation Expenses		<u>46</u>	-
Total of Administratvie expenses		14,90,11	8,28,33
Prior Period adjustment (net)		19,44,25	46,74
Total (A)		<u>54,05,77</u>	<u>19,40,65</u>



**INCIDENTAL EXPENDITURE DURING CONSTRUCTION
SCHEDULE - 16 (Contd.)**

(Rs. in Thousands)

	For the year ended 31st March, 1994	For the year ended 31st March, 1993
A. INTEREST AND FINANCE CHARGES		
INTEREST ON		
Loan from Government of India	14,11,37	19,82,72
LOAN FROM BANKS		
Indian	3,10	---
Foreign		
Industrial Bank of Japan & other Japanese Bank and Financial Institutions	26,44	1,45,84
Exim Bank , Japan	--	5,65,89
Export Development Corporation (Canada)	4,32,54	5,19,96
International Bank for Reconstruction & Development	8,30,81	1,97
West Merchant Bank, U.K. & State Bank of India, London	5	--
	<u>12,89,84</u>	12,33,66
LOANS FROM FINANCIAL INSTITUTIONS		
Loan from Unit Trust of India	2,70,44	6,43
Loan from Life Insurance Corporation	4,55,45	2,25,43
Buyers' Credit from IFCI	1,40,38	---
	<u>8,66,27</u>	2,31,86
Secured/Unsecured Redeemable Bonds	30,00,33	11,97,51
Others	6,02,32	16,65,34
Commitment charges	6,98	30,27
Management Fees/Arrangers Fee	1,77,24	--
Legal expenses on foreign loan	2,38	--
L.C & Bank Charges	42,10	--
Export Credit Guarantee Department premium	24,28,79	5,69
Total (B)	<u>98,30,72</u>	<u>63,47,05</u>
C. LESS OTHER INCOME		
Hire charges	51	4,88
INTEREST FROM		
Indian banks	3	91,88
Foreign banks	2,44,18	90
Others	46,70	28,83
Miscellaneous income	6,21	15,67
Total (C)	<u>2,97,63</u>	<u>1,42,16</u>
GRAND TOTAL (A + B - C)	<u>149,38,86</u>	<u>81,45,54</u>



**PRIOR PERIOD ADJUSTMENT (NET)
SCHEDULE - 17**

(Rs. in Thousands)

		For the year ended 31st March, 1994	For the year ended 31st March, 1993
INCOME			
Depreciation written back - others	41,09		--
Excess provision written back	8,25		13,41
Transmission charges	54,65,01		--
Interest written back on account of conversion of Loan into Equity	70,96,20		--
Interest written Back - Others	14,12		--
Deferred Revenue Expenditure written back	1,43,22		--
Others	80,33		12,82
		128,48,22	26,23
EXPENDITURE			
Salary, wages , allowance & benefits	6,19,55		52,15
Power charges	20,37		4,73
Rates and taxes	10,18		9
Insurance	13,95		--
Depreciation	15,20,04		--
Transmission charges written back on account of revision of tariff	108,18,74		--
Interest	35,11,08		--
Others	2,29,93		15,74
		167,43,84	72,71
Prior period expenditure/income (Net)		38,95.62	46,48



NOTES ON ACCOUNTS SCHEDULE - 18

- The Transmission Systems situated in Jammu & Kashmir associated with NHPC has been taken over w.e.f. 1.4.93 as mutually agreed by NHPC and the Company pending finalisation of legal formalities.
- As per the terms of Memorandum of Understanding (MOU) between Neyveli Lignite Corporation Limited and the Company, transmission systems associated with Neyveli Lignite Corporation Limited (NLC) has been taken over by the Company with effect from 01.04.92 pending enactment of law.
- As per the terms of Memorandum of Understanding (MOU) dated 27.10.93 between the Company and Tehri Hydro Development Corporation (THDC), the associated Transmission systems of THDC has been taken over w.e.f. 1.8.93 on the basis of audited Balance Sheet as at 31.07.1993 furnished by THDC.
- The Southern Regional Load Despatch Centre of Central Electricity Authority has been transferred to the Company on management basis w.e.f.1.1.94 along with associated manpower as per order from Ministry of Power, Government of India, dt. 16.11.93 and 31.12.93. The company has incurred a revenue expenditure of Rs. 23.93 lakhs which has been shown as recoverable from Government of India pending final decision.
- Pending compliance of necessary formalities, the purchase consideration of NLC, J&K Lines of NHPC and THDC has been agreed by transferor organisations and the company, and reflected in final Accounts of the Company as shown below :-

			<i>(Rupees in crores)</i>
S.No.	Share Capital deposit	Loans	Total
I NLC	107.51	275.26	382.77
II J&K Lines of NHPC	38.81	25.91	64.72
III THDC	8.41	-	8.41

Further an amount of Rs. 10.49 crores towards share capital released by Government of India through NLC during 1992-93 for execution of transmission systems has been shown in share capital deposit.

- (a) Share Capital Deposit of Rs. 2600.99 Crores (previous year Rs. 1778.07 Crores) includes equity shares to be allotted against purchase consideration, Loans converted into equity and other sum payable to Government of India, as per Ministry of Power Order No. 1/4/92/POWERGRID dated 31/03/94.
 - (b) As per Government of India Notification dated 31 st March 1994 Government of India Loan of Rs. 567.50 Crores has been converted into equity w.e.f. 1.4.92 and the impact of the same has duly been incorporated in the Books of Accounts by reduction of interest of Rs. 70.96 Crores for the year 1992-93 and consequential decapitalisation to the extent of interest capitalised earlier.
- (a) During the year the Company had forfeited 1st Issue Bonds of 1992 as under for non payment of allotment money: -

(i) 9% tax-free bonds allotted to Andhra Bank Financial Services Limited	Rs.21.00	Crores.
(ii) 9% tax-free bonds allotted to Can Bank Financial Services Limited	Rs. 39.9982	Crores.
(iii) 17% taxable bonds allotted to Can Bank Financial Services Limited	Rs. 63.20	Crores.
TOTAL	Rs. 124.1982	Crores.
- (b) The Company has not provided for the interest payable on these bonds amounting to Rs. 17.09 Crores (previous year Rs. 19.27 Crores).
 - (c) The Company has also not accounted for interest income amounting to Rs. 11.89 Crores (previous year Rs. 14.24 Crores) from these institutions.
 - (d) The Company has to receive the deposit money of Rs. 115.50 Crores (Rs. 94Crores from CANFINA and Rs. 21.50 Crores from ABFSL) along with interest which was kept by these organizations on the due date of maturity. Since the Bonds have been forfeited, the deposits to the tune of Rs. 112.06 crores has been adjusted.
 - (e) Rs. 50 lakhs paid by ABFSL has been accounted by the Company during the year as interest income due on deposit.
- As per Office Memorandum dated 23.5.94 of Ministry of Power, Government of India has agreed to recover the outstanding dues from State Electricity Boards pertaining to period prior to 31/3/94 through Central Appropriation amounting to Rs. 302.21 Crores, which shall be paid by Government of India in four annual instalments starting from the financial year 1994-95. As such the Amount has been shown as amount recoverable through Central appropriation.



9. Transmission charges of Ex-NTPC Transmission system had been revised w.e.f. 1.4.92. Necessary adjustments for reduction in tariff amounting to Rs. 108.19 Crores for 1992-93 has been effected in the current year through prior period adjustments.
10. Transmission charges recoverable on account of Foreign Exchange Fluctuation amounting to Rs. 7.38 Crores for 1992-93 and Rs. 12.33 Crores for 1993-94 has been accounted for in the books of Accounts of the Company.
11. An amount of Rs. 364.20 lakhs incurred by Gujarat Electricity Board towards Tools & Plant, contingencies, establishment etc., are not supported by evidences and hence not capitalized. However, taking into account the amount of Rs. 312.56 lakhs lying as deposit with GEB, the balance amount of Rs. 51.64 lakhs is shown under contingent liability.
12. The cost of land includes provisional deposits, payments/liabilities towards compensation, rehabilitation and other expenses, excluding the deposits/ expenditure incurred wherever possession of land not taken.
13. Certain assets like furniture, fixtures, etc., retained by the transferor organizations, which included in the assets of the Corporation and depreciation charged thereon will be settled/adjusted in subsequent years.
14. 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 agreements for joint ownership.
15. Balances shown under advances, sundry debtors and creditors are subject to confirmation. In the opinion of the management, the value on realization 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.
16. Materials in transit/under inspection/with contractors are subject to confirmation/reconciliation and consequential adjustments, if any.
17. 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 amounts are also not ascertainable.
18. No reserve towards bonds redemption is made in current year in view of the adequate reserve existing in the books of accounts.
19. No payment is overdue for the purchases made from small scale/ancillary industries. Hence no provision of interest is made in the accounts.
20. Consultancy, Project Management and Supervision fees includes Rs. 11.25 lakhs (Previous year Rs. 30 lakhs) for management fees for Mandola Sub-station for which the agreement is yet to be finalized.
21. Pending finalisation agreement with Orissa State Electricity Board, charges for wheeling of Power through Jepore-Talcher Transmission System have been accounted for at the rate of Rs. 40 lakhs per month.
22. Pending finalisation of wage agreements/pay revision w.e.f. 1.1.1992 necessary provision has been made in the Books of Accounts on estimated basis.
23. In the absence of taxable income no provision for income tax for the year is considered necessary.
24. As per Accounting Policy No. 10.3 surcharge on outstanding dues from State Electricity Boards amounting to Rs. 52.73 Crores (Previous year Rs. 18.98 Crores) has not been accounted for.
25. Depreciation charged in the Accounts is lower by Rs. 80.65 crores (Previous year Rs. 42.48 crores) if calculated as per Section 205 (2) (b) of Companies Act., 1956. The Cumulative effect of the same upto 31st March 1994 is Rs. 123.36 crores (upto previous year Rs. 42.71 crores).
26. Estimated amount of capital commitments is Rs. 1277.20 Crores (previous year Rs. 611.48 crores).
27. (a) Employees' remuneration and benefits include the following for the Directors including Chairman & Managing Director:

	Current Year	Previous Year
Salaries & Allowances	638	3.53
Contribution to Provident Fund & Other funds including Gratuity & Group Insurance	0.37	0.35
Other Benefits	1.59	1.16

- b) In addition to the above remuneration the whole time Directors 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(18)/pc/64 dt. 29.11.64 as amended.



28. Quantitative information in respect of Purchase & Sale of Power

	Current Year	Previous Year
a) Purchase of Power (Million Units)	1480	1309
b) Sale of Power (Million Units)	1480	1309

29. a) Value of imports calculated on CIF basis:

	Current Year	Previous Year
i) Capital goods (includes Rs. 2428.79 lakhs paid to ECGD and Rs. 7932.36 lakhs paid to contractors towards HVDC Chandrapur)	17787.15	4795.85
ii) Spare parts	--	21.57

b) Expenditure in foreign currency

	Current Year	Previous Year
i) Professional and Consultancy fees	92.24	106.81
ii) Interest	1397.73	867.29
iii) Others	20.51	21.78

c) Value for Components, Stores and Spare parts consumed :

	% age	Current Year	% age	Previous Year
i) Imported	8.33	13.39	0.01	0.10
ii) Indigenous (including fuel)	91.67	147.49	99.99	105.53

d) Earnings in foreign exchange:

	Current Year	Previous Year
i) Consultancy	-	-
ii) Interest	244.18	0.80
iii) Grant-in-aid (HVDC Chandrapur)	7926.08	-
iv) Others (Sale of tender papers)	0.47	0.33

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

(P.D.TUTEJA)
Secretary

For Batra Sapra & Company
Chartered Accountants

(A.L.BATRA)
Partner

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

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

(LAXMINIWAS SHARMA)
Partner

(S.C. PARAKH)
Director (Projects)

(R.K.NARAYAN)
Chairman & Managing Director

For Sri Associates
Chartered Accountants

(I.PASHA)
Partner

Place : Ner Delhi
Date : 10th August, 1994



AUDITORS' REPORT

To the Members of
PowerGrid Corporation of India Ltd.,
New Delhi

We have audited the attached Balance Sheet of PowerGrid of India Limited as at 31st March, 1994 and annexed profit & Loss Account for the year ended on that date together with the Schedules, Notes forming part of the 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 provisions of the Companies Act 1956.
2. As required by the Manufacturing and the Other Companies (Auditors' 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 this report are in agreement with the books of account.
 - (d)
 - (i) Accounting Policy No. 3.0 "RENOVATION AND MODERNISATION" is introduced this year. In our opinion, replacement of an old part does not increase the life of complete asset. Hence capitalization of a part does not give the fair value of asset. By this policy the Company has valued its assets more and revenue expenditure is lower by Rs. 120.24 lakhs and profit is higher to that extent.
 - (ii) Accounting policy No. 10.4 under "MISCELLANEOUS" is also introduced this year. In the previous year front end fees for the loans was charged to revenue expenditure and for the Bonds issued treated as deferred revenue expenditure. With the introduction of the present accounting policy the front end fee on loan is treated as deferred revenue expenditure. Hence the profit has increased by Rs. 145.15 lakhs and the revenue expenditure is lower to this extent.
 - (iii) Schedule-18, Notes on account 1 to 5 dealing with the takeover/management of transmission systems pending legal formalities, enactment of law, etc., the final impact of it on total value of asset/liability or profit not ascertainable.
 - (iv) The Company has transferred Rs. 302.21 crores from sundry debtors and exhibited the same under Advances in Loans and Advances as amount recoverable through Central appropriation. (Refer Note No. 8 of Schedule 18).
 - (v) Schedule-18, Note No. 7 dealing with forfeiture of I-Issue of Bonds 1992. Forfeiture of fully paid bonds and transfer of the amount to adjust the same with deposits with Canbank Financial Services Ltd., and Andhra Bank Financial Services Ltd., included under the "Deposit with Customs, Port Trusts and other Authorities" under Advances and "Miscellaneous Expenditure" has resulted in lowering of liability to the extent of Rs. 124.20 crores. The deposits with these financial Institutions are shown lower by 112.06 crores and Deferred Revenue Expenditure is lower by Rs. 12.14 crores.

Non-provision of interest payable on these bonds amounting to Rs. 17.09 crores and non accountal of interest income amounting to Rs. 11.89 crores from the deposits made with CANFINA & ABFSL resulted in profit being higher by Rs. 5.20 crores.

The Company has not provided for Rs. 3.44 crores of deposits kept with ABFSL which is doubtful of recovery.
- (e) Certain assets are withheld by the transferor organisation to be settled/adjusted in subsequent year, which are included in the assets of the Corporation and depreciation charged thereon. The impact of which on assets, depreciation and profit for the year cannot be ascertained and quantified (Refer Note No. 13 of Schedule-18).
- (f) The confirmation of balances shown under advances, sundry debtors, sundry creditors, material in transit/under inspection/with contractors and reconciliation thereof is pending. The impact of the above on assets and liabilities and on the profit cannot be ascertained.



AUDITORS' REPORT (Contd.)

(viii) Non provision of entry tax and Sales Tax on works contracts and materials issued to contractors. The impact of which on liabilities and profit are not ascertained (Refer Note No. 17 of Schedule-18).

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-18 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 the state of affairs of the Company as at 31st March, 1994; and
- ii) In the case of 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

(LAXMINIWAS SHARMA)
Partner

For **SRI ASSOCIATES**
Chartered Accountants

(I. PASHA)
Partner

Place: New Delhi
Date: 10th August, 1994.



ANNEXURE TO THE AUDITORS' REPORT

1. The Company has generally maintained and in some cases it is in process of updating proper records showing full particulars, including quantitative details, and situation/location, as far as practicable of its fixed assets. Some of the fixed assets have been physically verified by the Management during the year except certain assets held by Transferor Organisations. The Materiality in discrepancies, if any, between book records and physical inventory could not be ascertained in absence of comparison with book records.
2. None of the fixed assets have been revalued during the year.
3. As explained to us, the stocks of stores and spare parts at most of the places 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 explanation given to us, in our opinion the frequency of verification of stocks followed by the management is reasonable and adequate in relation to the size of the company and the nature of its business.
5. Material discrepancies if any could not be ascertained in absence of the comparison between the physical balance taken with the book balance. Hence the question of properly dealing of the discrepancies in the books of account cannot be commented upon.
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, except that, the company has to identify the obsolete stock and depreciate the value if necessary.
7. The Company has not taken any loans from the 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 the 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 the Section.
9. The Company has given deposit to Canbank Financial Services Ltd., and Andhra Bank Financial Services Ltd., in addition to banks and advances in the nature of loans to employees. The banks and employees are generally repaying the principal amount and interest as per stipulation. The Canbank Financial Services Ltd. and Andhra Bank Financial 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 of purchase are of a special nature, for which suitable alternative sources do not exist for obtaining comparable quotations. In the case of awarding contract to GEC Alstom and Cegelux for Chandrapura HVDC at a higher value compared to other parties, the contract was evaluated lower taking into consideration the capital grant given by UK Govt. 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 U/S 301 of the Companies Act, 1956 aggregating during the year to Rs. 50,000 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. The Company has not determined any unserviceable or damaged stores and hence no provision is made for the losses, if any, in the accounts.
13. The Company has not accepted any deposits 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 has maintained reasonable records.
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. The Central Govt. has not prescribed maintenance of cost records U/S 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 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 amounts payable in respect of Income Tax, Wealth Tax, Sales Tax, Customs Duty and Excise Duty which have remained outstanding, as at 31st March, 1994 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 generally accepted business practice.
20. The Company is not a Sick Industrial Company as defined in Section 3(1)(O) 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, issue and consumption of materials and stores commensurate with the size and the nature of its business.
22. In regard to the 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 does not arise.

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

(A.L.BATRA)
Partner

For **LAXMINIWAS & JAIN**
Chartered Accountants

(LAXMINIWAS SHARMA)
Partner

For **SRI ASSOCIATES**
Chartered Accountants

(I. PASHA)
Partner

Place: New Delhi
Date: 10th August, 1994.



ANNEXURE-I

PARTICULARS REQUIRED UNDER THE COMPANIES (DISCLOSURES OF PARTICULARS IN THE REPORT OF THE BOARD OF DIRECTORS) RULES, 1988 UNDER SECTION 217(1)(e) OF THE COMPANIES ACT, 1956

CONSERVATION OF ENERGY

(a) Energy conservation measures taken and on hand

POWERGRID is working in the advisory capacity in minimisation of transmission and distribution losses as part of energy conservation measures. Some of the main activities are as follows:

- Preparation of a pilot project report for conservation of low voltage distribution system to high voltage system in one pocket in Delhi which is expected to result in peak loss reduction from 181.3 kw to 43.55 kw i.e. 76% and benefit cost ratio 1:8.
- Association with Planning Commission in their National Energy Efficiency Programme which envisages energy conservation resulting in saving installed capacity of 5000 MW during 8th Plan. Out of this, 1250 MW is earmarked for transmission and distribution loss reduction for which POWERGRID would be the nodal agency.
- Conducting energy audit in an urban area under West Bengal State Electricity Board and preparation of distribution system improvement scheme with a view to reduce distribution losses.
- Preparation of papers and demonstration to various agencies on measures to reduce transmission and distribution losses.

(b) Additional Investment and Proposal, if any, being implemented for reduction of consumption of Energy

- There would be no direct investment from POWERGRID.
- Delhi Electricity Supply Undertaking is expected to invest Rs. 11 lakhs during 1994-95 on pilot schemes for energy audit in two industrial areas to be conducted by POWERGRID.
- WBSEB is expected to invest Rs. 4.5 lakhs for energy audit etc. mentioned above to be conducted by POWERGRID.
- POWERGRID is expected to prepare a scheme for improvement of distribution system in 4 towns in Goa for reduction of energy losses involving expenses of Rs. 2.5 lakhs to be contributed by Electricity Department, Government of Goa.

(c) Impact of measures at (a) and (b) above reduction of Energy consumption and consequent impact on the cost of production of goods

Impact for reduction of energy consumption will be felt only after the schemes mentioned in (b) are prepared and investments made in implementation of the scheme. The financial benefit in reduction of losses is, however, expected to be much more than the amount of investment.

(d) Total Energy consumption and energy consumption per unit of production as per form 'A' of the annexure in respect of industries specified schedule thereto

This is not applicable for POWERGRID since it does not fall under any of the industries mentioned in the schedule.

(e) Research and Development, Technology Absorption

This has been covered in the main body of the Directors' Report.

(f) Foreign Exchange Earnings and outgo

Information has been given as part of Annual Accounts.



ANNEXURE-II

COMMENTS OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA ALONG WITH MANAGEMENT'S REPLY UNDER SECTION 619 (4) OF THE COMPANIES ACT, 1956 ON THE ACCOUNTS OF THE POWER GRID CORPORATION OF INDIA LIMITED, NEW DELHI FOR THE YEAR ENDED 31ST MARCH 1994.

Comments

Management Reply

(A) BALANCE SHEET

CURRENT ASSETS, LOANS AND ADVANCES (SCHEDULE 8)

Inventories Rs. 6093.74 lakhs

- i) This has been understated by Rs. 132.28 lakhs owing to non accountal of spares transferred to the Company by National Thermal Power Corporation Limited. Current Liabilities and Provisions (Schedule 9) also stand understand to that extent.
- ii) This has been understed by Rs. 3779.38 lakhs due to non transfer of the value of Mandatory spares, after completion of the project from Plant and Machinery which consequently stands over started by that amount (Less Depreciation amounting to Rs. 382.47 lakhs)

B) PROFIT AND LOSS ACCOUNT

Profit for the year (before tax) of Rs. 18787.67 lakhs has to be viewed in the light of the following.

- i) Foreign Exchange Rate Variation of Rs. 496.77 lakhs for the year 1993-94 and Rs. 335.41 lakhs for prior periods on spares of completed projects (after adjusting depreciation) has been capitalised instead of charging to Profit and Loss Account.
- ii) The Transmission charges of Rs. 1233.00 lakhs for the year 1993-94 and Rs. 738.00 lakhs for prior periods on account of Foreign Exchange Rate Variation has been taken as income receivable although the enabling notification of Government of India is yet to be issued.
- iii) Interest during the construction period of Rs. 400.56 lakhs for the year 1993-94 and Rs. 328.69 lakhs for prior periods has been charged to profit and loss account instead of being capitalised.

- i) Although National Thermal Power Corporation Limited had transferred the spares mentioned by Audit, it was not possible to take this into stock till verification and acceptance for reasons such as incomplete documentation, pending insurance claims etc. It is proposed to reconcile these deficiencies and take the correct stock into powergrid's Account after obtaining necessary documents etc. during 1994-95.
- ii) As per para 2.57 of Annexure III of Electricity (Supply) Annual Accounts Rules, 1985 capital spares purchased prior to commissioning shall be capitalised upon commissioning of the Transmission System for which the spares are purchased. This policy is being followed by the corporation from the date of acquisition of these transmission systems and has thus statutory backing and is as per general commercial accounting practice.

- i) In view of the Accounting Policy clarified in the reply to Para A (ii) above, the prodedure adopted is correct and there is no occasion to charge the related ERV to Profit and Loss Account.

The capital spares relating to HVDC Vindhychal had however, been transferred by NTPC as O & M spares instead of capitalising the same and as a result the difference between the depreciation on these spares and consumption charged to profit and loss account which works out of Rs. 8 lakhs, had to be charged to profit and loss account but the same has not been done. The impact of profit being only Rs. 8 lakhs, however this is not considered material.

- ii) Bill were raised against SEB's pending notification by the Ministry of Power towards ERV, on he basis of tariff policy enuciated in consultation with CEA. These have been minuted in the meeting taken on 29th Octorber, 1993 in CEA which have been shown to Audit.
- iii) The interest allocation between capital and revenue has been done as per the policy adopted by Neyvelli Lignite Corporation, However, necessary rectification shall be made in the year 1994-95 based on the accounting policy of the Corporation.

Sd/-

(KANWAL NATH)

PRINCIPAL DIRECTOR OF COMMERCIAL AUDIT AND
EX-OFFICIO MEMBER, AUDIT BOARD-III NEW DELHI

For and on behalf of Board of Directors

Sd/

(R K NARAYAN)

Chairman & Manging Director



CURRENT COST ACCOUNTS

In the context of persistent inflation in the Indian economy, the Corporation has attempted to perceive the impact of price changes on its financial position and working results. The current cost accounts shown hereunder reflect the current values of assets of the Corporation which mainly comprise fixed assets. We believe that current cost accounting assumes special importance in the case of public utility like the Corporation the prices of whose services are determined by reference to the related costs rather than by the market forces of demand and supply as in the case of other business enterprises. If the prices of the services rendered by a current cost depreciation and other current costs being incurred. Over a period of time, the enterprise will not be able to maintain its operating capability even though it may show profits as per conventional, historical cost-based accounts. It is perhaps for this reason that internationally, many public utilities prepare even their main accounts on the basis of current cost accounting.

BASIS OF ACCOUNTING UNDER CURRENT COST ACCOUNTING FOR THE CORPORATION

1. The exercise has been conducted on the basis of the principles enunciated in the Guidance Note on Accounting for Changing Prices issued by the Institute of Chartered Accountants of India.
2. The current cost adjustments have generally been made on the basis of specific indices for various items. These indices have been computed by the Corporation as below:
 - a) Plant and machinery constitutes about 95% of the total fixed assets of the Corporation. Further, out of the various items of plant and machinery, ten specific items constitute about 95% of the total value of plant and machinery. Accordingly, an exercise has been carried out to work out the specific indices reflecting the changes in prices of these items. The indices for various items of plant and machinery have been worked out on the basis of an appropriate combination of –
 - i) detailed indices comprising the wholesale price index published by the Office of the Economic Advisor, Ministry of Industry, Government of India, and
 - ii) Indices of specific items as circulated by the Indian Electrical and Electronics Manufacturers' Association.

In the case of HVDC which mainly comprises imported plant and machinery, direct pricing method has been used, taking the corresponding prices in 1994 as the basis for determining the current cost.

Fixed Assets

Fixed assets are stated at their gross current replacement cost by applying the relevant specific indices to the gross book value of each category of fixed assets. The net current replacement cost has been arrived at by charging depreciation on the gross current replacement cost at the rates specified under the Electricity (Supply) Act, 1948.

The lives of fixed assets acquired from other enterprises have been worked out on the basis of the original cost, rate of depreciation and the written down value.

Capital Work in progress

Since the gestation period is 3-5 years for each project, capital work-in-progress has also been stated at its current replacement cost.

Inventories

Since inventories comprise mainly machinery spares, they have been restated on the basis of the indices used for the relevant items of plant and machinery.

Other Assets and Liabilities

Cash, sundry debtors, loans and other liabilities have not been revalued since these are already expressed in current monetary items.

Depreciation Adjustment

The depreciation adjustment represents the difference between the amount of depreciation computed on the current cost of fixed assets and the amount of depreciation charged in the historical cost accounts.

Gearing Adjustment

As a part of the operating assets of the Corporation is financed through borrowings which are to be repaid in the same monetary amount irrespective of changes in prices, the full impact of price changes as reflected by the depreciation adjustment has been reduced by adding back a proportionate amount while determining the current cost profit attributable to shareholders.

The current cost reserve represents unrealized revaluation surplus on fixed assets, adjustment in respect of depreciation, and the gearing adjustment.



CURRENT COST BALANCE SHEET
As on 31st March, 1994

(Rs. in Thousands)

	As at 31st March, 1994	As at 31st March, 1993
NET ASSETS EMPLOYED		
Gross block	74809581	63439017
Less : Accumulated depreciation	8532882	5307296
Net block	66276699	58131721
Capital work-in-progress	13816920	8489993
Construction stores and advances	4073900	3143290
Investment	20	10
Net current assets		
Inventories	646135	569053
Other current assets	8524227	6281936
	9170362	6850989
Less : Current liabilities and provisions	4703025	3521908
	4467337	3329081
Miscellaneous expenditure (to the extent not written off or adjusted)	82810	154516
	88717686	73248611
FINANCED BY		
Shareholders funds		
Share capital	28891261	18491720
Current cost reserves	28939722	25550611
Other reserves and surplus	4156040	2347901
	61987023	46390232
Loan funds		
Secured loans	3042812	512209
Unsecured loans	23687851	26346170
	26730663	26858379
	88717686	73248611

CURRENT COST PROFIT AND LOSS ACCOUNT
For the year ended 31st March, 1994

(Rs. in Thousands)

	For the year ended 31st March, 1994	For the year ended 31st March, 1993
Profit before interest and finance charges and taxation (on historical cost basis)	3383761	-
Less Depreciation adjustment	1160565	-
Current cost operating profit	2223196	-
Add : Gearing adjustment	337328	-
	2560524	-
Less: Interest and finance charges	1504994	-
Provision for taxation	-	-
	1504994	-
Current cost profit attributable to shareholders	1055530	-



ANNEXURE TO DIRECTORS' REPORT
Particulars of Employees Pursuant to Section 217 (2A) of the Companies Act, 1956

Sl. No.	Name	Designation and Nature of Employment	Remuneration (Rs.)	Qualification	Experience (Years)	Date of Commencement of Employment	Age (Years)	Last Employment held
1.	2.	3.	4.	5.	6.	7.	8.	9.
Employed for the full of the year								
1.	Adinarayana S.	DGM (F)	1,92,810	M.Com., FCA	19	21.02.91	47	NTPC LTD.
2.	Agarwal A.K.	Sr. Mgr. (P&A)	1,79,608	B.A. (Econ. H). PGDPM, PGDLW, LLB	24	01.04.91	45	NHPC LTD.
3.	Agarwal A.R.	AGM	1,70,753	B.Sc., B.E. (Elect.)	23	19.11.91	46	NHPC LTD.
4.	Agarwal S.K.	Sr. Mgr.	1,47,467	B.E. (E), M.Tech	19	21.06.91	40	NTPC LTD.
5.	Agarwal V.C.	DGM	2,18,297	B.E. (Civil), M.E. (Civil)	28	16.08.91	51	NTPC LTD.
6.	Amulya Charan	GM	1,92,312	B.E. (M), PGD. in Buss Admn.	20	14.03.91	46	NTPC LTD.
7.	Arun Kumar	Sr. Mgr	1,70,183	B.E. (E)	17	26.06.91	39	NTPC LTD.
8.	Asthana A.K.	Sr. Mgr (Comml.)	1,55,562	B.E. (Civil)	24	16.08.91	48	NTPC LTD.
9.	Bahri R.	Sr. Mgr	1,72,538	B.Sc., Engg. (E)	20	16.08.91	42	NTPC LTD.
10.	Banerjee B.K.	GM	1,55,668	B.Sc., B.E. (Civil)	29	16.08.91	53	NTPC LTD.
11.	Batra Yash Pal	GM	1,85,187	B.Sc., Engg. (Civil), M.I.E.	34	16.08.91	57	NTPC LTD.
12.	Bhanu Bhushan	GM	1,68,124	B.Sc., Engg. (E)	27	21.01.91	50	NTPC LTD.
13.	Bharat Bhusan	Sr. Mgr	1,48,588	B.E. (Elect.)	16	16.08.91	36	NTPC LTD.
14.	Bhatanagar A.K.	GM	1,53,060	B.Sc. Engg. (Telecom)	30	27.08.91	54	CMC LTD.
15.	Bhatnagar M.C	CDE	1,72,020	B.E. (E)	23	16.08.91	43	NTPC LTD.
16.	Bhatnagar Vinay	Manager	1,62,924	B.A., M.A. (Soc. Work)	19	02.06.91	42	NTPC LTD.
17.	Bire S.G.	DGM (III)	1,48,070	B.E. (Elect.)	28	16.08.91	51	NTPC LTD.
18.	Chanda N.R.	DGM (J)	1,72,279	B.E., M.E. Part-1	22	16.08.91	47	NTPC LTD.
19.	Chandra U.	DGM	1,51,753	B.E. (E)	22	16.08.91	45	NTPC LTD.
20.	Chanrasekaran S.	C.F.M	1,49,443	B.Sc., FCA, AICIAM, Sahitya Ratn.	17	19.12.91	41	NHPC LTD.
21.	Chaturvedi S.K.	C.P.M.	1,44,418	M.Sc. (Hons)	17	16.08.91	43	NTPC LTD.
22.	Chopra V.N.	DCDE	1,57,054	B.E. (C)	25	16.08.91	49	NTPC LTD.
23.	Choudhary D.	Sr. Mgr.	1,49,784	B.E. (C)	18	16.08.91	44	NTPC LTD.
24.	Choudhay D.K.	Sr. Mgr.	1,58,717	B.E. (E)	18	14.11.91	47	NEEPCO LTD.
25.	Choudhary R.P.	DGM	1,86,325	B.E. (E)	25	16.08.91	49	NTPC LTD.
26.	Dua V.L.	Sr. Mgr.	1,45,291	D.M.E., D.B.M.	24	28.01.91	47	NTPC LTD.
27.	Dwivedi M.G.	DGM	1,48,987	BSc. Engg. (E) M.E.	22	19.11.91	49	NHPC LTD.
28.	Dwivedi P.K.	GM	1,74,362	B.Tech (E)	23	20.09.91	52	NTPC LTD.
29.	Garg Subodh	Manager	1,50,414	B.Sc. (Engg.)	17	16.08.91	38	NTPC LTD.
30.	Goplararao V.	DGM	1,47,894	B.E. (Mech.)	33	16.08.91	54	NTPC LTD.
31.	Gupta Arun	ED (CS&P)	1,74,421	B.Tech. (Hons)(C)	32	14.01.91	53	NTPC LTD.
32.	Gupta B.K.	Sr. Mgr. (C&M)	1,69,473	B.Sc. Engg. (Mech.)	24	16.08.91	45	NTPC LTD.
33.	Gupta M.R.	Sr. Mgr.	1,68,424	B.sc., B.E. (Elect.)	22	16.08.91	45	NTPC LTD.
34.	Gupta P.N.	Sr. Mgr. (P&C)	1,92,336	B.Sc., B.E. (Elect.) PGDBM., B.L.	25	16.08.91	50	NTPC LTD.
35.	Gupta V.K.	Manager	1,59,889	B.E. (E), M.Tech. (C&I)	17	16.08.91	39	NTPC LTD.
36.	Haque jainul	DGM (CS)	1,62,894	B.E. (M)	25	16.12.91	47	NTPC LTD.
37.	Jaggi A.L.	Director (O)	1,85,411	B.E. (Elect.)	28	19.11.91	55	NHPC LTD.
38.	Jain Ashwani	Sr. Mgr.	1,61,065	B.Sc. (Elect.)	15	16.08.91	36	NTPC LTD.
39.	Jain S.M.	DGM	1,59,996	B.E. Engg.(E)	30	10.10.91	52	NTPC LTD.
40.	Jaiswal I.C.	DGM	1,45,566	B.E. (M)	22	16.08.91	44	NTPC LTD.
41.	Javeri C.S.	Manager (E)	1,51,033	B.E. (Elect.)	22	19.11.91	45	NHPC LTD.
42.	Kakar R.D.	DGM	1,49,960	B.Sc. Engg. (E)	28	08.04.91	52	NTPC LTD.
43.	Kanwar B.S.	AGM	1,83,287	B.Sc. Engg. (E)	30	19.11.91	52	NHPC LTD.
44.	Kapur A.K.	DGM	1,65,675	B.E. (E)	32	15.07.91	54	CEA
45.	Kathuria B.D.	Manager	1,44,788	B.A. PGDPMEIR	35	16.10.91	53	NTPC LTD.
46.	Khanna A.K.	DGM	1,44,351	B.Sc. Engg.	22	16.08.91	47	NTPC LTD.
47.	Kidwai I.R.	Manager	1,47,251	B.Com. (Hons.), PGDBM	19	31.01.92	40	NTPC LTD.
48.	Krishnan Ranjit	Dy. Manager	1,73,517	B.Sc. (Engg.)	12	16.08.91	36	NTPC LTD.
49.	Kukreja H.C.	DGM	1,65,531	B.Sc. Engg. (Elect.) DAM.	23	16.08.91	45	NTPC LTD.
50.	Kumar Binay	DGM (THRD)	1,54,277	M.A. (Sociology), PG. Dip. IR&W	24	20.05.92	46	THDC
51.	Kumar V.	AGM	1,45,135	B.Tech. (Hons.) M.Tech. (Str.)	32	16.08.91	53	NTPC LTD.
52.	Lal Munishwar	Manager	1,44,539	B.E.	16	01.11.91	40	NTPC LTD.
53.	Madan R.K.	GM (NR-I)	2,15,700	B.Sc., B.Sc. Engg. (Elect.)	27	19.11.91	53	NHPC LTD.
54.	Mahendra Kumar	DGM	1,70,260	B.Sc., B.E. (E), ADBM	24	18.06.92	46	NTPC LTD.
55.	Majumdar S.K.	DGM	1,66,688	B.E. (M)	22	14.01.91	45	NTPC LTD.
56.	Manglik A.	DGM (F)	1,66,556	B.E. (E), M.E. PG Dip. in IR	19	16.08.91	47	NTPC LTD.
57.	Manohar B.	Manager	1,49,276	B.Tech. (Civil)	13	16.08.91	35	NTPC LTD.
58.	Mathur S.K.	Sr. Mgr. (O&M)	1,56,893	B.E. (Elect.), MBA	23	16.08.91	46	NTPC LTD.
59.	Mishra S.B.C	AGM	1,62,176	B.Sc., B.E. (Elect.)	22	19.11.91	47	NHPC LTD.
60.	Mishra S.C.	AGM (ER)	1,61,021	B.Sc. Engg.	28	16.08.91	49	NTPC LTD.
61.	Mittal A.K.	DCDE	1,49,658	B.E. (E), M.Tech.	13	19.11.91	36	NHPC LTD.



ANNEXURE TO DIRECTORS' REPORT

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

Sl. No.	Name	Designation and Nature of Employment	Remuneration (Rs.)	Qualification	Experience (Years)	Date of Commencement of Employment	Age (Years)	Last Employment held
1.	2.	3.	4.	5.	6.	7.	8.	9.
62.	Mitta Sudhir	DCDE	1,45,188	B.Tech., M. Tech. (C)	15	16.08.91	38	NTPC LTD.
63.	Nanda R.K.	DGM	1,74,965	B.Tech. (Civil)	30	16.08.91	52	NTPC LTD.
64.	Nandi D.K.	GM (WR)	1,51,995	B.Sc.(Hons.), B.Tech.	28	16.08.91	53	NTPC LTD.
65.	Narasimhan S.P.L.	DGM	1,75,988	A.M.I.E. DEE (Elect.)	31	16.08.91	52	NTPC LTD.
66.	Narayan R.K.	CMD	1,48,769	B.Sc., Engg. (E)	38	01.11.90	57	NTPC LTD.
67.	Narayan M.	DGM	1,61,632	B.E. (Civil), DBA	28	16.08.91	54	NTPC LTD.
68.	Narula S.K.	G.M.	2,03,069	B.A., PGD in Labour Lasw	30	19.02.91	50	NTPC LTD.
69.	Nayak R.N.	Sr. Mgr.	1,44,850	M.Tech. (E)	15	21.01.91	39	NTPC LTD.
70.	Parakh S.C.	Director (Proj.)	2,08,535	B.Sc. Engg. (M)	34	15.11.91	56	NTPC LTD.
71.	Pathak A.K.	DGM	1,59,729	B.Sc. Engg. (E), M.I.E.	28	16.08.91	52	NTPC LTD.
72.	Prabhakar R.D.	DGM (II)	1,45,079	M.Sc., Engg.	24	19.11.91	46	NHPC LTD.
73.	Prasad S.S.	Manager (IE)	1,48,253	M.Tech. DPM (NIPM)	13	13.11.91	38	NTPC LTD.
74.	Prasad Y.S.	Dy. Manager	1,46,409	B.Com., ACA	17	19.12.91	44	NHPC LTD.
75.	Raina K.B.	CPM	1,50,559	MSW	31	19.12.91	54	NTPC LTD.
76.	Raizda M.K.	Sr. Mgr.	1,58,716	B. Tech., Fellow in Bus. Mgmt.	14	11.12.91	41	NTPC LTD.
77.	Raji Philip	CPM	1,50,868	B.Sc., PGDM (IIM)	15	27.03.91	37	IFFCO
78.	Rao S.S.	DGM	1,63,347	B.E.(Mech.) PGDBM	24	16.08.91	47	NTPC LTD.
79.	Rathore Kailash	ACDE	1,53,393	B.Sc., B.E. (E)	10	16.08.91	31	NTPC LTD.
80.	Roy Alok Kumar	CDE	1,55,719	B.Sc. (Engg.) M.Tech.	15	16.08.91	39	NTPC LTD.
81.	Sachdeva Suresh	DGM	1,66,634	B.Sc. Engg. (Mech.), MBA	17	14.01.91	37	NTPC LTD.
82.	Sai R.S.T.	Sr. Mgr. (F)	1,53,667	B.Tech., PGDM (IIM)	17	16.08.91	38	NTPC LTD.
83.	Sanyal B.	DGM (F)	1,53,566	B.Com., LLB., ICWA	38	16.08.91	57	NTPC LTD.
84.	Satyam K.	DGM (I)	1,47,244	B.E. (Civil)	26	16.08.91	48	NTPC LTD.
85.	Sharma K.L.	ED(F)	1,73,059	B.Com., LLB, ACA	30	02.04.93	55	KRIBHCO
86.	Sharma S.S.	Sr. Mgr.	1,57,453	B.Sc. Engg. (E), MBA	19	16.08.91	42	NTPC LTD.
87.	Singh Ganesh	Sr. Mgr.	1,62,422	M.E. (Elect.)	16	16.08.91	43	NTPC LTD.
88.	Singh Gurnam	C.L.O.	1,44,294	B.Sc., B.L., DCLLL	20	11.06.91	56	NTPC LTD.
89.	Singh Kailash	GM	1,79,572	B.A., LLB	28	01.05.91	53	HSCL
90.	Singh Mahinder	Manager	1,46,343	B.Tech.	17	16.08.91	41	NTPC LTD.
91.	Singh O.N.	DGM (F)	1,52,739	B.B.M., M.B.M.	19	16.08.91	43	NTPC LTD.
92.	Singh R.P.	AGM (CS)	1,84,094	B.Sc. (Engg.) (M), Dip. in I&S	24	21.01.91	46	NTPC LTD.
93.	Sinha A.P.	DGM (P&A)	1,95,223	B.A., PGDPM, LLB., Dip. in SDCG.	35	02.04.91	56	NEEPCO LTD.
94.	Sohony D.G.	DGM (TS)	1,47,660	B.E. (Hons),Mech.	22	16.08.91	45	NTPC LTD.
95.	Sreeramulu P.	C.F.M.	1,80,032	B.Com., ACA	19	16.08.91	44	NTPC LTD.
96.	Srivastava V.K.	Manager	1,45,082	B.Sc.Engg. (E)	11	16.08.91	33	NTPC LTD.
97.	Subramanian T.V.	Director (F)	1,82,098	B.A. (Hons), FICWA, AMIA (USA)	34	28.09.90	57	NTPC LTD.
98.	Sudarsanam T.	DGM	1,51,071	B.L., PG Dip. (PM&IR), MBA, M.A.	37	16.08.91	55	NTPC LTD.
99.	Sunder R. Shyam	Manager	1,45,082	B.Tech.	33	07.12.92	54	NLC
100.	Tahalyani T.C.A.	DGM	1,60,361	B.Sc.Engg. (E) M.Sc. Engg. (E)	22	19.11.91	47	NHPC LTD.
101.	Tayal H.L.	Sr. Mgr.	1,69,621	Dip. in Mech., AMIE	23	08.10.91	44	NTPC LTD.
102.	Tamilavel R.	Sr. Mgr.	1,49,620	B.E. (Elect.)	24	16.08.91	47	NTPC LTD.
103.	Vardhan V.S.D.	Manager	1,64,051	B.Sc. (Engg.) Mech.	18	16.08.91	43	NTPC LTD.
104.	Veeraju M.	DGM	1,52,384	B.E. (Elect.)	29	16.08.91	54	NTPC LTD.
105.	Ventataramani S.	CFM	1,54,289	AICWA	34	16.08.91	54	NTPC LTD.
106.	Yadav A.K.	DGM	1,56,688	B.E. (E)	23	16.08.91	47	NTPC LTD.
107.	Yadav R.G.	DGM	1,66,379	B.E.(Mech.)	26	16.08.91	44	NTPC LTD.

Employed for the part of the year

1.	Chawla S.K.	Director (Pers.)	1,48,055	B.Sc., B.Sc. (H) (Pet. Engg.), PGDOM	32	25.06.93	56	ONGC LTD.
2.	Mani J.	DGM	1,39,539	B.E. (Elect.)	38	01.12.92	58	NLC LTD.
3.	Rao M.M.	Manager	36,803	B.E. (Elect.)	25	01.01.94	49	SREB (CEA)
5.	Subban S.N.	Manager	37,076	B.E. (Elect.)	21	01.01.94	47	SREB (CEA)

Notes:

- 1) Persons named above are full time Directors/Employees of the Company.
- 2) Remuneration includes Salary, Allowances, Leave encashment, Leave Travel concession; Payment for Subsidised leased accommodation, reimbursement of medical expenses to employees and employer's contribution to Provident funds and other funds. In addition employees are entitled to Gratuity/ Group insurance in accordance with Company's rules. The whole time directors have been allowed the use of staff car including for private journey on payment of Rs. 400. p.m. as may be applicable in accordance with the provisions of the BPE Circular No: 2(18)/ PC/64 dated 20.11.64 as amended from time to time.
- 3) None of the Employees listed above is related to any Directors of the Company.

