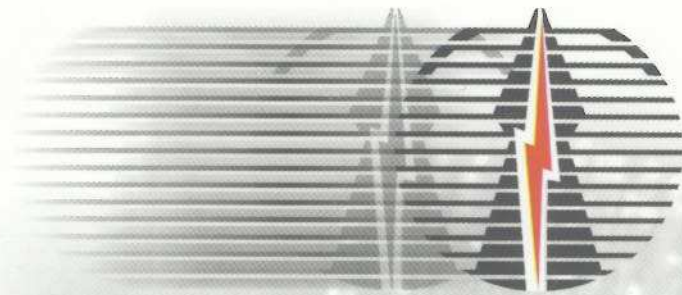


ANNUAL REPORT  
1999-2000



POWER GRID CORPORATION OF INDIA LIMITED

## C O N T E N T S

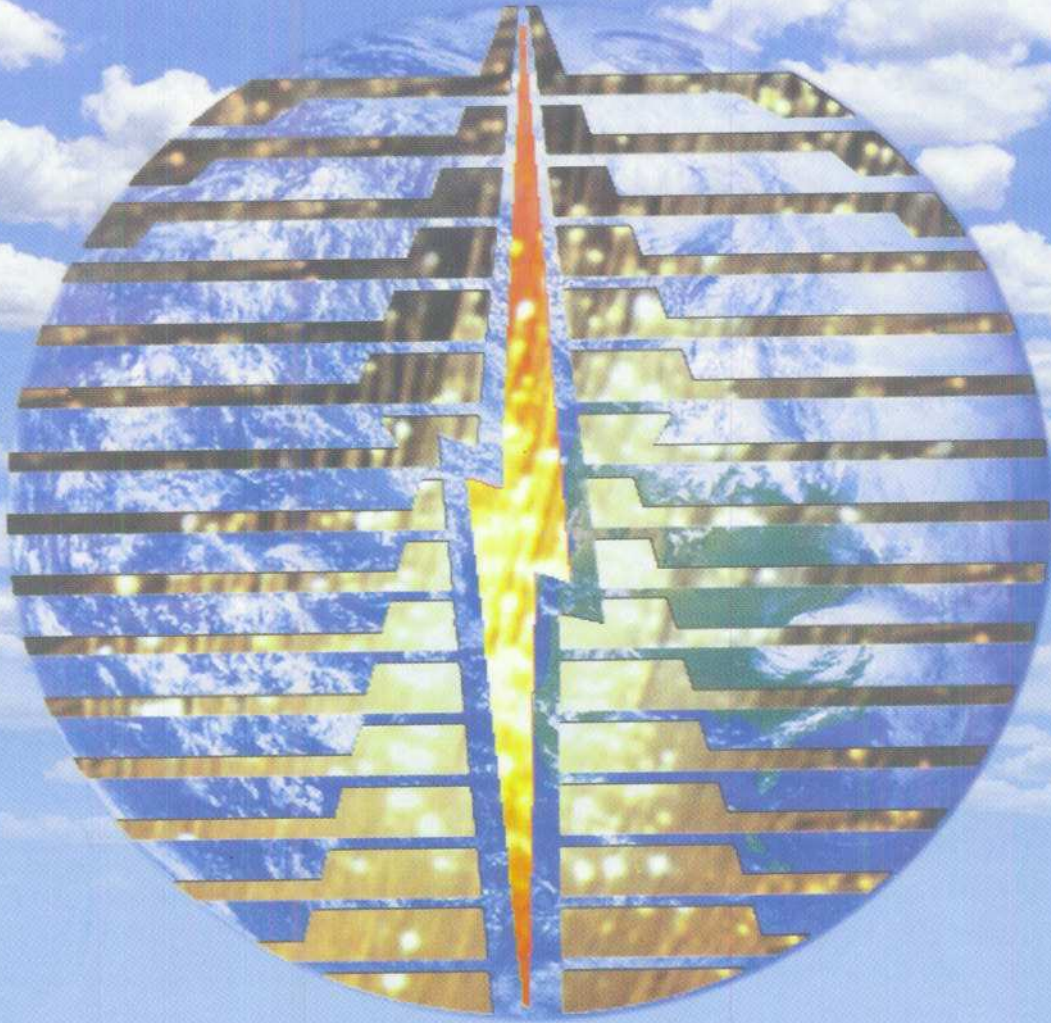
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# MISSION

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 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.
- Introduce National 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 stakeholders, peers and other related organisations.

# POWERGRID's QUEST FOR EXCELLENCE IN TELECOMMUNICATIONS

Diversifying into telecommunication  
to mobilise additional resources  
to establish much-needed National Grid.

- Following the recent trends of adding value to business with marginal investment in today's competitive world, POWERGRID is making planned diversification into the Telecommunication business.
- Diversification will help POWERGRID in optimising its infrastructure capacity and increasing returns which can further be deployed for expeditious implementation of NATIONAL GRID.
- POWERGRID will be establishing about 14,000 Ckms of fibre optic cable network at an estimated cost of over Rs. 1,100 crores which will connect over 56 major cities in India.
- It was a coveted feat for POWERGRID when the Hon'ble Prime Minister of India, Shri Atal Bihari Vajpayee, inaugurated the first optical fibre link between Delhi and Chandigarh on 2nd August, 2000, under Northern Region Unified Load Dispatch and Communication Project.
- Road map of POWERGRID Major Telecom Links
  - Delhi-Chandigarh-Shimla - October, 2000.
  - Delhi-Jaipur - November, 2000.
  - Salem-Bangalore-Gooty - December, 2000.
  - Hyderabad-Bangalore-Chennai - August, 2001.
  - Delhi-Lucknow - August, 2001.
  - Delhi-Mumbai - December, 2001.
  - Delhi-Hyderabad - December, 2001.

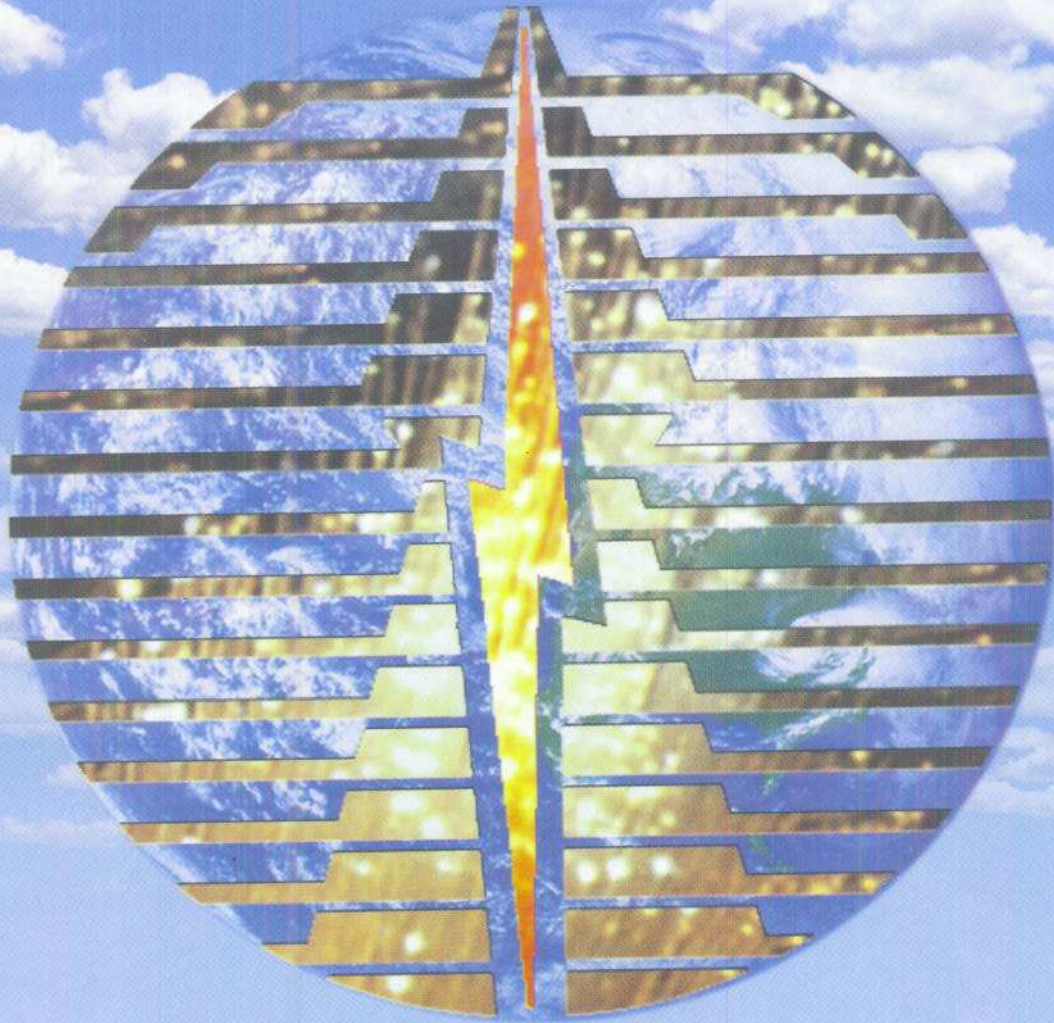
Harnessing infrastructure capability  
to augment economic prosperity of the nation.



Paving paths for telecommunication revolution.  
'HAVE' for 'HAVE NOTS' so far !

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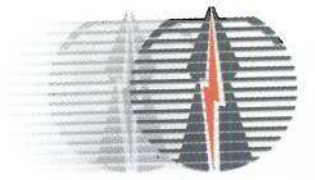
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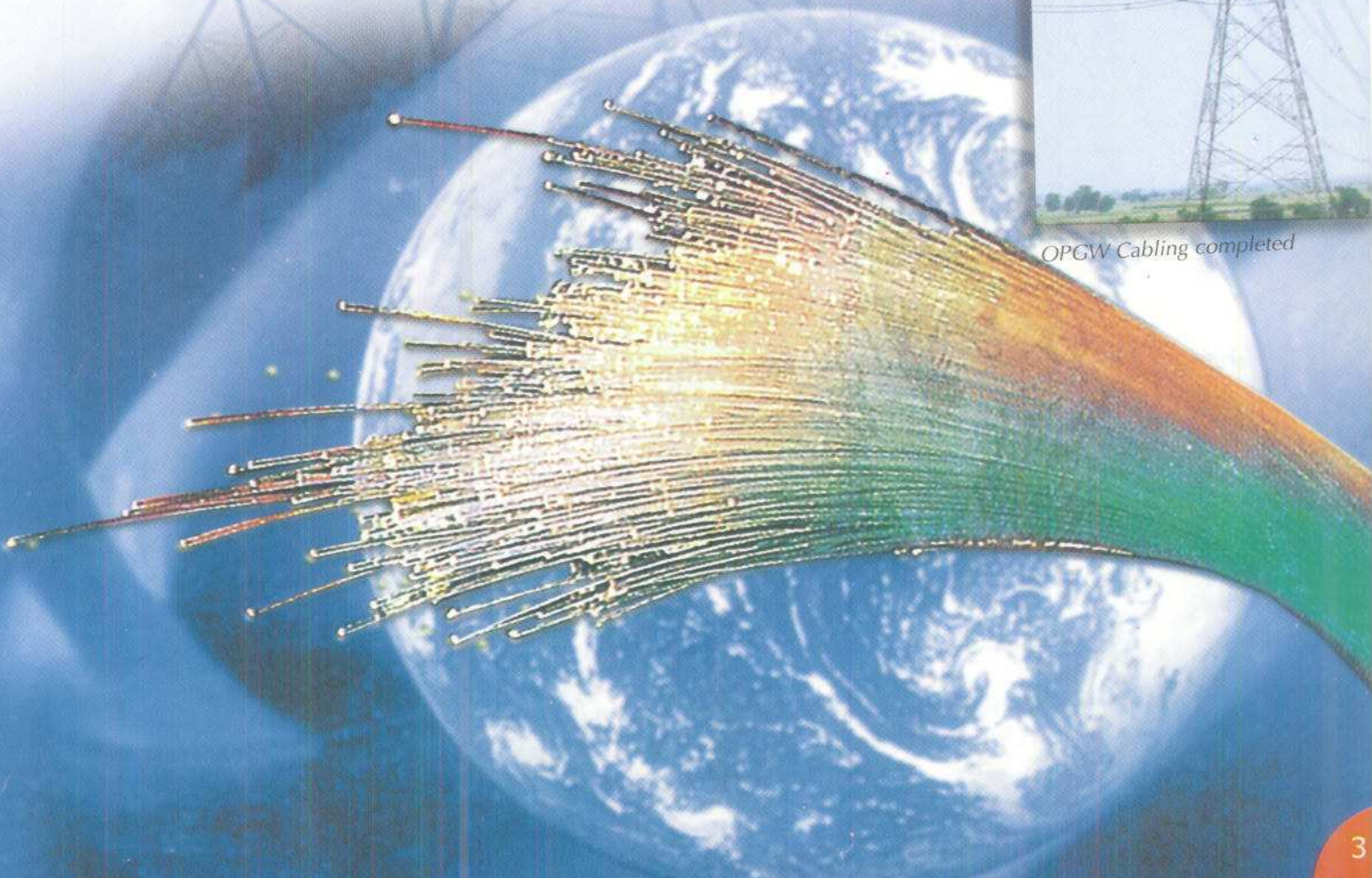
- POWERGRID initially will enter into Telecom business as Infrastructure Provider-II (leasing capacity) and add higher value services as and when regulation permits. Simultaneously, examining various issues associated with National Long Distance Operation to become NLDO with Joint Venture Partner of national/international repute.
- POWERGRID is looking for strategic partners to establish linkages with international optical fibre network to enhance its commercial value.
- For extensive connectivity with cities & towns and to reach unserved/rural areas, POWERGRID pursuing strategic alliance with various SEBs to utilize their T&D infrastructure.
- Undertaken an extensive marketing efforts for garnering higher market share for leasing capacity through its customer contact programme.



*OPGW Cabling in Live-Line*



*OPGW Cabling completed*



## BOARD OF DIRECTORS



**Shri R.P. Singh**  
Chairman and Managing Director  
Since 23.08.1997



**Shri R.K. Madan**  
Director (Projects)  
Since 20.08.1996



**Dr. V.K. Garg**  
Director (Finance)  
Since 17.09.1997



**Shri Bhanu Bhushan**  
Director (Operations)  
Since 13.11.1997



**Shri J. Vasudevan**  
Part-Time Director  
Since 28.12.99

### Bankers

- Indian Overseas Bank • Union Bank of India • Bank of Baroda • State Bank of Hyderabad
- State Bank of Travancore • State Bank of India • State Bank of Patiala
- State Bank of Bikaner & Jaipur • Central Bank of India • Corporation Bank • Canara Bank
- Oriental Bank of Commerce • Syndicate Bank • Dena Bank • State Bank of Mysore
- Punjab National Bank • Vijaya Bank • Indian Bank





**Shri R. Ramanujam**  
Part-time Director  
Since 23.02.2000



**Shri R.V. Shahi**  
Part-Time Director  
Since 27.07.1998



**Dr. Ramesh Gupta**  
Part-Time Director  
Since 27.07.1998



**Shri Binay Kumar**  
Director (Personnel)  
Since 07.07.1998



**Shri S.R. Shivrain**  
Part-Time Director  
from 11.01.95 to 23.01.2000



**Shri Anil Razdan**  
Part-Time Director  
From 11.8.98 to 28.12.99



**Shri R. Parthasarathy**  
Part-Time Director  
From 27.07.98 to 08.03.2000

**Company Secretary**  
Ms. Divya Tandon

**M/s D.P. Sen & Company,**  
Chartered Accountants  
8/2 Karan Shankar Roy Road,  
Calcutta-700 001

**M/s Venugopal & Chenoy,**  
Chartered Accountants  
4-1-889/16/2, Tilak Road,  
Hyderabad-500 000

**M/s Hingorani M. & Company**  
Chartered Accountants  
35, Netaji Subhash Marg, Daryaganj,  
New Delhi-110 002



## CHAIRMAN SPEAKS



**AT THE 11TH ANNUAL  
GENERAL MEETING  
HELD ON  
14TH AUGUST, 2000**

*Ladies and Gentlemen,*

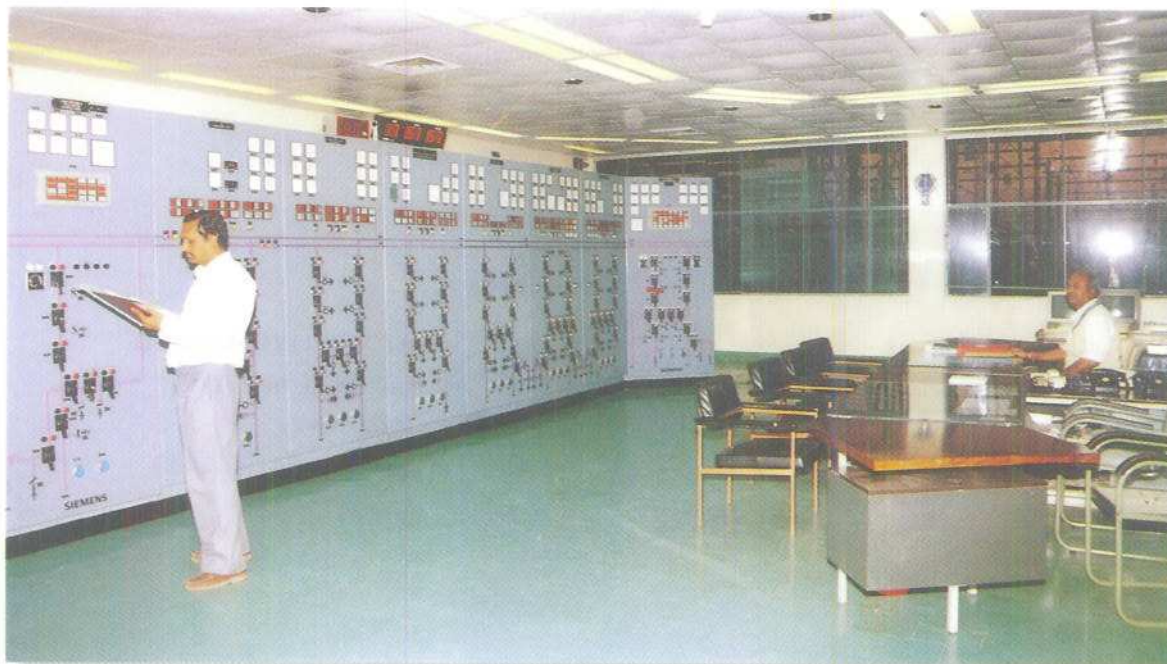
I extend warm welcome to all in the 11<sup>th</sup> Annual General Meeting of your Company. I am happy to share with you that your company has completed another successful year, and once again exhibited sterling performance in all facets. Your company received the prestigious '**Prime Minister's MOU Award**' second time in a row by ranking amongst top ten PSUs for the year 1998-99. I have great pleasure to announce that your company has displayed an impressive growth and achieved 335% and 255% of growth in turn-over and profit respectively since its commercial operation in 1992-93. POWERGRID has already been rated '**AAA**' by various credit rating agencies. The turnover and profit for the year 1999-2000 are Rs. 2124 crores and Rs. 601 crores respectively, registering a growth rate of 19.97% and 35.2% respectively over last year. The provisional results of first quarter of current year have also continued to show rising trends and promise a brighter future in coming years.

### **POWERGRID – AS ON TODAY**

As on today, your company is maintaining more than 39,000 ckt. Kms of transmission lines and 65 sub-stations all across the nation starting from snow-bound and mountainous areas of J&K to the Gangetic plains of Northern and Eastern India, extending to Deccan deserts and coastal areas in South and to the hilly and forest stretches of North-Eastern Region. Despite geographical diversities and variations in climatic/environmental factors, the availability of the

transmission system has been maintained over 98%. I am sure you all will agree with me that the secret of our performance in achieving high availability of system is our emphasis on Preventive Maintenance by adopting state-of-the-art tools and techniques. In order to facilitate this, modern testing laboratories have been established at Hyderabad in Southern Region, Durgapur in Eastern Region and Ballabgarh in Northern Region-I. The laboratory at Hyderabad is adding glory to our reputation wherein oil samples from various utilities within India and abroad are being tested on international quality standards. The laboratory has started earning revenue from its operations. The Durgapur and Ballabgarh laboratories have started functioning from the current year. The Frequency Response Analysis employed by POWERGRID for ascertaining the soundness of internal conditions of windings and other support structure of Transformers and Reactors at site is the unique facility in India.

It may be worthwhile to mention that specialised techniques such as Third Harmonic Resistive current measurements has been adopted by POWERGRID for the first time in India. This has saved major failures of 'Lightening Arresters'. Your company, has an Utility Collaboration Agreement with National Grid, U.K. in respect of procedure/technology to be adopted for maintenance of V-strings on a Double Circuit line with one circuit under live conditions. Substantial work has been done in this area and a



*View of Control Room at 400/220 KV Itarsi Sub-station*

prototype suitable to Indian conditions has been developed.

#### **TECHNOLOGICAL EXCELLENCE**

Right from its inception, POWERGRID has been giving special emphasis on adoption of new technologies available around globe for the applications to suit Indian conditions. POWERGRID is the first utility in the country to adopt thyristor based technology at EHV level. It is operating a number of HVDC systems including bipoles and back-to-back stations inter connecting various regions. Another  $\pm 500$  kV, 2000 MW HVDC bi-pole from Talcher to Kolar and 500 MW HVDC back-to-back station at Sasaram are under implementation. It is proposed to enhance the capacity of HVDC back-to-back stations at Sasaram and Gazuwaka by another 500 MW block. POWERGRID is operating the first Static Var Compensator of the country for controlling the voltage of the 400 kV bus-bar at Kanpur. POWERGRID is now contemplating to use the state-of-the-art Flexible AC Transmission System (FACTS) at 400 kV level on Kanpur-Ballabgarh line. This will be the first application of FACTS technology in the country at EHV level and shall be executed under the aegis of Ministry of Power and CEA in association with CPRI, Deptt. of Electronics and BHEL. Extensive studies have been conducted for techno-economic benefits of such a project in terms of enhanced system security, reliability etc.

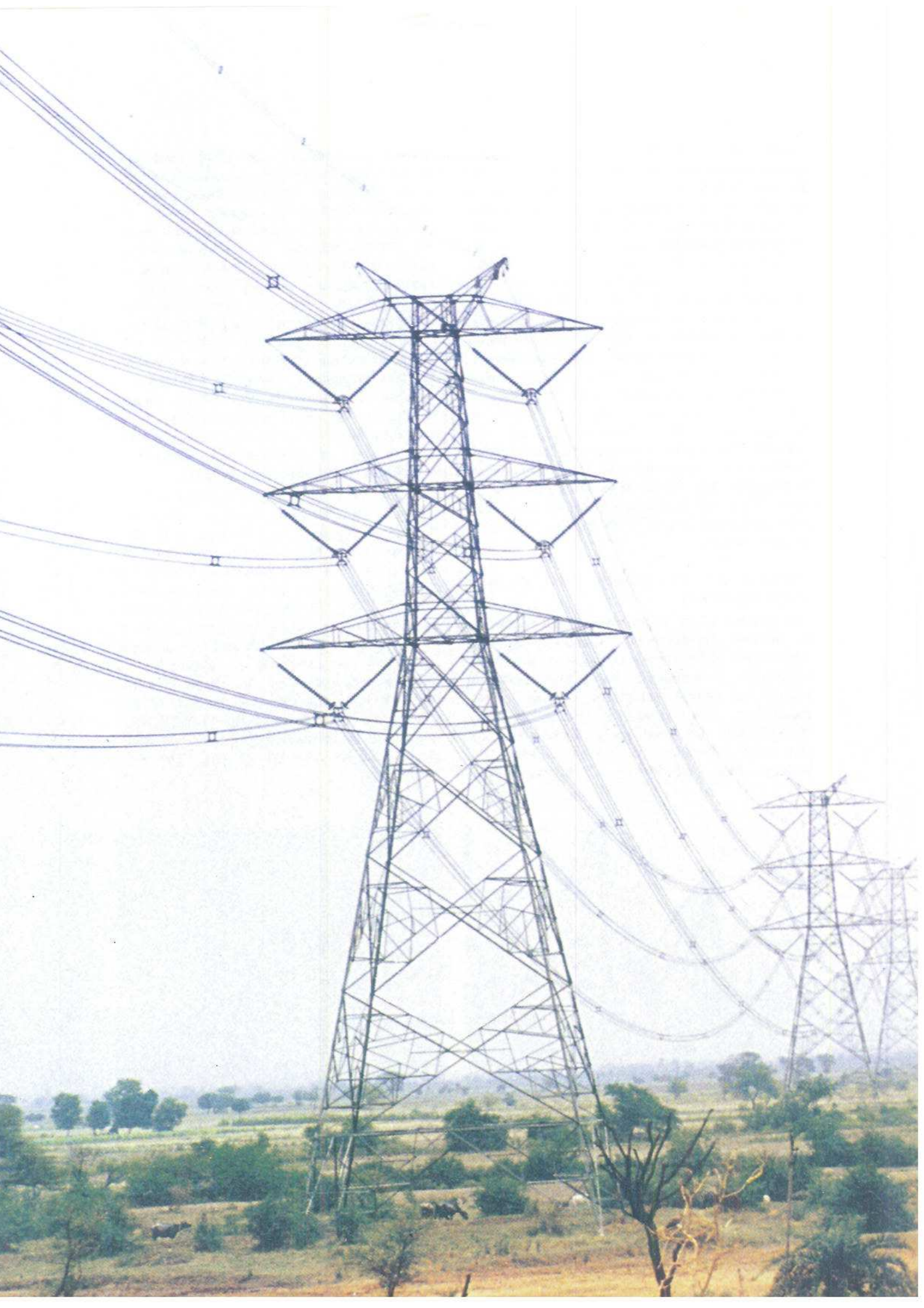
Your company has taken initiatives for tuning the parameters of Power System Stabilisers (PSS) used

in various generators which would enhance the stability of large inter-connected regional grids. This exercise has been undertaken for the first time in the country in association with M/s Power Technologies Inc., U.S.A., involving a very systematic approach of carrying out the detailed system studies supplemented by the actual field tests. Now, I am happy to inform you that your company has gained expertise and will take up tuning of PSS of generators on its own.

Keeping in view the power transmission requirements from large-sized power projects in the public as well as private sector, POWERGRID in association with CEA is evolving a perspective plan for the development of a 765 kV transmission network along with DC network and high capacity 400kV transmission lines. Sipat STPP of NTPC would have 765 kV transmission system. This would be the first system in the country to be operated at 765 kV level. POWERGRID has prepared itself to evolve system and equipment parameters which would pave the way for standardization and development of 765 kV equipment in the country. Services of International Consultants are also being sought in this endeavour.

#### **NEW ADDITIONS**

By way of proficient management of construction activities, POWERGRID completed 3,898 Ckms. of EHV lines and added 2,835 MVA of transformation capacity, during the year. I am glad to state that 1,670 Ckms. of transmission lines have been completed, surpassing the MOU



target of 1,448 Ckms. Your company has completed the prestigious and one of the first 800 kV lines in India from Kishenpur to Moga against all odds of hilly terrain and adverse weather including disturbed law & order situation. Public Investment Board has appreciated our efforts for completion of this line inspite of various problems and recognized the Contract management skills of POWERGRID. The other major milestones accomplished during the year include completion of 400 kV D/C Dulhasti-Kishenpur, Nalagarh-Hissar and, Abdullahpur-Bawana transmission lines along with transformers at Nalagarh and Abdullahpur, Unchahar Transmission System, Faridabad Transmission System, Augmentation of NER Transmission System, Kayamkulam Transmission System etc. A crucial 220 kV link between Budhipadar and Korba was commissioned in June, 1999 for enabling transfer of about 150 MW additional power from Eastern Region to Western Region.

#### **PROFICIENCY IN TOWER RESTORATION AFTER DISASTERS**

Competence of the company and its leadership in disaster management capabilities through deployment of Emergency Restoration System for restoration of damaged transmission systems caused by natural calamities is now fully established. I am proud to inform you that POWERGRID has once again demonstrated its zeal and dedication to Nation building by helping state authorities in restoring their

transmission network. Our efforts in restoration of the super-cyclone hit Orissa coast in the last week of October, 1999, paralysing many areas, were applauded by all agencies. As soon as the cyclone was forecast, several dedicated groups of the POWERGRID staff, not only from the Eastern Region but also from neighbouring Southern and Western Regions, swung into action and mobilised its resources for restoration of transmission system. An action plan, along with GRIDCO, was made for utilization of all available Emergency Restoration Systems (ERS) to face any eventuality. The entire restoration work covering 132 kV lines to Cuttack, Paradeep, Kendrapara etc. were restored within 15 days after disaster, which would have taken more than six months if conventional methods for restoration would have been adopted.

Similarly, POWERGRID has restored one of the towers of 400 kV lines from Uri Hydro Electric Project to Wagoora near Srinagar and 220 kV Double Circuit Kishenpur-Pampore line, which were blasted by the militants in January, 2000 disrupting the entire power evacuation facilities from Uri HEP. The lines were restored in shortest possible time by using Emergency Restoration System under heavy security and adverse weather conditions including heavy snow-fall and freezing temperature of the month of January, thus providing much relief to the State of Jammu & Kashmir. The efforts of the POWERGRID in restoration of power supply were lauded by Hon'ble Chief Minister of J&K, Dr. Farooq Abdullah.



*View of Blasted tower at Loc. No. 268 of 400 kV D/C Uri-Wagoora line on 15.1.2000.*



*Restored through ERS on 25.1.2000.*



*ERS being installed to restore power supply in Orissa*

### **PERSPECTIVE PLAN**

POWERGRID has an ambitious plan to create a National Grid in three phases. The first phase of the National Grid having a capacity of 4800 MW exchange of power on All India Basis is complete. The second phase of the National Grid with power exchange capacity of 14,000 MW would be completed by 2005. Third and the final phase to exchange power to the extent of 30,000 MW through the National Grid, would be completed by 2012. The investment required to achieve this target, is of the order of Rs. 90,000 crores. POWERGRID is confident to harness these resources through internal resource generation as well as through private participation in creating the National Grid.

### **TOWARDS ENCOURAGING PRIVATE SECTOR PARTICIPATION IN TRANSMISSION**

Encouraging Private Sector Participation in Transmission is another area where your company has stellar role to play in coming years. It is estimated that about Rs. 88,000 crores are required for creation of transmission facilities at National level for meeting Inter-State power transfer requirements. Your company has planned to undertake a direct investment of about Rs. 46,000 crores, which includes the transmission system associated with Central PSUs and inter/intra-regional grid-strengthening projects including setting up of state-of-the-art Load Dispatch Centres at Regional and National levels. The remaining investment of Rs. 42,000 Crores related to Mega IPPs and Transmission Super Highways is proposed to be taken up through private sector participation either through formation of JVs or through Independent Power Transmission Companies (IPTCs).

In this regard, the Government of India had

already taken landmark policy initiatives by making series of amendments to the Electricity Act, 1910 and Electricity (Supply) Act, 1948. These amendments are directed towards facilitating the private sector participation in the field of power transmission under the overall supervision and control of POWERGRID as Central Transmission Utility. The Ministry of Power, has now issued the policy guidelines for facilitating private sector participation in January, 2000. I am happy to inform you that your company has already identified various projects to be thrown open for private sector participation in line with Government guidelines.

The nature of risk involved in construction, operation and maintenance of transmission system is much more than that of the Generation project, because of the vast area over which the business is spread. The private investors would feel more comfortable if a partner like POWERGRID, having sufficient organisational and technical skills, is also involved as equity holder. Keeping this in view, the line portion (gantry to gantry) of the Tala Transmission System at an estimated cost of Rs. 1200 crores shall be implemented by a Joint Venture Company on Build, Own, Operate and Transfer (BOOT) basis, in which POWERGRID would hold 26% equity. The process for formation of the JV Company has been initiated and necessary documents for selection of the joint venture partner holding 74% equity, have been prepared. 'Request for Selection' has already been issued.

Your company has also finalised a transmission line portion to be taken up by an Independent Power Transmission Company (IPTC). Asian Development Bank has consented to provide a



*View of two 400 kV lines - Durgapur-Jamshedpur and Maithon-Jamshedpur lines*

grant of US \$ 600,000 for Technical Assistance to help POWERGRID in finalisation of the techno-commercial documents. The process for the selection of Consultant has already started and the Consultant would commence work in a couple of months.

### CONCERN FOR ENVIRONMENT

Your company has always been responsive to Environmental and Social issues and is the only organisation in the power sector to evolve Environmental and Social Policy and Procedures (ESPP) for its projects. The ESPP, which is based on the three key principles of Avoidance, Minimisation and Mitigation, is a unique policy document that has been prepared in association with Govt. agencies at Centre and the State level with thorough interactions with public, Non Governmental Organisations, project affected persons and International Financial Institutions like ADB & WB. Your company is undertaking the socio-economic survey for all the projects being executed by the company including the Sasaram HVDC project and Talcher-II Transmission Project. Rehabilitation Action Plans are being prepared in line with ESPP, affirming the commitment to the policies in letter and spirit. The concern of your company towards environment can be gauged from the fact that the Trichy Sub-station in Southern Region has been adjudged the "Clean and Green Central Govt. Office" by Trichirapalli District Authorities.

In today's world, where environment and its consequences are so actively debated, I think that there is a need for similar philosophy to be adopted by all power utilities in the country as a first step towards sustainable development. In this direction, your company is providing

assistance to other State Electricity Boards for developing their environmental and social policy documents.

### CONSULTANCY ASSIGNMENT

Your company has embarked upon the consultancy assignments right from the beginning to help the State Utilities to adopt latest technological development and at the same time to gain from the rich experience apart from earning revenue. I am extremely happy to share with you that the largest consultancy assignment taken by your company, "Transmission System associated with Bakreshwar Project", has been commissioned and POWERGRID has earned more than Rs. 14 crores as consultancy fee. The Project Authority, the West Bengal Power Development Corporation had time and again appreciated the efforts made by your company in its timely completion and thus contributing towards the development of the area. Recently, POWERGRID has been entrusted with the task of turnkey execution of 220 kV and 132 kV transmission lines and substations in the State of Arunachal Pradesh. This would be the second largest consultancy assignment for your company and yield consultancy fee of around Rs. 10 crores. In the coming year, your company is likely to get assignments for turnkey execution of transmission projects from NEEPCO and Union Territory of Pondicherry.

### CHALLENGES AHEAD

Your Company has indeed achieved many milestones and marching ahead with the help of Ministry of Power, other administrative departments/ministries and dedicated workforce. However, there are certain challenges/difficulties



Night view of HVDC Back to Back station at Vizag



requiring concerted efforts from all of us. The major issues are enumerated below:

#### EXPOSURE TO REGULATORY ENVIRONMENT

The authority for issuance of tariff notification had been vested with CERC w.e.f. May, 1999, exposing POWERGRID to entirely different regulatory environment. The process of tariff notification adopted by the CERC is quite new and time consuming compared to Government notified tariff system followed earlier. This is leading to delays in tariff notifications. CERC is not permitting POWERGRID to raise bills based on completion cost of the project, unless it is approved by the CCEA. The payment of the provisional bills is restricted to 80-90% of the actual cost incurred on case to case basis. This is leading to low recoveries and accumulation of huge arrears once tariff is notified with retroactive effect. POWERGRID is making all out efforts to gear up internally by streamlining the procedures for collection and analysis of cost data and filing the petition as early as possible after commercial declaration of the line. This will bridge the gap between the commercial declaration of the line and final tariff notification. At the same time POWERGRID is also persuading CERC to simplify the procedures.

#### OUTSTANDING DUES

During this financial year, your company collected revenue of Rs. 1771 crores against a turnover of Rs. 2123.87 crores. The total outstanding due from SEBs, stands at Rs. 1236.39 crores. Though the average monthly billing has increased from a level of about Rs. 130 crores per month to around Rs. 180 crores per month, POWERGRID has been able to contain the outstanding within reasonable limits. The outstanding amount has been reduced to around 3.6 months at present over last two months billing as per World Bank criteria, compared to 4.3 months prevailing during recent months.

To address the problem of outstanding dues of various Central Public Sector Undertakings under Ministry of Power and Ministry of Coal, Government of India has approved a scheme for Securitisation of Dues from SEBs. As per the scheme, defaulting SEBs will issue Tax free Bonds to the utilities covering the principal amount due up to December 31, 1999, which would be backed by State Government guarantee. Further, comfort would be provided by Central Government, by use of 15% of CPA allocation of the state, in case State Government is unable to meet the guarantee obligations. It is envisaged that these bonds can be traded in the secondary



*View of Emergency Restroration System during sunset*

market for an early recovery.

#### REVENUE LOSS FROM TRANSMISSION PROJECTS IN NORTH-EASTERN REGION

POWERGRID has already made investment of over Rs. 1,400 crores in transmission system in this region and over Rs. 200 crores worth of projects are in pipeline. However, POWERGRID is unable to recover tariffs from these projects due to poor economic health of North-Eastern States. The transmission tariff has been pegged at 35 paise as against 90-95 paise per unit based on assets to be commissioned progressively till the year 2000. Union Minister of Power has also recognized the necessity to compensate POWERGRID to bridge its revenue deficit. POWERGRID in consultation with Ministry of Power is making proposal for consideration of Union Cabinet so as to enable POWERGRID to discharge its debt servicing liabilities.

#### **ENHANCED POWERS AS A MINI-RATNA PSU**

POWERGRID has been recognised as a Mini-Ratna (Category-I) PSU and was delegated enhanced powers for investment in new projects up to Rs. 300 crores. However, it has been stipulated that the enhanced delegation can be used for the projects which are not funded

through the Government guaranteed borrowings, as the same would be a "contingent liability" on the government. Before grant of Mini-Ratna status, POWERGRID Board was empowered for investment sanction of projects up to Rs. 100 crores, even if funding for these projects involved Government guaranteed borrowings. Hence, the grant of Mini-Ratna has in effect curtailed the powers of the Board instead of enhancing the same. I would like to reiterate that there is an urgent need to re-examine the issue and to waive off the stipulation for considering the Government guarantee as a "contingent liability" for PSUs.

### DIVERSIFICATION IN TELECOMMUNICATION

In today's competitive world, various utilities and



*Series capacitors at Kishenpur S/S on 220 kV D/C Kishenpur-Pampore line.*

companies across the globe are in search of ways and means to add value to their business with marginal investment. This aspect assumes greater significance, particularly in the capital intensive infrastructural sectors. In this context, the two key infrastructural areas namely power and telecommunications, today play a vital role in a large developing country like India. The synergic convergence between these two sectors promises unique opportunities as have already been established world-wide in other developed countries. For power utilities world-wide, it has been possible to exploit excellent business opportunities by providing telecommunication services capitalizing upon the power utilities' inherent infrastructural advantages. In line with these, your company is also venturing into telecom arena to create significant shareholders' value through leveraging its huge transmission network throughout the country.

To maximise the returns and with a view to deploy it for expeditious implementation of National Grid, your company has planned to embark upon telecommunication business,

which is being deregulated to promote competition, quality of service and to reduce tariff to the consumers. For this purpose, POWERGRID has developed a three pronged strategy with the help of renowned international consultants viz. IVO Power Engineering, Finland along with Pricewaterhouse Coopers, UK and Simons and Simons, UK,. Under Phase-I, it proposes to utilize the spare/excess capacity of the network available in the Unified Load Despatch and Communication Schemes which will link major cities in Northern and Southern Regions. By the end of Phase-II, it is envisaged that about 14,000 Kms. of Optical Fibre cables would be installed, connecting 56 cities including the State capitals by the year 2002. The investment in this regard will be around Rs.1000 crores for which Feasibility Report has already been submitted to the Govt. of India. In the final phase, your company proposes to enter into telecom business as a National Long Distance Operator by forming a Joint Venture with telecom companies of national and international repute. This will necessitate laying of 52,000 Kms. of optical fibre including setting up of number of tele-stations around the country at a cost of about Rs.5,000 crores. To further enhance its commercial value, it is being envisaged to establish linkages with international optical fibre network and in this direction, is looking for a strategic partner to have a strategically located landing station in the country.

I am sure, you will appreciate our venture to diversify into telecom, synergic with power transmission to mobilise additional resources. These additional resources will be ploughed back to establish the much needed National Grid with the ultimate aim to provide cheaper power to the common man living in the remotest part of the country. An investment gap in the formative stage of the telecom diversification shall be mitigated



*A view of 400 kV Durgapur sub-station switchyard*



*Aerial view of 400 kV D/C Chamera-Moga line.*

through private investment in transmission system. POWERGRID is conscious of its responsibilities and in no way, shall compromise on the responsibilities bestowed on it.

#### **CONCLUSION**

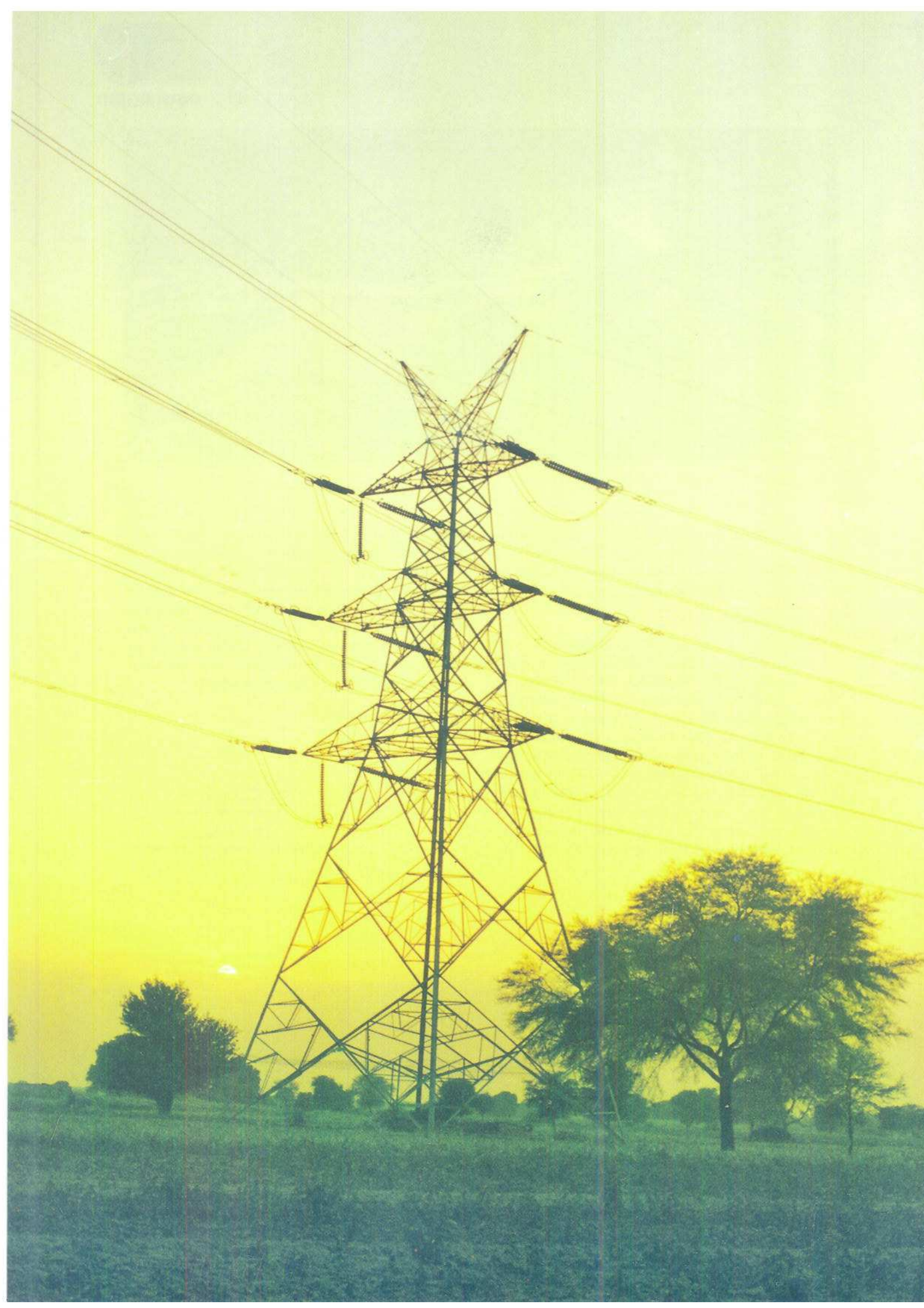
At the dawn of the millennium, I would like to submit that POWERGRID will continue to play the critical role in improving the reliability of power across the nation and meet the customers' perception of quality power to enhance quality of life. It commits itself to play a pivotal role in economic development of the country and urge that we should continue the team work to enable us to meet the challenges and responsibilities entrusted to the organisation. I sincerely thank all my Board Members, who have helped the organisation through their professional skills and

guidance to undertake many vital decisions in the best interest of the organisation. I also commend the efforts put in by one and all for the impeccable performance during the year and for enabling the organisation to win many laurels to the nation. In future, we have to cross many more milestones and achieve bigger targets, for which I hope, we all will work with the same enthusiasm, dedication and motivation.

Date : 14 August, 2000.  
Place : New Delhi.



**(R.P. SINGH)**  
Chairman & Managing Director



## DIRECTORS' REPORT

FOR THE 11TH ANNUAL GENERAL MEETING HELD ON 14.8.2000

To,  
The Members,  
*Ladies and Gentlemen,*

At the dawn of the new Millennium, it gives me pleasure to present on behalf of the Board of Directors, the 11th Annual Report of Power Grid Corporation of India Limited (POWERGRID), together with the Audited Statements of Accounts for the financial year 1999-2000. During the year, Government of India has provided a fillip to the private sector participation in transmission sector by issuance of the guidelines for ensuring uniform practices at central and state levels. Your company has identified the transmission lines to be taken up under private sector and 'Request for Selection' of Joint Venture Partner has been issued.

### PERFORMANCE DURING THE YEAR 1999-2000

#### MOU PERFORMANCE

Based on the results for the Financial Year 1999-2000, POWERGRID achieved 'Excellent Performance' rating as per its MOU with Ministry of Power for the 7th successive year. It received the Prime Minister's MOU award for being amongst top ten PSUs for the second time in succession based on performance for year 1998-99. It is the only PSU in power sector to achieve this distinction.

#### OPERATIONAL

As on March 31, 2000, POWERGRID is operating a total of 39,017 ckt. kms. transmission lines consisting of 275 ckt. kms. of 800 kV, 1,630 ckt. kms. of HVDC system, 28,710 ckt. kms. of 400 kV, 6,678 ckt. kms. of 220 kV and 1,724 ckt. kms. of 132 kV lines alongwith 65 Sub-stations with 31,655 MVA transformation capacity. Average availability of transmission systems during the year was above 98%, which is comparable to the best international standards. Transmission network owned & operated by POWERGRID is transmitting  $\frac{1}{3}$ <sup>rd</sup> of total power generated in the country.

During the year, POWERGRID established two 'Testing Laboratories' one at Ballabgarh in Haryana and other at Durgapur in West Bengal. For the first time in India, the equipments for carrying out Frequency Response Analysis have been procured by POWERGRID. A paper on Frequency Response Analysis had also been presented in the prestigious Double Client Conference held at BOSTON, USA in March, 2000 which was highly appreciated by the participants. The efforts in the areas of diagnostics have been applauded globally and our interaction with foreign experts has revealed our capabilities in O&M field.

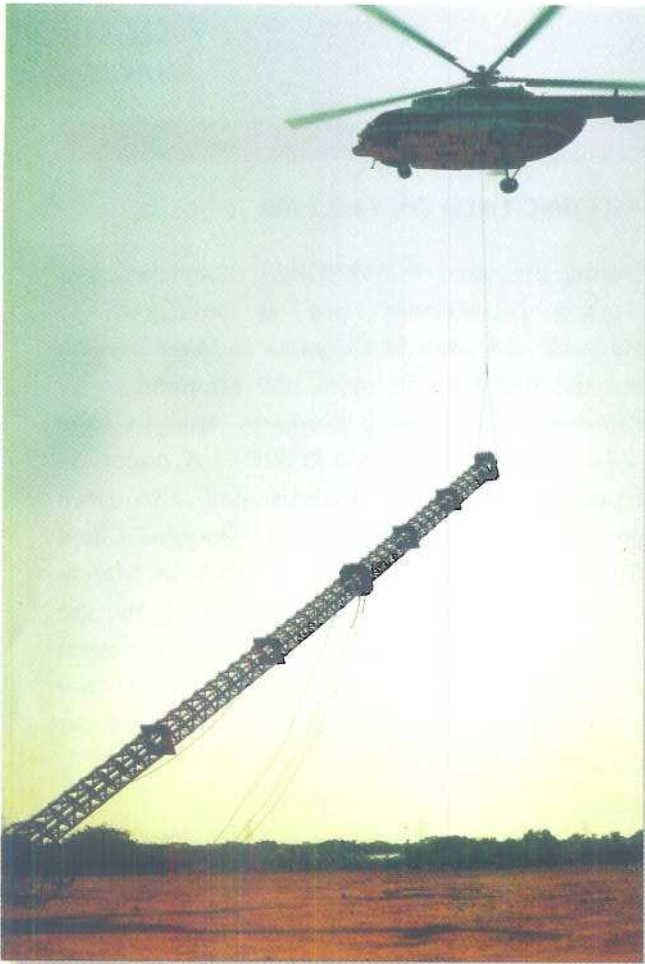
Central Insulating Oil Testing Lab (CIOTL), Hyderabad, has added another feather to its crown by starting to earn revenue, though moderate, during the year by testing oil samples of other utilities, besides testing of samples from different sites of POWERGRID.

POWERGRID organised 3 (three) workshops for engineers from various SEBs, power utilities, power equipment manufacturers and representatives of SAARC countries for sharing expertise in O&M and Design areas. These workshops were organised at no profit no loss basis for sharing technical knowledge acquired by POWERGRID.

#### CONSTRUCTION

After Govt. of India notification, recognising POWERGRID as '**Central Transmission Utility**' (CTU), it has become the sole agency responsible to plan and establish the requisite transmission capacity in the central sector to match the generation capacity addition and encourage inter-state/inter-regional exchange of power to mitigate the surplus/deficit of energy among various regions.

Looking at the mammoth responsibility ushered on POWERGRID, the key result area for the company had been timely implementation of the projects. Many of the projects are completed ahead of schedule speaking for itself the effective



*Erection of Emergency Restoration System (ERS) with Helicopter support*

Integrated Project Management Concept being followed by the Corporation. This involves rigorous monitoring of projects under implementation at various levels in the region as well as at the corporate office. By way of proficient management of the construction activities, POWERGRID completed stringing of 1670 ckt. kms. of transmission lines surpassing the MOU target of 1448 ckt. kms.

During the year, POWERGRID has completed 3898 ckt. kms. of transmission lines, including 1st circuit of Kishenpur-Moga, which is India's one of the first 800 kV lines. Your company has established five new sub-stations and completed several bay extension works in existing sub-stations, thus adding 2835 MVA of transformation capacity. The other major accomplishments include completion of 400 kV D/C Dulhasti-Kishenpur Transmission lines, 400 kV D/C Nalagarh-Hissar and 400 kV D/C Abdullapur-Bawana Transmission lines alongwith transformers at Nalagarh and Abdullapur, Unchahar Transmission System, Faridabad

Transmission System, Augmentation of NER Transmission System, Kayamkulam Transmission System etc. Another critical inter-regional link between Budhipadar & Korba at 220kV level, was commissioned in June, 1999 which enabled transfer of about 150 MW additional power from power surplus Eastern region to Western region which can be further transferred to Southern region.

Further, about 5572 ckt. kms. of transmission lines with voltage levels varying from 132 kV to 800 kV and 11 substations, including Converter and Inverter stations at Talcher and Kolar respectively, along with associated bays, are under construction which are expected to be completed in the coming years. Some of the major projects under implementation are Sasaram HVDC back-to-back system interconnecting Northern and Eastern region, Talcher-Kolar HVDC bipolar inter-regional link connecting Eastern and Southern region, second circuit of 800 kV Kishenpur-Moga transmission line, Tehri Transmission Project and balance line of Nathpa Jhakri Transmission System.

#### **FINANCIAL**

Financial performance of the organisation has also been impressive. During the year organisation has earned a Net Profit of Rs. 600.88 crores after tax on a Turnover of Rs. 2123.87 crores. Compared to the previous year there is an increase of about 35.2% in the Net Profit, against 19.97% increase in the Turnover. Needless to mention that, this is an indication of the company's endeavour towards taming its expenses, which increased only by 12.37% compared to the last year. POWERGRID has made a provision of Rs. 79.76 crores towards income tax. At the end of this financial year the capital employed by the organisation stands at Rs. 9844.70 crores, which has grown by 29.73% from the last year's figure of Rs.7588.49 crores. It is also worth mentioning that the Return on Net Worth for the company has reached a double-digit figure from 8.97 % in 1998-99 to 10.83 % in 1999-2000, creating value for the shareholder.

Paid up capital of the company including Share Capital Deposit as on 31 st March, 2000 stands at





*In-house repair work of 132/33 KV, 10 MVA Auto Transformer at Nirjuli Sub-station*

Rs. 3049.54 crores, as against Rs. 3,041.54 crores as on 31 st March, 1999.

### **Dividend**

POWERGRID has declared and paid an interim dividend of Rs. 20 crores to the Government. This interim dividend of Rs. 20 crores is recommended as final dividend for the financial year 1999-2000 for confirmation of the shareholders in the general meeting. Though, the Earning Per Share (EPS) of the company had been above 19%, the Directors recommended the above lump sum interim dividend of Rs. 20 crores for the year ended 31st March, 2000 with an intention to plough back the internal accruals towards capital investment, which is a national need. Further, as per the Income Tax Act, 1961, a provision of Rs. 2.20 crores for tax on interim dividend has also been made.

### **Transfer of Profit to Reserves**

An amount of Rs. 475 crores has been transferred to General Reserve and Rs. 121.15 crores to Bonds Redemption Reserve.

### **Capital Investment and Fund Mobilisation**

Though the economic sanctions on the country continued, hampering inflow of multilateral funding, POWERGRID could mobilise the requisite resources to carry on its investment programme to an extent of Rs. 1,374 crores during last financial year. During the year, we could tie up long term foreign currency loan equivalent to Rs. 800 crores from KfW of

Germany with very favourable terms and conditions. During the period, some of the costlier 'Yen Loans' were refinanced through cheaper loans to reduce the debt service liability of the company. In addition to tapping the international market, POWERGRID raised about Rs. 150 crores from the domestic market. Capital investment of about Rs. 300 crores were met from the internal accrual of the company. Last year, considerable progress was made towards negotiation of a loan of US \$ 250 millions from ADB. Moreover, all road blocks were cleared to venture into the ECB market with partial credit guarantee from ADB for another US\$120 million. This instrument can be treated as **first of its kind** in the country.

### **COMMERCIAL**

During the financial year 1999-2000, POWERGRID could collect Rs. 1,771 crores registering an increase of 22% over the previous year. Value of monthly revolving Letter of Credit (LC) for payment of monthly charges has been increased from Rs. 92.15 crores as on 31.3.99 to Rs 110.39 crores as on 31.3.2000. However, many of the SEBs are passing through a phase of financial constraints and restructuring process, they could not clear the arrears which have mounted up to Rs. 1236.39 crores.

After the formation of Central Electricity Regulatory Commission (CERC), the authority/responsibility for issuance of tariff notifications has been vested with CERC w.e.f May, 1999. Tariff petitions in respect of 13 cases submitted to CERC have been approved for payment of provisional tariff amounting to Rs. 148 crores.



*View of Kayamkulam Gas Insulated Sub-station*





The mechanism of realisation of dues was further strengthened with the signing of the Bulk Power Transmission Agreement (BPTA) separately for each new project and also with the inclusion of provision for opening of ESCROW Account backed up by the State Government Guarantee as part of the Agreement. Most of the Southern Region beneficiaries have signed the BPTAs for Talcher-II Transmission System strengthening in Southern Region and Ramagundam-III Transmission Systems, with the inclusion of these clauses in the respective BPTAs.

#### Availability Based Tariff - POWERGRID's Role

Significant progress has been achieved in implementation of Availability Based Tariff (ABT) for rationalisation of bulk power tariff structure on national basis. CERC has notified the tariff structure of Central Sector generation after detailed public hearings and representations. CERC has also notified phased implementation of the revised tariff in various regions, starting from Southern region. POWERGRID has committed itself towards the implementation of ABT and has outlined a detailed programme of installation of Special Energy Meters in Northern and Western regions. Further, POWERGRID has made a foolproof mechanism to workout Energy Accounting System using the data from various Special Energy Meters installed in the Southern, Eastern and North-Eastern Regions.

#### BUSINESS DEVELOPMENT

POWERGRID's Business Development efforts made remarkable progress in obtaining many consultancy assignments, which include System Studies to turnkey execution of transmission projects. For the first time, POWERGRID has been assigned to carry out type tests of transmission tower by M/s Merz & McLellan, International Consultants to GRIDCO.

The highlight of the year has been signing of an agreement for the turnkey execution of 220 kV and 132 kV transmission lines and sub-stations in the state of Arunachal Pradesh. This assignment when completed, shall bring about Rs. 10 crores as consultancy fee to POWERGRID, making it as the second largest consultancy assignment for the

company. POWERGRID is now providing the consultancy services to various utilities/agencies from Himachal Pradesh, to Pondicherry and from Goa to Arunachal Pradesh thus covering almost the entire length and breadth of the country.

Yet another achievement has been the completion of the transmission systems associated with Bakreshwar Project. This was the largest assignment of the Corporation and has earned more than Rs. 14 crores to POWERGRID as consultancy fee. We can derive satisfaction from the fact, that the West Bengal Power Development Corporation has appreciated the efforts made by POWERGRID for its timely completion and thus contributing towards the development of the area.

#### ON GOING AND NEW PROJECTS

In view of entry of various large Independent Power Producers/ Mega Power Projects in the Power Sector, and its commitment for development of National Power Grid, POWERGRID is contemplating possible



*Stringing of conductor in Nalagarh-Hissar 400 kV D/C line in progress*

investments towards implementation of transmission projects which can be broadly classified as: i) Generation Linked Projects, ii) Grid Strengthening Projects, iii) Inter-Regional Links and iv) Unified Load Despatch & Communication Schemes. In addition, POWERGRID is committed for assisting various SEBs in their transmission and distribution network.

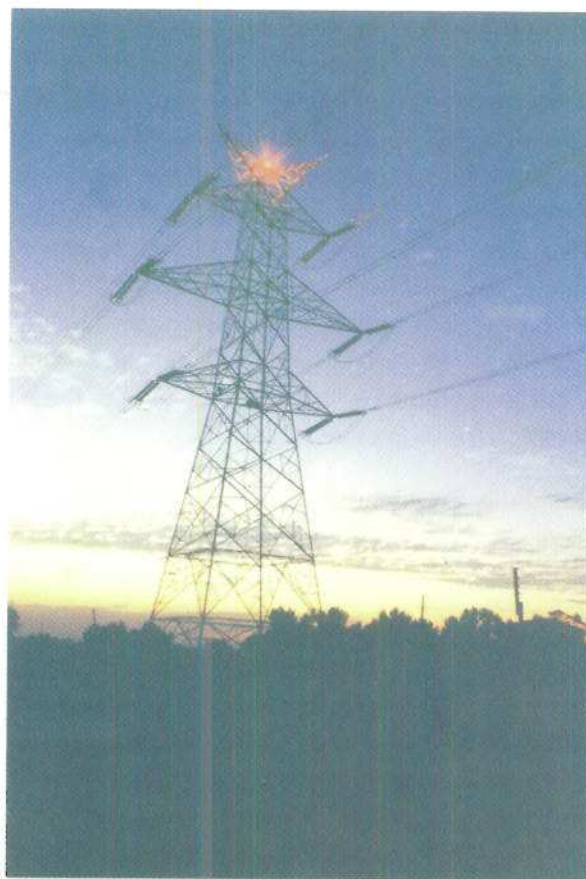
### Generation Linked Projects

Transmission Systems associated with Tehri HEP, Nathpa-Jhakri HEP and Talcher STPP are the only major generation linked projects under construction. The last transmission line of Nathpa-Jhakri transmission scheme would be completed by December 2000, much ahead of generation project. The Tehri transmission project is progressing as per schedule and shall match with the generation project. East-South interconnection project has been taken up for construction recently, primarily for evacuation of power from Talcher STPP of NTPC, the project is progressing well and shall match the generation project despite of delayed start for want of Govt. approval. Amongst the new projects, the transmission systems for extension stages of Anta, Auraiya, Gandhar and Kawas GBPP could not be taken up because of delays in generation schemes. Other new generation linked schemes are transmission system for Tala HEP, Rihand-II, Seepat and Ramagundam-III.

### Grid Strengthening Projects

Due to weak sub-transmission and distribution system, load growth is severely affected in some states, leading to sub-optimal utilisation of available generation and EHV grid. POWERGRID conducted intensive system studies to diagnose the deficiencies in the transmission system, which have been hindering the efficient operation of the regional grids. In pursuant to above, the following such schemes were commissioned during the year :

- In the North - Eastern Region, POWERGRID commissioned 8 nos. of 132 kV transmission lines totalling 491 ckms and 2 new substations. This shall benefit Southern Assam,



*Thermo-Vision Scanning in progress.*

Mizoram and Tripura by reducing the overloading of transmission system during peak hours.

- Series compensation on 220 kV D/C Pampore-Kishenpur transmission line (of PDD, J&K) was successfully completed to enhance the power transfer capability of the line by 150 MW.

POWERGRID also identified several new system improvement schemes across the country, which are under different stages of construction. In Eastern Region, grid strengthening schemes include 400 kV D/C Talcher-Meramundli, 400 kV S/C Meramundli-Jeypore, Ganga river crossing of 220 kV D/C Biharsharif-Begusarai at Hathidah, LILO of 132 kV S/C Dalkhola-Purnea at Purnea, creation of 400/220 kV substations at Siliguri, Purnea, Kalabari, and 315 MVA ICTs at Malda and Jeypore. In Southern Region, System Strengthening Scheme comprising of 220 kV Neyveli-Bahoor is under construction and 400 kV D/C Vijayawada-Nellore-Chennai is also being

taken up. It would enable transfer of power, imported from neighbouring Eastern & Western Regions to the different beneficiaries in reliable manner.



View of HVDC Rihand Project

### Towards National Grid

POWERGRID has evolved a Perspective Transmission Plan for short, medium and long term for strengthening the regional grids with ultimate objective of establishment of National Grid. The major considerations while formulating perspective plans are :

- Creation of transmission highways from potential resources to major load centres for conservation of Right-of-Way and to achieve economy in long-term.
- Development of a strong National Grid, flexible enough to accommodate uncertainties in Generation Plan to some extent.

During the year, POWERGRID has completed 400 kV D/C Bongaigaon-Malda transmission line inter-connecting Eastern and North-Eastern Region, adding 800 MW to the inter-regional power transfer capacity. With this, the total inter regional capacity has increased from 3550 MW to 4350 MW. HVDC back to back link at Sasaram, an important inter regional link between Eastern and Northern Region is under construction. After completion of this link by the end of 9th Five-Year Plan, the total inter regional capacity would increase to 4,850 MW.

The major link to complete the framework of National Grid, 500 MW HVDC back-to-back link at Sasaram between Northern and Eastern Regions, is progressing well and AC portion would be completed by October, 2001. Keeping in view the surplus power in Eastern Region, POWERGRID is proposing to double the

capacities of Sasaram and Gajuwaka HVDC back-to-back links by establishment of another 500 MW block at both the places. Raipur-Rourkela 400 kV D/C AC link between Eastern and Western Region would also be taken up for construction shortly. The 2000 MW East-South Interconnector-II HVDC Bipole link taken up for Talcher-II at an estimated cost of Rs. 3865 crores, would also be instrumental in evacuation of surplus power from Eastern Region.

### Additional Inter-Regional Links by 2004

A number of mega sized generating projects are being considered in the North-Eastern, Eastern and Western Regions for development in next 6-7 years. Some of the major projects are :

- Mega sized Thermal Projects in Orissa, such as Hirma.
- Hydro projects in North-East Region, Sikkim and Bhutan viz. Teesta, Tala, Kameng etc.

In order to evacuate the power from the above generation projects, additional interconnection between various regions have been planned as a mid term phase. The major schemes are :

- East-North High Capacity 400 kV link (Purnea-Gorakhpur).
- Extension of Sasaram HVDC back-to-back station by another 500 MW.
- Extension of Gajuwaka HVDC back-to-back station by another 500 MW.
- Second East- South 2000 MW HVDC Bipole.

### Long Term Inter-Regional Links

In the ultimate phase, a strong synchronous

National Grid has been envisaged capable to transfer the power from major generating resources such as :

- Hydro projects in North-East Region.
- Large sized Thermal Power Plants in Bihar, Orissa and Madhya Pradesh.

The scheme for ultimate National Grid would involve development of high capacity transmission corridor in chicken-neck area and establishment of a ring of 800 kV lines interconnecting Eastern, Western and Northern Regions. Cumulative Inter-regional transmission capacity of the proposed ultimate National Grid would increase to about 30,000 MW by the year 2012.

### **Unified Load Despatch & Communication Facilities**

POWERGRID has undertaken implementation of state-of-the-art Unified Load Despatch and Communication (ULDC) facilities throughout the country. Unified LD&C facilities are one of the basic pre-requisites for economic despatch of power between Regions/States leading to effective and efficient management of Grids on real time basis.

The implementation of the Unified Load Despatch and Communication (ULD&C) schemes in Northern and Southern Regions are in full swing. During the year, more than 1000 kms. of OPGW cable was laid on 400 kV and 220 kV transmission lines under live line conditions in

Northern Region, which is a significant achievement. Similarly, 400 kms. of fibre optic cables were installed in Southern Region. The initial delays in taking up of Microwave communication have been compensated during this year with successful supply of 12 microwave towers in Northern Region and 19 towers in Southern Region. The detailed engineering, database development and software development have already been successfully completed for all the 33 hierarchical control centres to be set up in Northern Region and 15 in Southern Region. 75 RTUs in NR and 70 RTUs in SR were installed, during the year. ULDC projects in NR and SR are still expected to be completed by January, 2002 as per schedule.

During the year, all the packages of ULDC project of North-Eastern Region were evaluated and awards have been placed in May, 2000. For the Eastern Region project, the technical evaluation of bids for EMS/SCADA and Wide Band telecom packages are in advanced stage. The investment sanction for the Western Region scheme is also in process.

### **VENTURING INTO TELECOM BUSINESS**

The Govt. of India is opening up the domestic long distance communication business by allowing operators other than DoT to construct, own & operate telecommunication infrastructure and provide market services either to other operators or to end users to promote competition, quality of service and to reduce tariff to the consumers. With the deregulation of Telecom sector and in accordance with the trends abroad, POWERGRID has planned to embark upon telecommunication business. This will maximise returns to POWERGRID, which would be deployed for expeditious implementation of National Grid and will also accelerate application of Information Technology to urban and rural areas as well as increase the tele density.

The huge transmission infrastructure of over 40,000 ckt. kms. will be sturdy, clean, easier to lay and free from rodent menace and vandalism. Besides this, network will provide safe, reliable and secure connectivity to cities/towns & rural



*View of 800KV S/C Kishenpur-Moga line*



*Inauguration of POWERGRID's "Delhi-Chandigarh Optical Fibre Link" on EHV lines under NR-ULD & C System by Hon'ble Prime Minister on 2nd August, 2000*

areas across the country. This network will expand to over 70,000 ckt. kms. by 2007 and over 1,00,000 ckt. kms. by 2012. Keeping in view the success stories world-wide of transmission utilities and liberalisation of Indian Telecom Sector and complexities involved, POWERGRID appointed reputed international consultants viz. IVO, Finland alongwith PWC, UK for defining, planning & implementing the diversification strategy in the Telecommunication business. Based on detailed regulatory review, overall market analysis and evaluation of various Business Options, POWERGRID has carved out a three pronged strategy to enter into telecom arena.

During Phase-I, POWERGRID will utilise the spare/excess capacity of telecom network already available under ULDC facilities. It was a matter of pride for POWERGRID that on August 2, 2000, Hon'ble Prime Minister of India inaugurated the first lap of POWERGRID's optic fibre telecom network between Delhi & Chandigarh under Northern Region Unified Load Dispatch and Communication (ULDC) project. The inauguration ceremony was symbolised through a video-conference between the Prime Minister at New Delhi in the presence of Hon'ble Minister of Power, Minister of IT&PA, Minister of

Communication, Minister of State for Power and the Governor of Punjab, the Chief Ministers of Punjab and Haryana, at Bhakra Beas Management Board State-LDC, Chandigarh. Hon'ble Prime Minister applauded POWERGRID's pioneering efforts in bringing state-of-the-art technology for communication for real time monitoring and control of the grid.

The other major links being commissioned shortly includes Delhi-Jaipur (August, 2000); Delhi-Chandigarh-Shimla (October, 2000); Salem-Bangalore and Bangalore-Gooty by December, 2000.

In Phase-II, POWERGRID plans to establish about 14,000 kms. of fibre optic cable backbone network as an infrastructure provider within next 2-3 years at an estimated cost of over Rs. 1,000 crores which is under active consideration by the GOI for approval. Initially, it will establish high priority links of about 3,000 kms which will include Hyderabad-Bangalore-Chennai & Delhi-Lucknow by August, 2001; Delhi- Hyderabad and Delhi-Mumbai by December, 2001. The balance optical fibre network connecting major metros, towns and cities, rural/ unserved areas will be laid down by the year 2002-03.

During, Phase-III, POWERGRID proposes to enter into telecom business as a National Long

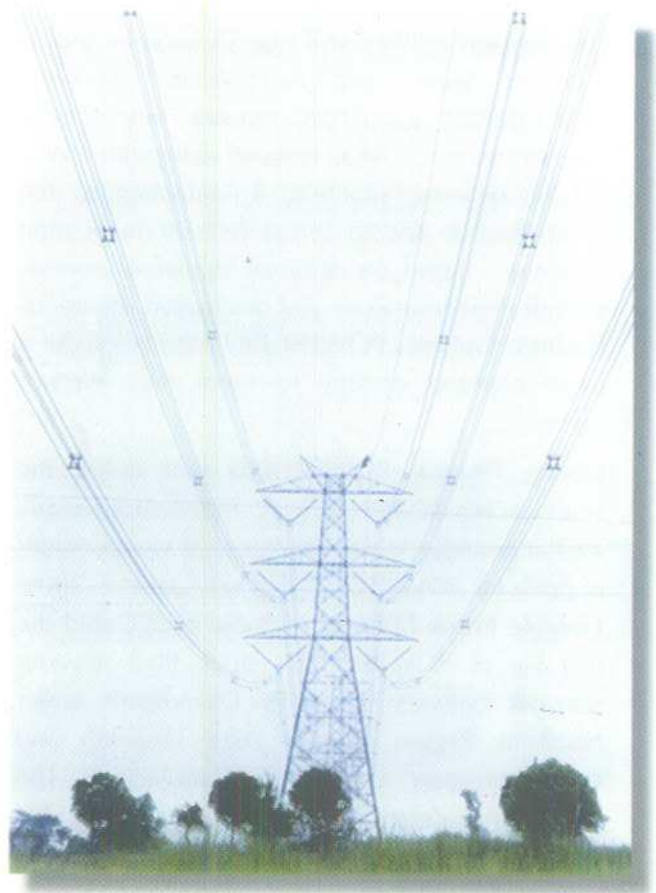
Distance Operator (NLDO) by forming a Joint Venture (JV) with telecom companies of national and international repute. This will necessitate laying of 52,000 Kms. of optical fibre including setting up of number of tele-stations around the country at a cost of about Rs. 5,000 crores. POWERGRID plans to give its core backbone network on lease to the NLDO JVC and simultaneously take an equity stake (26% to 49%) in the NLDO JVC. International Financial Institutions have also shown keen interest in having equity stake in NLDO JVC. POWERGRID issued 'Expression of Interest' on global basis for selection of JV Partner in last week of March, 2000 and will be issuing 'Request for Proposal' to the shortlisted parties shortly. The process of selection of JV Partner and establishment of JVC will be completed by December, 2000. To further enhance its commercial value, POWERGRID envisages to establish linkages with international optical fibre network and in this direction, is looking for a strategic partner to have a strategically located landing station in the country.

For extensive connectivity with cities and towns and to reach rural/ unserved areas, POWERGRID is proposing to have strategic alliance with various SEBs to utilise their T&D infrastructure. It is already assisting SEBs for selection of strategic partner for developing high-grade telecom network in the State. Similar proposals are under active consideration by various SEBs like UPPCL, HVPN, GEB, TNEB, WBSEB, KEB, DVB, KSEB, PSEB, etc. to develop state level network on the similar lines.

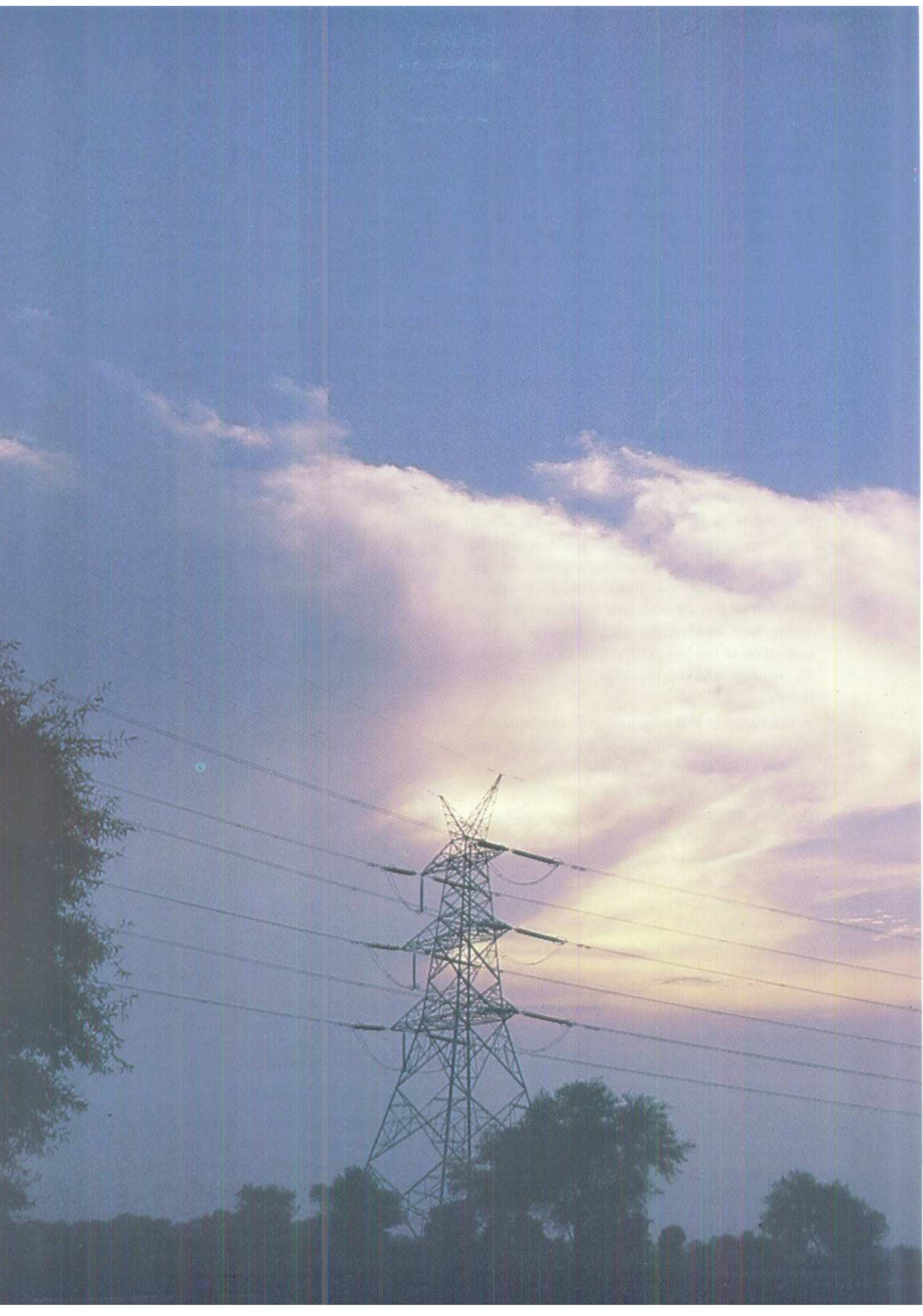
POWERGRID organised an international conference on 'Windows of opportunity for Power Sector by Convergence with Telecom, IT and Multimedia' on 13th June, 2000 in Mumbai to share experiences and address the issues for power utilities to diversify into telecommunication. The Conference was inaugurated by Hon'ble Union Minister of Power. Highly relevant issues on various aspects like Regulatory, Technical, Commercial and also various business options before power utilities to enter the telecom sector were deliberated in this conference.

POWERGRID has also undertaken extensive marketing efforts for garnering business for leasing capacity through its Customer Contact Programme. A constant liaison is being maintained with ISPs, Corporates, Government Depts., Defence, Home, Banks, etc. Company's marketing efforts to tap the telecom market have yielded immediate results and it has bagged Letter of Intent for leasing capacity from M/s STPI & M/s BPL-Net for data transmission and many more are in the pipeline. POWERGRID has also signed MOU with major Telcos such as M/s VSNL, BPL, S.Kumars, L&T, Spectranet and Jain TV for leasing the capacity.

The synergic convergence of the two key infrastructural areas namely Power and Telecommunications will be playing a vital role in overall development of our economy. The unique opportunities offered by such convergence complementing each other has already been established worldwide. POWERGRID has taken a conscious decision to diversify into telecom, synergic with power



400 kV D/C Dadri-Ballabgarh line



transmission to mobilise additional resources. These additional resources will be ploughed back to establish the much needed National Grid with the ultimate aim to provide cheaper power to the common man living in the remotest part of the country. POWERGRID entry in telecom business is another feather in its cap which will not only supplement the efforts of DoT to provide telecom services to rural and remote areas but will also propel POWERGRID further on the path of glory.

### **PROMOTING PRIVATE INVESTMENT IN TRANSMISSION**

With the amendments in Electricity Laws in 1998 private investors can now enter as 'Transmission Licensee' under the regulatory umbrella of CERC/ SERCs which should provide comfort and confidence to private investors. POWERGRID has been designated as the CTU and will be identifying the transmission projects to be established at National/ Regional level as well as selection of private investors/ promoters through competitive bidding for such projects. After evaluation of the bids, POWERGRID will forward its recommendations to CERC for issuance of license.

In discharge of this responsibility, POWERGRID is planning to facilitate private participation both through Independent Power Transmission Company (IPTC) and Joint Venture routes.

POWERGRID, in line with the requirements of 'Guidelines for Private Sector Participation in Transmission Sector' issued by Ministry of Power has identified one Project each on IPTC & JV Routes of Private Participation. For JV Route, specific 400/220kV lines (gantry to gantry) associated with Tala Hydro Electric Project has been identified. The initial developmental activities have already been started by POWERGRID on the Project and feasibility reports have been submitted to CEA.

Techno-Commercial framework for private sector participation have been evolved and Bid Documents viz. Request for Selection (RfS), Shareholders' Agreement (SHA), Implementation Agreement (IA), Transmission Service Agreement (TSA) & License Document (LD) for Joint Venture Route have been finalised. For IPTC route, the

documents are Request for Qualification (RFQ), Request for Proposal (RFP), IA, TSA & LD. The process of creation of Shell Company has also been taken up. The process for obtaining statutory clearances in the name of the Shell Company(s) shall be taken up, after these are incorporated.

### **ENDEAVOURS IN RESEARCH & DEVELOPMENT**

POWERGRID is associated with academic institutions like IIT Delhi and IIT, Kharagpur for research and development in the various fields. A Real Time Digital Simulator (RTDS) for analysis of power system in real time operation is being developed with the help of IIT, Kharagpur. Apart from involving academic institutions, POWERGRID is taking active assistance from Central Power Research Institute (CPRI), Bangalore and test facilities available with Bharat Heavy Electricals India Ltd. (BHEL). Various research projects, such as vibration measurement of transmission line capacitors have been taken with assistance from CPRI. POWERGRID is assisting BHEL for the indigenous development and testing of HVDC and high strength AC disc insulators in association with CPRI.



*Energy Meter calibration being carried out by RTL Engineer*

### **TECHNOLOGICAL MILESTONES**

#### **Polymer Insulators in HVDC Line**

POWERGRID has installed composite (Polymer) insulators, in place of normal disc type insulators at few locations in HVDC Rihand-Dadri line on trial basis, to study the behaviour of polymer



insulators in reducing outages of the line under polluted conditions. No tripping of the line due to faults at these locations have been reported so far.

### Standardisation of Design

Tower designs have been posing a great challenge to POWERGRID due to repeated failures of towers designed by contractors, multiplicity of tower design and limited number of test beds available in the country. POWERGRID has decided to use its in-house expertise and experience acquired over the years to standardise towers and foundation designs for transmission lines for 400 kV and above voltage levels. This has helped POWERGRID in getting more competitive prices against bids for 500 kV bipole towers for HVDC line and 400 kV S/C line associated with Talcher-II transmission system. This will facilitate reduction in the execution time of transmission line projects considerably as design and testing of towers shall not be required now. This will also facilitate interchangeability of towers among various projects and shall reduce the inventory level.

To optimise the space occupation for

transmission projects, studies were undertaken by POWERGRID for evolving designs for compact 400 kV transmission lines by optimisation of clearances and physical dimensions utilizing new technologies. After extensive studies and taking into consideration the insulated cross-arms, phase to phase spacers and adoption of innovative structural configurations, POWERGRID has evolved the design for compact 400 kV transmission line. Right-of-way requirement for this compact line shall be around 40 meters against 52 meters for conventional 400 kV transmission line. Further, the surge impedance loading of the compact line will increase by about 10% and will also be cheaper as compared to conventional transmission line.

### INTER-REGIONAL EXCHANGE OF POWER

POWERGRID has given the highest priority for exchange of power between various regions, so as to utilise the available energy in optimum manner. This has helped on one hand to meet the galloping demand in power starved states while on the other hand, Plant Load Factor of generating plants in the exporting regions has improved.



Dedication of the 800 kV S/C Kishenpur-Moga line to the Nation on 29.5.2000 at Kishenpur, J&K by the Hon'ble Minister of Power, Govt. of India

### Surplus Power In Eastern Region

Eastern Region at present is having substantial energy surplus as the pace of load growth has not been commensurate with the generation capacity addition, leading to the non-utilisation of capacities. The feasible transfer capacity from this region has now been increased from 1550 MW to 2300 MW at the end of financial year 1999-2000. Energy to the tune of 5,500 MW was transferred during 1999-2000 from power surplus Eastern Region to power starved Regions against 3,404 MW in the previous year, an increase of 61% over last year.

### DISASTER MANAGEMENT

One of worst ever cyclones hit the coastal areas of Orissa in the end of October '99. As soon as the news of super cyclone heading towards Orissa was received, an action plan for restoration of power in Orissa was chalked out in consultation with senior officials of MoP/GRIDCO. Simultaneously, POWERGRID's Emergency Restoration System (ERS) teams in Eastern, Western and Southern Regions were alerted. Immediately after the cyclone, POWERGRID's advance team consisting of skilled manpower with materials were dispatched

and as soon as the road communication to Bhubaneswar was restored on 31.10.99 POWERGRID with the officials of GRIDCO made an on the spot assessment of damage to transmission lines. The Emergency Restoration System (ERS), diesel generator sets & mobile phones were deployed on war footing basis in affected areas. Temporary control rooms were set up in the nearest POWERGRID sub-station to provide logistic support to the restoration teams. POWERGRID took up the rectification work on emergency basis and restored power at Cuttack, Jagatsinghpur and Paradeep on 6.11.99, 8.11.99 and 13.11.99 respectively. Diesel Generator Sets to provide emergency power to certain vital installations/essential services were also arranged by POWERGRID. Additional DG sets were also kept ready for taking care of emergency power requirement.

The expenditure amounting to around Rs. 175 lakhs incurred by POWERGRID towards restoration of power in affected areas of Orissa, has been donated to the State of Orissa as a gesture of goodwill. In addition to the above, all the employees of POWERGRID contributed one day's salary for giving relief to the affected people of Orissa.



CMD, POWERGRID receives "MOU Excellence Award" from the Hon'ble Prime Minister

### ASSISTING SEBs

POWERGRID, as a part of its commitment to improve the nation-wide transmission sector, has extended its expertise to assist the State Electricity Boards in improving their transmission and distribution networks.

Inadequate shunt compensation in the distribution network of State utilities has been a consistent problem faced in the country leading to higher T&D losses, degradation of voltage profiles and under-utilisation of EHV transmission network. SEBs or the successor utilities on account of financial constraints have not been able to accord a high priority and raise funds from multilateral/international lenders. To cope up with this, POWERGRID, as a facilitator has extended its services to various SEBs on 'no profit-no loss basis'.

POWERGRID has signed an MOU with the Department of Power, Government of Arunchal Pradesh for execution of two 132 kV and one 220 kV lines including sub-stations at the cost of about Rs. 83 crores. Presently, POWERGRID is executing a consultancy assignment for TDM/TDMA Microwave System for WBSEB.

### CONTRACTS MANAGEMENT

POWERGRID has evolved its procurement



View of Auto-Transformer

strategy based on the latest market trend in the industry, which has not only been lauded by the World Bank and Asian Development Bank, but they have recommended the name of POWERGRID for being consultant to some of the SEBs for such activities.

During the financial year 1999-2000, POWERGRID has placed 42 orders aggregating to Rs. 1847 crores under multilateral as well as domestic funding, which is the highest in value in one financial year since the inception of POWERGRID. Contracts for Talcher HVDC terminal (Rs. 820 crores) and Sasaram HVDC B/B (Rs. 202 crores) were awarded in record time of less than one month from opening of price bids. In addition to this, financial closure for Talcher HVDC terminal was also concluded in less than one month after opening of financial proposals by signing loan agreement for approximately Rs. 800 crores with KfW, Germany.

### REMAINING VIGILANT

Being a Public Enterprise, POWERGRID shoulders the responsibility of ensuring rightful utilisation of public money invested in the company. Vigilance activity has attained a new milestone by focusing on preventive vigilance workshops and surprise inspections. Such workshops did spread a message amongst our employees about the need to adhere to the code of conduct and business ethics which paved the way for achieving excellence in performance coupled with high standards of integrity.



POWERGRID men at work to restore Kendrapara-Paradeep line after Orissa cyclone



*ERS on 132 kV Paradeep-Paradeep Phosphate line*

Department of Personnel & Training, Govt. of India's guidelines were followed in restructuring the Vigilance Department to achieve greater efficiency and supervision.

#### **HUMAN RESOURCE MANAGEMENT**

POWERGRID believes that the key of its success lies in its valued human resources. Nearly 7000 trained professionals stationed all over the country are the core strength of the company. The success story of POWERGRID lies in ensuring operation and maintenance of transmission system inspite of geographic hurdles, climatic obstruction and the hazards involved in operating through hilly terrain, deserts, rivers and even places having sub-zero temperature.

#### **Employees' Compensation and Welfare**

During the year, a remarkable shift in the employee compensation has been made by incorporating various objective functional parameters in the hitherto existing Productivity Linked Transmission Incentive Scheme. Another significant achievement is the introduction of Productivity based bonus payment.

Various other employees' welfare schemes have also been initiated which would go a long way in accelerating zeal and drive of employees to participate and

contribute in the Organisation's growth.

#### **Training & Development (HRD)**

Over the years, POWERGRID has positioned itself as a learning organisation and knowledge and skill upgradation are an on-going process in the company. Innovative and effective HRD training programmes were organised during the year, which includes training in modern technologies in Power transmission, recent trends in tariff fixation and commercial management and communication software programmes. In the process 2632 employees were trained. The total training mandays during the year 1999-2000 which reveals that the per employee training manday ratio is 1:3. This is comparable with international standard.

#### **Implementation of Social Justice**

It has been a policy of the company to take the interest of Scheduled Caste, Scheduled Tribe and Other Backward Classes keeping in view the constitutional mandate. POWERGRID strives continuously to contribute for uplift of the deprived sections of the society. The Government of India policy with regard to reservations of posts in recruitment and promotion has been scrupulously complied with. To have an effective monitoring system of the activities pursued in this regard, SC/ST cell operates at Corporate Centre as well as in



*Training session on DATA & Display Presentation .*



*A view of 400/220 kV Raipur Sub-station*

Regions and RLDCs under the control of a nodal liaison officer.

### **Grievance Handling**

POWERGRID has well defined Grievance Redressal System. The grievance cell at Corporate Centre and Regions and RLDCs are coordinated by a nodal officer for decentralised grievance redressal backed by central monitoring at corporate level. The efficiency of the system is evident from the least number of grievances raised by employees and no grievance is pending as on date.

### **Improving Quality of Life**

As a sequel to POWERGRID's continuous efforts to promote corporate social responsibility, various cultural programmes, sports events, fine art and handicrafts exhibitions, etc. were organised at all regional headquarters so as to enrich the social life of the employees. POWERGRID repeated its past achievement by bagging first position in Inter Power Sector Cultural Programme organised under the aegis of Power Sports Control Board. To commemorate the completion of the 10 years of formation of POWERGRID, various cultural programmes, exhibitions were organised at regional level for a month, which culminated in celebration at

central level held at Agra. More than 5000 persons witnessed the grand exhibition of fine art and handicrafts, reflective of diverse culture and life style of the country.

### **Industrial Relations**

POWERGRID management believes in free and frank discussions directly with the employees in a open forum. Towards this, a system of 'Open House' discussions have been started since the last three years. Chairman and other Functional Directors listen and reply to the various issues raised by the employees periodically. Apart from this, there are other participative forums existing in POWERGRID which have been effectively used to sort out different employee related issues pertaining to work place, safety and productivity



*POWERGRID taking up Relief work*





Signing of MOU with MDI, Gurgaon

including economic issues. POWERGRID National Bipartite Committee, an apex level Bipartite forum of workers and management has been an instrument in meeting employee's expectation viz-a-viz commercial aim and objective of the company. During the year, the industrial relation situation has been cordial and not a single manday has been lost.

### Rajbhasha

POWERGRID is celebrating 'Rajbhasha Year' on the occasion of Golden Jubilee of Rajbhasha. Government of India policy to promote Rajbhasha in day to day working is being implemented by POWERGRID in letter and spirit.

POWERGRID has designated one nodal officer in each unit of the company including sub-stations widely dispersed across the length and breadth of the country, to inculcate the culture of working in Rajbhasha. During the year, Rajbhasha conference was organised at Udaipur, which was lauded by various agencies.

### REDEFINING THE GREEN BOUNDARIES

POWERGRID has always been responsive to environmental and social issues and is the only Organisation in the power sector to evolve ESPP (Environmental and Social Policy and Procedures) for its projects. The unique document was prepared by interaction with the public, NGOs, Project Affected Persons, International Financial

Institutions, various Government agencies at State and Central Level. The formation of ESPP developed by POWERGRID has been accepted by World Bank and highly appreciated by other multilateral agencies also, like ADB and OECF etc. The three key principles of POWERGRID's ESPP are *Avoidance, Minimisation and Mitigation.*

Screening and Scoping (initial Environment Assessment Report (IEAR)/Initial Environment Examination Report (IEER) and detailed Environment Assessment Report (EAR) are invariably made for all the POWERGRID projects as per POWERGRID's policy.

Implementation of Environmental and Social Management Plan has been made an integral part of the project execution process. Socio-economic Survey for projects like Sasaram and Kolar HVDC sub-station and development of Rehabilitation Action Plan (RAP) was conducted in line with ESPP and public consultation was undertaken for the East-North inter-connector and Talcher-II projects, thus affirming, implementation of ESPP in letter and spirit.

Out of 14 Nos. of forest proposal submitted during the year, approval for 13 cases were obtained from MoEF. Another one is in the process of approval from Minister for Environment & Forest.

Under POWERGRID ambitious training



Implementation of ESPP in Talcher-II Tr. System

programme on ESPP, about 150 executives of Corporate, Regional & Site Offices were trained on various aspects of ESPP for its implementation.

### ASSURING QUALITY

In POWERGRID, quality is a way of life. During the course of the year, the Corporation was re-certified for ISO 9001 certification by the certifying body M/s Electricity Association Quality Assurance (EAQA), UK, following extensive audit of the company's quality system carried out by NQA Quality Systems Registrar on behalf of EAQA. The organisation's quality vision encompasses design, engineering, execution, operation & maintenance and related management functions.

As a Service Organisation, POWERGRID has its Quality policy *inter-alia* declared its commitment to provide at all times the best possible time-bound quality service commercially available to its valued customers in all areas of its operations. The quality system of POWERGRID provides for the requisite systems and procedures to bring in the total involvement of all its personnel down the line, in pursuance of attaining the company's objectives.

### POWER TRANSFER TO NEIGHBOURING COUNTRIES

POWERGRID being a Central Transmission Utility is playing a pivotal role in development of SAARC Grid for mutual exchange of power and harnessing the vast potential of diversified resources and loan patterns. Attempts are being made by POWERGRID to, establish transmission

lines between neighbouring countries like Bangladesh and to strengthen the existing links with Nepal & Bhutan. POWERGRID has commissioned a 132 kV Tanakpur-Mahendranagar transmission line entrusted to it by Government of India.

India already has terms of co-operation for exchange of power with Nepal and Bhutan. During 1999-2000, meetings with Bhutan authorities took place and the technical as well as commercial issues related to evacuation of power from Tala(1000MW) HEP were formalised. Accordingly, POWERGRID has prepared the feasibility report for the transmission system falling under Indian domain.

### REGIONAL HIGHLIGHTS

For efficient management of its Grid network, POWERGRID has segregated its business into six Regions. The major achievements of each of these regions during the year are as follows:

#### Northern Region-I (NR-I)

Northern Region-I is one of the biggest Regions and is maintaining transmission network of over 9000 ckt. kms. The average line availability during the year was remarkable and stood at 99.66%. During the year, a total of 472 ckt. kms. of 220 kV transmission lines and extension of Kanpur 400/220 kV sub-station was completed. With successful completion of 132 kV Tanakpur-Mahendranagar line up to Nepal, entrusted to POWERGRID by GOI, power exchange among India and Nepal has been facilitated. Transmission system associated with Unchahar



Annual Press Conference addressed by CMD, POWERGRID



Journalists of Print & Electronic Media during the conference



Thermal Power Project and Faridabad Gas Project were completed well ahead of commissioning of Generating units. At present 362 ckt. kms. of 800 kV transmission lines, 124 ckt. kms. of 400 kV transmission lines are under construction. Construction of 800 kV sub-station at Meerut and 400 kV sub-stations at Allahabad and Bhiwadi alongwith extension of Bassi sub-station are also being carried out by the Region.

Northern Region with all concerted efforts is implementing System Control and Coordination project spread over 7.5 Lakh sq. km. covering seven states, which is the largest project of its kind in the world. 1200 kms. of Optic Fibre stringing and installation of 200 nos. of RTUs were successfully completed, as against MOU target of 575 kms. of Optic Fibre stringing and installation of 90 RTUs, respectively. The Rihand-Dadri HVDC bipole line created another history by transferring highest ever power to the tune of 35.26 MU in a single day. NR-I planned and mobilised all resources to meet exigencies created by the strike of UPSEB employees. All efforts were made to provide uninterrupted and adequate power supply to all the constituent members and to maintain the Grid stability.

#### Northern Region - II (NR-II)

Out of about 4000 ckt. kms. of transmission line added in POWERGRID's network during the year, the contribution of NR-II was over 28%. During

the year 957 ckt. kms. of 400 kV transmission line and 275 ckt. kms. of 800 kV Kishenpur-Moga-I transmission line (first of its kind in India) were completed which include Generation linked (Nathpa-Jhakri) and grid strengthening transmission system. Presently, 1,296 ckt. kms. of transmission lines are under construction, consisting of 287 ckt. kms. of 800 kV, 661 ckt. kms. of 400 kV and 348 ckt. kms. of 220 kV transmission line along with associated sub-stations including Bay extensions. Some of the important ongoing projects in this Region include Nathpa-Jhakri-Nalagarh (400 kV), Kishenpur-Moga-II (800 kV), Jalandhar-Hamirpur and Jalandhar-Dasuya (220 kV) etc.

One tower of Uri-Wagoora line was blasted by militants disrupting evacuation of power from Uri HEP. The line was restored within ten days with the help of Emergency Restoration System (ERS) by the dedicated team of NR-II employees. The Region also played a vital role in immediate restoration of 220 kV Kishenpur-Pampore line of PDD (J&K) through ERS, when the same was blasted by militants. For enhancement of power transfer capacity of Kishenpur-Pampore 220 kV line (PDD), a series compensation has been successfully installed at Kishenpur end.

#### Eastern Region (ER)

The foundation stone for the prestigious 500 MW HVDC back-to-back sub-station at Sasaram was



*Literary & Cultural activities in Regions organised regularly to improve the quality of life*



*Bus Bar Maintenance at Khammam S/S*

laid on by Hon'ble Union Minister of Power. On the other hand, land for HVDC bi-pole terminal station at Talcher was acquired despite stiff resistance from the villagers. The construction activities for both the projects are progressing at rapid pace.

During the year, 220 kV S/C Budhipadar -Korba transmission line of 180 ckt. kms., 400 kV Jeypore extension bays under Jeypore - Gazuwaka TL system, 400 kV bay at Indravati substation on behalf of GRIDCO, 132 kV S/C and D/C link line from power house to Switchyard at Rangit HEP were commissioned. The commercial operation of 132 kV S/C Dehri-Karamnasa transmission line started during the year. In addition to the above, extension of 220 kV Budhipadar sub-station, 132 kV Dehri sub-station and 132 KV Karamnasa sub-station were also completed.

A Super Cyclone, with a severe devastating effect, hit Orissa during October, 1999 paralysing power supply. Eastern Region of POWERGRID immediately swung into action and mobilised resources e.g. DG sets, Emergency Restoration System (ERS) with fully equipped team to Orissa to restore the damaged lines and transmission systems. Eastern Region took up the restoration work and completed the task with the help of ERS ahead of the schedule. It is a matter of pride that Eastern Region played a pivotal role in the entire relief operation and it was the nodal agency for the Central Govt. Task force which was operating in the state.

For the first time in POWERGRID, a socio-

economic survey of the project affected people of Pusawali village under Sasaram HVDC back-to-back project was undertaken in association with A.N. Sinha Institute of Social Studies and a comprehensive Rehabilitation Action Plan (RAP) was formulated and furnished to the World Bank. The RAP has been approved by the World Bank and implementation of Rehabilitation plan has commenced. ESPP plan for Binaguri and Purnea sub-station is also under finalisation.

### **Western Region (WR)**

The region maintained line availability at 99.65% against MOU target of 98.30% and outage rate of lines was 3.514 which is well within the MOU limits of 6 per line per year. During the year 1999-2000, 534 Ckt Kms of Vindhya-chal-Satna transmission lines and 243 ckt. kms. of Korba-Raipur and LILLO along with 400 kV sub-stations at Satna and Raipur were completed. The major projects being taken up for construction is 400 D/C Kolhapur-Mapusa transmission line along with 400/220 kV sub-station at Mapusa (Goa). This project will facilitate the transfer of power from Maharashtra to Goa and would be instrumental in implementing the power scenario of Goa. After completion, Mapusa will become the first 400 kV sub-station of Goa.

### **Southern Region (SR)**

During the year, Vizag HVDC back-to-back station, 124 ckt. kms. of 400 kV D/C Kaiga-Sirsi transmission line, 94 ckt. kms. of 220 kV D/C Kayamkulam-Pallom transmission lines along with extension of bays at Kayamkulam and Pallom were commissioned. In addition to above 1X315 MVA transformer at Nagarjunasagar was also commissioned. Some of the major projects under construction are Talcher-Kolar HVDC Bi-pole link, Kaiga-Narendra transmission line, Neyveli-Trichy transmission line. Hotline maintenance was carried out on 400 kV Gooty - Bangalore and 400 kV Bangalore-Salem transmission lines. External income earned by Central Insulating Oil Testing Lab on account of oil testing was Rs. 13.04 lakhs during the year 1999-2000, which includes US \$ 3000 from Mauritius for testing of 20 nos. of oil samples.



Southern Region SC&C project is under execution at a rapid pace and installation of 496 kms. of Fibre Optic cable along with installation of 106 RTUs were completed as against MOU target of 400 kms. of Fibre cable and 80 RTUs respectively. Bays extension at 220 KV Villianur sub-station under consultancy for Pondicherry Electricity Department was successfully Commissioned. Bahoor — Bahoor, Bahoor — Eripakkam 110 kV lines have been completed and test-charged.

Technical supervision of bay extension works of APTRANSCO at Hyderabad and Vijayawada were completed and POWERGRID will get Rs. 2.02 crores as a consultancy fee against above work. POWERGRID also signed MOU for technical supervision of bay extension of APTRANSCO at Gazuwaka and Khammam at a fee of Rs. 3.3 crores.

SRTS has been adjudged the best Regional Transmission System (RTS) among all the RTS in implementation of 'IT for Productivity' for the year 1999-2000.

#### **North Eastern Region (NER)**

POWERGRID has been facing acute law & order problems while implementing its projects in North-Eastern Region. The employees are functioning under constant threats, abduction and extortion notices including kidnappings. Despite of all these difficulties, during the year, 1039 ckt. kms. of transmission lines and extension activities at various sub-stations were completed.



*A view of Breaker Over-hauling in 400 kV Bhilai Sub-station*

POWERGRID completed transmission lines viz. 132 kV Badarpur-Kumarghat, 132 kV S/C Badarpur-Bairabi -Aizwal, 132 kV S/C Khliehriat - Badarpur, 132 kV S/C Badarpur - Jiribam and 400 kV D/C Balipara - Bongaigaon. In addition to this, extension of 132 kV sub-stations at Nirjuli, Khandong, Jiribam, Kumarghat and Aizwal were successfully done.

Presently, 132 kV S/C Agartala - Kumarghat line is under construction and is expected to be completed by December, 2000.

#### **PARTICULARS OF EMPLOYEES**

The particulars of employees of the Corporation who were in receipt of remuneration in excess of the limit prescribed under Section 217 (2A) of the Companies Act, 1956 is given in Annexure-I to this report.

#### **CONSERVATION OF ENERGY, TECHNOLOGY ABSORPTION AND FOREIGN EXCHANGE EARNINGS AND OUTGO**

As regards the requirement of the disclosures under Section 217 (1) (e) of the Companies Act, 1956 read with Rule 2 of the Companies (Disclosure of particulars in the Report of Board of Directors) Rules, 1988 relating to conservation of energy, technology absorption and foreign exchange earnings and outgo information is given in Annexure-II to this report.

#### **COMPTROLLER AND AUDITOR GENERAL'S COMMENTS**

Review of the accounts for the year ended 31 st March, 2000 by the Comptroller and Auditor General of India under section 619 (4) of the Companies Act, 1956 along with Directors' comments on the points raised by the CAG is given in Annexure-III to this report.

#### **POWERGRID'S BOARD**

During the year, many changes took place in the Board of Directors of the company. Shri J.Vasudevan, Additional Secretary, Ministry of Power was appointed on the POWERGRID Board in place of Shri Anil Razdan, Joint Secretary, Ministry of Power w.e.f. 28.12.1999. Shri R. Ramanujam, Joint Secretary & Financial



*Open House Forum - A platform to exchange views & ideas with management*

Advisor, Ministry of Power was appointed as Director w.e.f 23.3.2000 after Shri S.R. Shivrain ceased to be JS & FA of Ministry of Power. Shri R. Parthasarathy, part time Professional Director, expressed inability to continue and ceased to be a Director in March, 2000. Shri Shivrain was on our Board for a period of 5 years and the Board gratefully acknowledges the invaluable contribution and guidance received from him during his innng with POWERGRID. The Board of Directors also place on record its deep appreciation for the contribution and guidance received from Shri Razdan and Shri R. Parthasarathy.

### **ACKNOWLEDGEMENTS**

The Directors place on record their grateful thanks for the guidance and cooperation extended all through by Ministry of Power, Central Electricity Authority, Ministry of Home Affairs, Central Electricity Regulatory Commission, Deptt. of Economic Affairs, Ministry of Finance and other concerned Govt. departments/agencies at the Central and State level without whose active support, the achievements by the Corporation, during the year under review, would not have been possible. Moreover, the Board extends its sincere thanks to the customers of the corporation, the State Electricity Boards for their endeavour to pay the transmission charges inspite of their financial hardships.

The Directors take this opportunity to thank the Principal Director of Commercial Audit and Ex-Officio Member Audit Board-III for the

cooperation during the year. Your Directors also acknowledge the valuable suggestions and guidance received from the statutory auditors viz. M/s. Hingorani M & Co., M/s. Venugopal & Chenoy and M/s D.P. Sen & Co. during the audit of accounts of the company for the year under review.

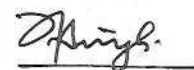
Your Directors further wish to place on record their sincere thanks to the various national/international financial institutions / banks for the continued trust and confidence reposed by them by rendering the continuous timely assistance and patronage for successful implementation of the various projects by the company.

Last but not the least, the Board of Directors place on record the valuable contribution and appreciation for the support and the cooperation extended by each member of the POWERGRID family in the affairs of the company.

Date : 14th August, 2000

Place: New Delhi

On behalf of the Board



**(R.P. SINGH)**

Chairman & Managing Director

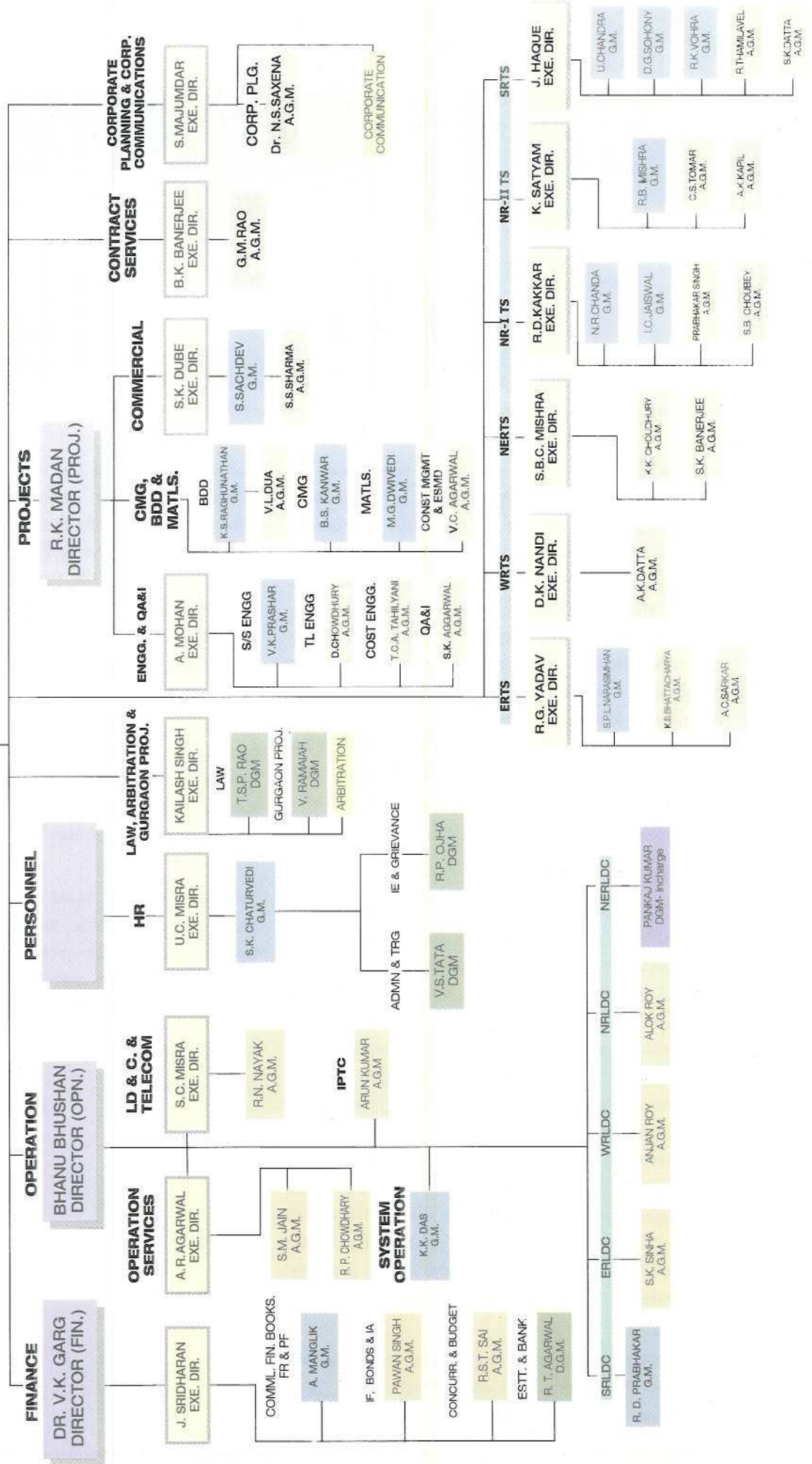
# POWERGRID ORGANISATION CHART

**R.P. SINGH**  
C.M.D.

VIGILANCE

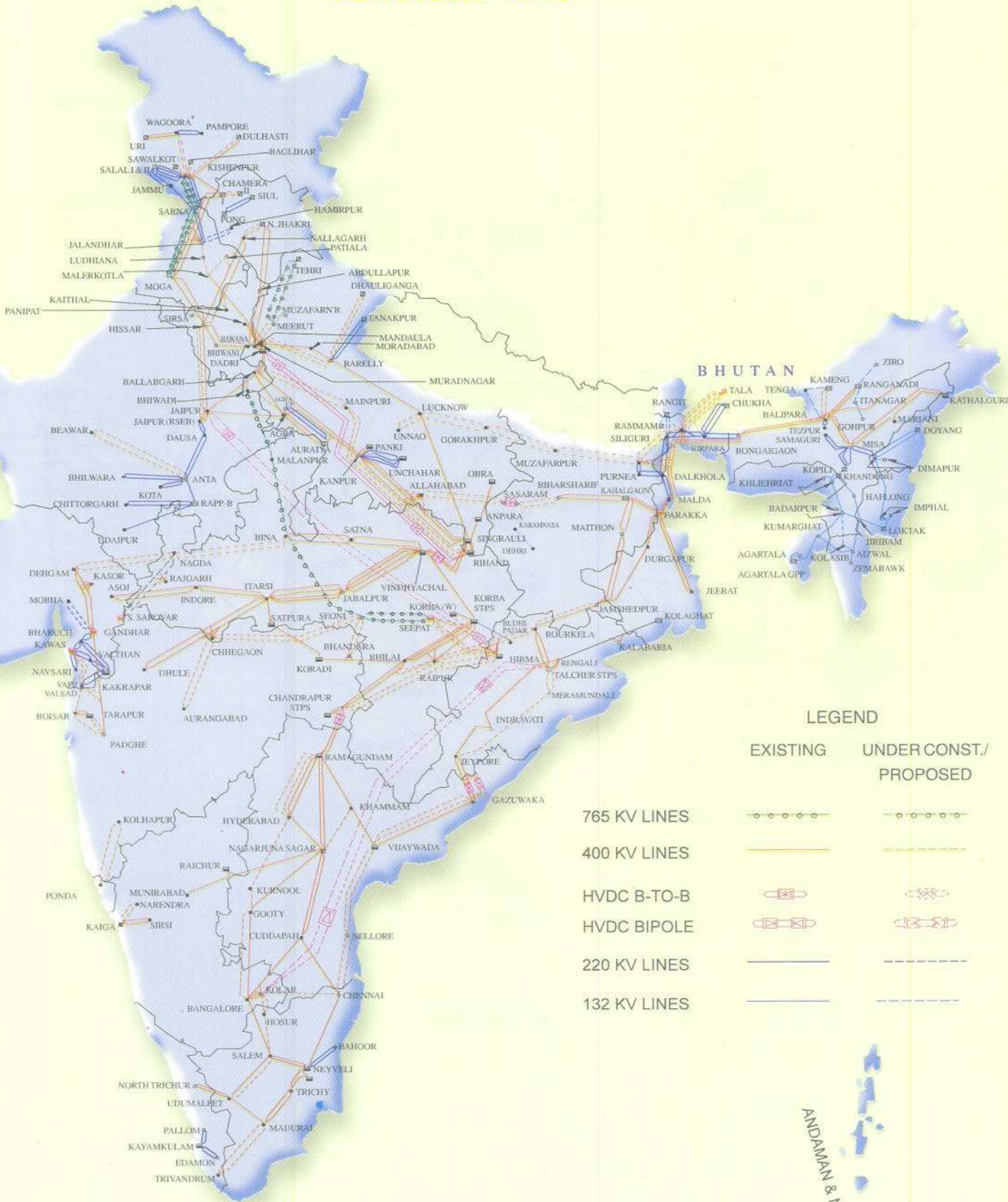
**R.R.P.N. SAHI**  
C.V.O.

DIVYA TANDON  
COMPANY SECY.



# POWER MAP OF INDIA

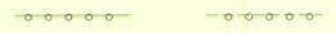
## POWERGRID LINES



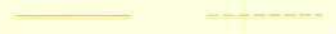
### LEGEND

EXISTING      UNDER CONST./  
PROPOSED

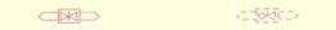
765 KV LINES



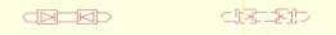
400 KV LINES



HVDC B-TO-B



HVDC BIPOLE



220 KV LINES



132 KV LINES



LAKSHADWEEP

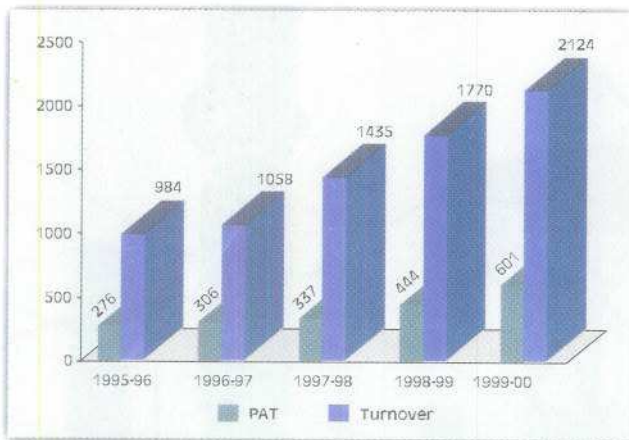
ANDAMAN & NICOBAR



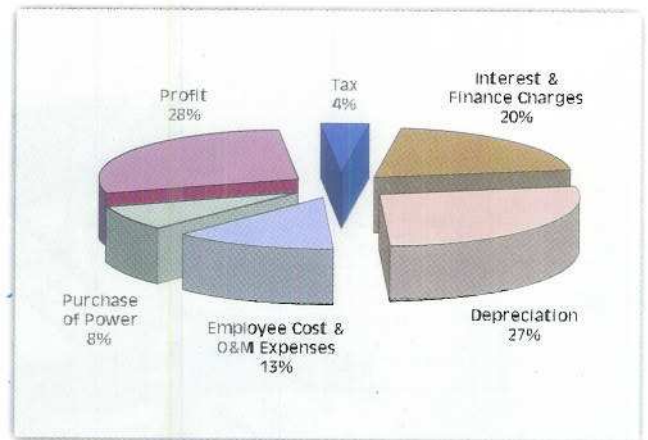




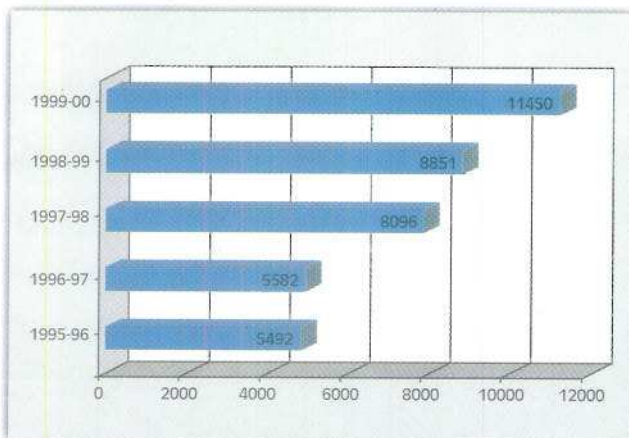
**Profit After Tax and Turnover (Rupees Crores)**



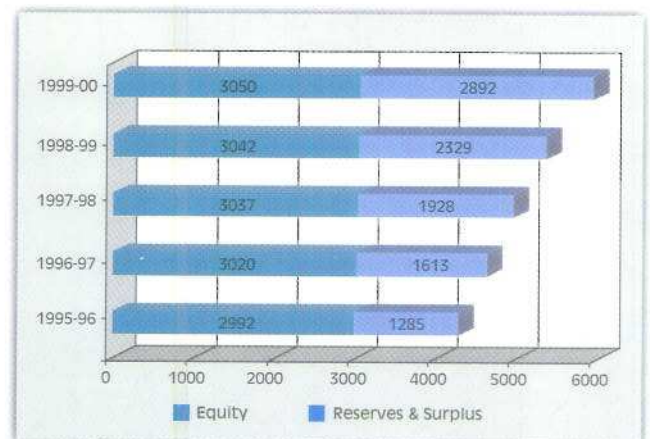
**Analysis of Revenue - 1999-00**



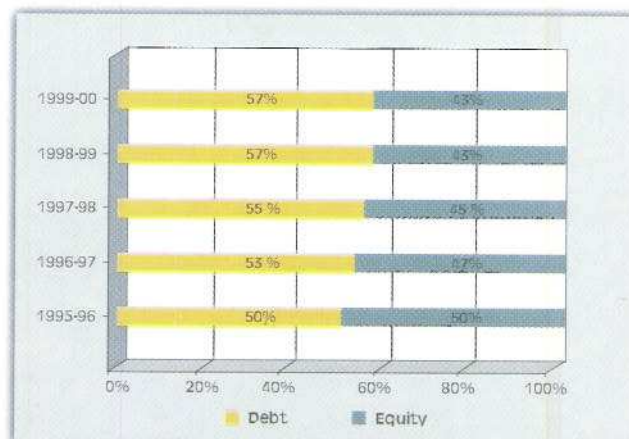
**Gross Fixed Assets (Rupees Crores)**



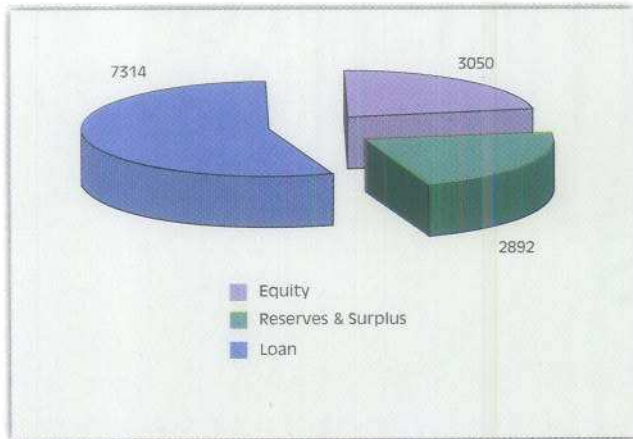
**Equity and Reserves (Rupees Crores)**



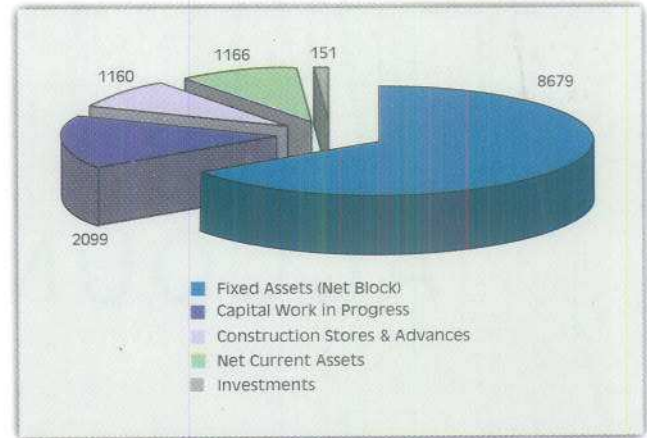
**Debt-Equity Ratio**



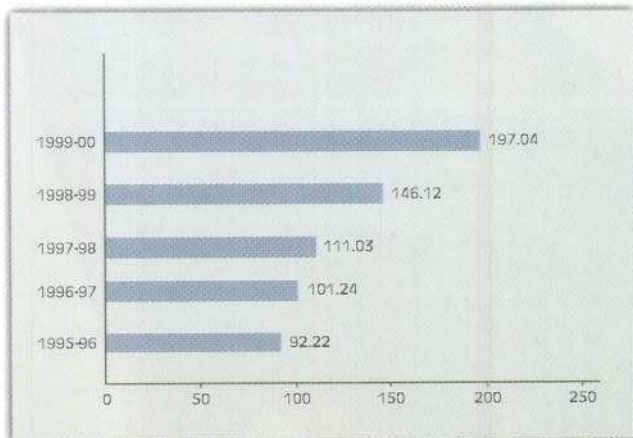
**Sources of Funds (Rupees Crores)**



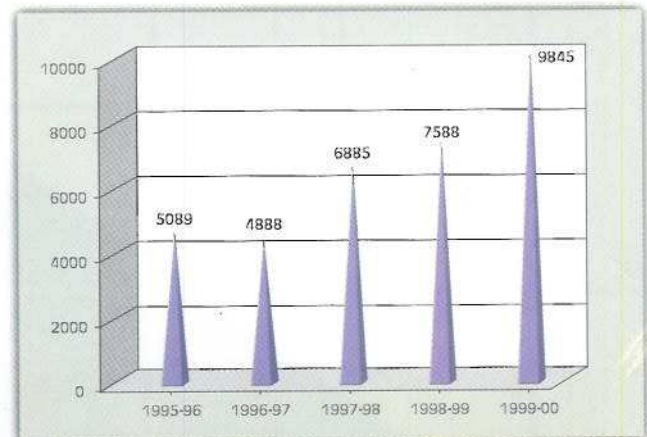
**Application of Funds (Rupees Crores)**



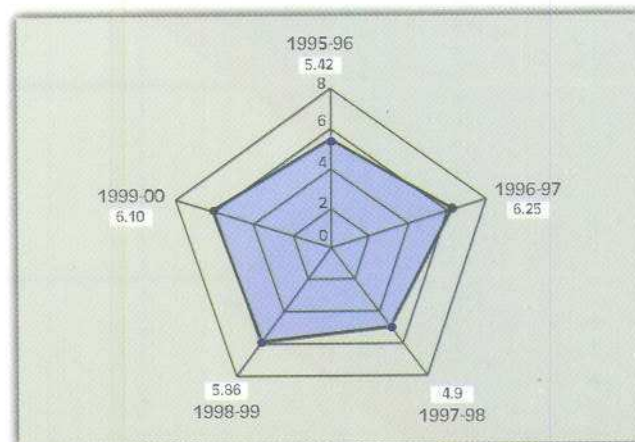
**Earning per Share of Rs. 1000 each (Rs.)**



**Capital Employed (Rupees Crores)**



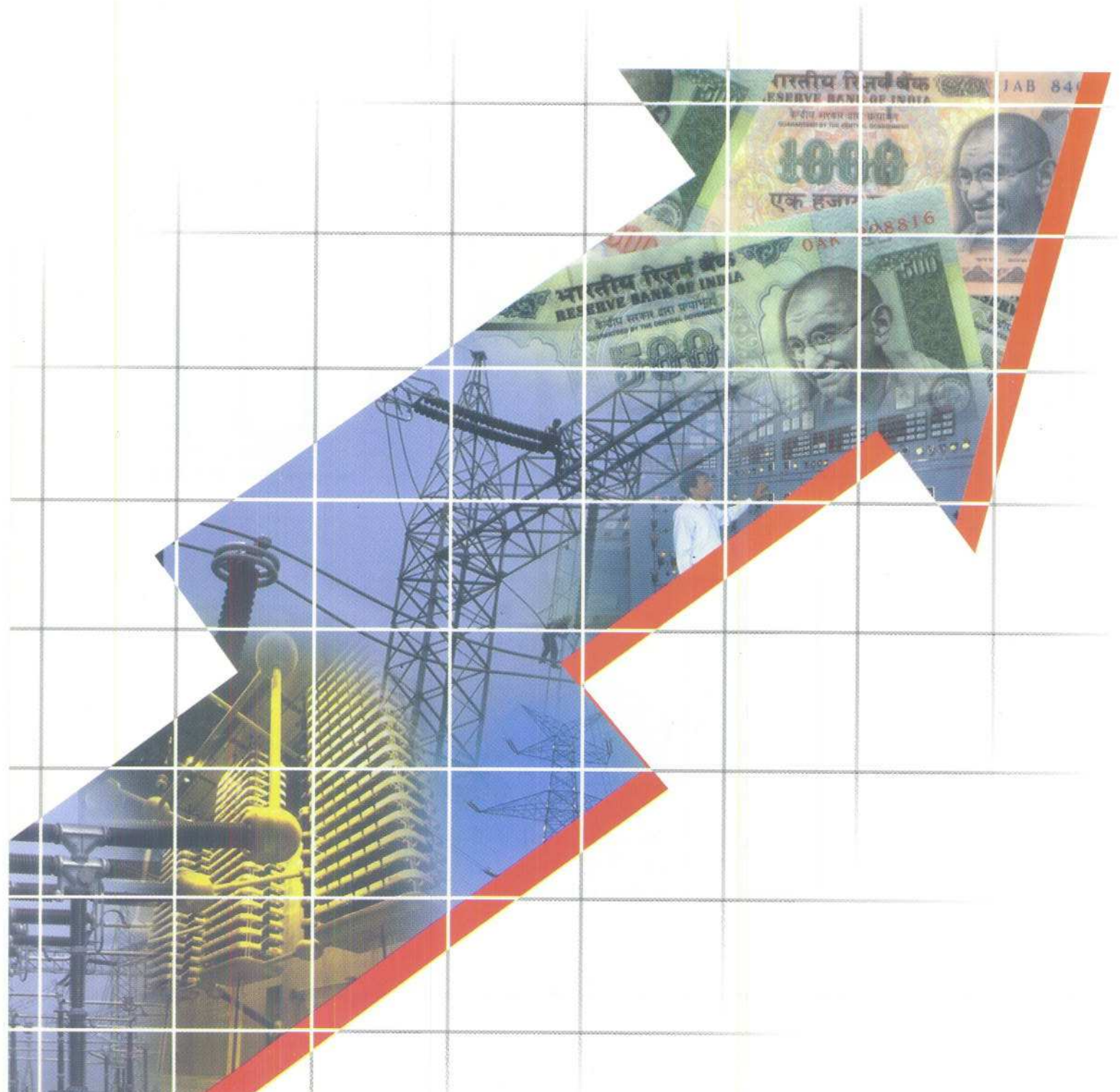
**Net Profit as % of Capital Employed**



ACCOUNTS

# ACCOUNTS

ACCOUNTS



## FIVE YEAR SUMMARY

### FINANCIAL POSITION

(Rs. in Lacs)

	1999-00	1998-99	1997-98	1996-97	1995-96
<b>(A) WHAT THE COMPANY OWNED :</b>					
Gross Fixed Assets	1144955	885068	809560	558218	549168
Less : Depreciation	277064	217531	165348	128348	95076
Net Fixed Assets	867891	667537	644212	429870	454092
Capital Work-in-Progress & Construction Stores & Advances	325116	430667	366536	451046	308152
Investments	15147				
Current Assets, Loans & Advances	204215	162746	127169	116060	110946
<b>Total (A)</b>	<b>1412369</b>	<b>1260950</b>	<b>1137917</b>	<b>996976</b>	<b>873190</b>
<b>(B) WHAT THE COMPANY OWED :</b>					
Borrowing From :					
Govt. of India	185802	165026	145622	117559	88517
Financial Institutions	760	1326	16901	17579	18357
Foreign Currency Loans	328357	266526	215326	169545	140935
Cash Credit	748	602			
Other Loans/Bonds	215770	219628	181196	172488	142153
Current Liabilities & Provisions	87636	71434	82864	57119	56141
<b>TOTAL (B)</b>	<b>819073</b>	<b>724542</b>	<b>641909</b>	<b>534290</b>	<b>446103</b>
<b>(C) NET WORTH OF THE COMPANY REPRESENTED BY :</b>					
(i) Equity capital (including Deposit)	304954	304154	303654	302004	299224
(ii) Free Reserves and Surplus	250801	192059	149141	116996	88621
iii) Less : Misc. Exp. to the extent not written off	827	675	435	608	638
<b>Total (C)</b>	<b>554928</b>	<b>495538</b>	<b>452360</b>	<b>418392</b>	<b>387207</b>
<b>(D) COMMITTED RESERVES :</b>					
(i) Capital Reserves	11206	11206	11206	11827	11206
(ii) Grants in Aid	27162	29664	32442	32467	28674
<b>Total (D)</b>	<b>38368</b>	<b>40870</b>	<b>43648</b>	<b>44294</b>	<b>39880</b>
<b>Total (B+C+D)</b>	<b>1412369</b>	<b>1260950</b>	<b>1137917</b>	<b>996976</b>	<b>873190</b>
<b>CAPITAL EMPLOYED</b> (Net Fixed Assets + Net Current Assets)	<b>984470</b>	<b>758849</b>	<b>688517</b>	<b>488811</b>	<b>508897</b>
<b>(E) RATIOS</b>					
Net Profit to Capital Employed (%)	6.10	5.86	4.90	6.25	5.42
Net Profit to Net Worth (%)	10.83	8.97	7.45	7.31	7.13
Net Worth Per Rupee of Paid-up Capital (in Rs.)	1.82	1.63	1.49	1.39	1.29
Debt/Equity ratio	1.32:1	1.32:1	1.24:1	1.14:1	1.01:1
Liquidity Ratio	2.33:1	2.28:1	1.61:1	2.03:1	1.98:1

## FIVE YEAR SUMMARY

### OPERATING RESULTS

	(Rs. in Lacs)				
	1999-00	1998-99	1997-98	1996-97	1995-96
<b>(A) EARNED FROM :</b>					
Transmission Charges	178950	157701	124653	93422	86119
Sale of Power	17780	13259	16535	10127	10736
Consultancy & other income	15657	6066	2280	2266	1503
<b>Total Earnings</b>	<b>212387</b>	<b>177026</b>	<b>143468</b>	<b>105815</b>	<b>98358</b>
<b>(B) PAID &amp; PROVIDED FOR :</b>					
Purchase of Power	17777	13305	13114	7158	7566
Employees Remuneration & Benefits	14258	10601	8534	6338	5616
Transmission Expenses	4323	4696	4013	2944	2339
Administration Expenses	7841	6578	5885	4234	3774
Other Expenses (Including Prior Period Adj.)	-151	1554	-2116	244	-455
Deffered Revenue Expenditure	178	233	179	181	159
Provisions	315	155	453	1169	61
<b>Total Expenditure (Excl. Depr. &amp; int.)</b>	<b>44541</b>	<b>37122</b>	<b>30062</b>	<b>22268</b>	<b>19060</b>
Profit before Depreciation & Interest	167846	139904	113406	83547	79298
Depreciation	57763	52114	36626	33004	32040
Interest & Finance Charges	42019	38087	34574	19967	19662
Net Profit after Interest & Depreciation but before Tax	68064	49703	42206	30576	27596
Provision for tax	7976	5261	8490*	1	1
Net Profit after Tax	60088	44442	33716	30575	27595
Dividend	2000	2000	2000	2000	1000

\* Income Tax of Rs. 3951 lacs for the year 1996-97 has also been provided during 1997-98.

## REVENUE EXPENDITURE ON SOCIAL OVERHEADS

FOR THE YEAR ENDED 31ST MARCH, 2000

		(Rs. in Lacs)							
Sl. No.	Particulars	Township	Education & School Facilities	Medical Facilities	Subsidised Transport	Social & Cultural Activities	Subsidised Canteen	Total	Previous Year
1.	Payment to employees		44	832	79	97	132	1184	1343
2.	Material Consumed	16						16	18
3.	Rates & Taxes	20						20	7
4.	Welfare Expenses	2	43	125	25	555	33	783	633
5.	Others including Repair and Maintenance	227		1	1			229	249
6.	Depreciation	422						422	404
7.	Sub-total (1 to 6)	687	87	958	105	652	165	2654	2654
8.	Less : Recoveries	41			1			42	37
9.	Net Expenditure (7-8)	646	87	958	104	652	165	2612	2617
10.	Previous year	653	73	1169	69	491	162	2617	

## ACCOUNTING POLICIES

### 1.0 CAPITAL RESERVE

Grants-in-aid received from Central Government or other authorities towards capital expenditure for Projects and betterment of transmission systems are shown as grants-in-aid under 'Reserves and Surplus' till the utilisation of the grants. However, grants received for specific depreciable assets are shown under 'Reserves and Surplus' while the same are under construction. On capitalisation of assets, such grants-in-aid are treated as deferred income and recognised in the Profit and Loss Account over the period and in the proportion in which depreciation on these assets is provided.

### 2.0 FIXED ASSETS

- 2.1 In the case of commissioned assets, deposit works/cost plus contracts where final settlement of bills with contractors is yet to be effected, capitalisation is made on provisional basis subject to necessary adjustments in the year of final settlement.
- 2.2 Assets and Systems common to more than one Transmission System are capitalised on the basis of engineering estimates and /or assessments.
- 2.3 The cost of land includes provisional deposits, payments / liabilities towards compensation, rehabilitation and other expenses but does not include the deposits / advances / expenditure incurred wherever possession of land is not taken.
- 2.4 Capital expenditure on assets not owned by the company, reflected as a distinct item in capital work-in-progress, pending completion, is thereafter shown as a distinct item in fixed assets.

### 3.0 MANDATORY SPARES

- 3.1 Mandatory spares in the nature of sub-station equipments/capital spares i.e. stand-by/service/rotational equipment and unit assemblies, either procured along with the equipments or subsequently, are capitalised

and depreciation charged as per relevant rates. Mandatory spares of consumable nature and transmission line items are treated as inventory after commissioning of the line.

### 4.0 TREATMENT OF EXPENDITURE DURING CONSTRUCTION

- 4.1
  - i) Corporate Office expenses, chargeable to Revenue, are allocated to RLDCs in the proportion the RLDC O&M expenses bears to the O&M expenditure of the Corporation (excluding Corporate office expenses) for the current year.
  - ii) Expenses of Corporate Office, as reduced by the amount allocated to RLDCs, common to operation and construction activities, are allocated to Profit and Loss Account and Incidental Expenditure during Construction in proportion of Transmission Charges to Annual Capital Outlay.
  - iii) Expenses of the projects, common to operation and construction activities, are allocated to Profit and Loss Account and Incidental Expenditure during Construction in proportion of Transmission charges to Accretion to Capital Work-in-Progress.
- 4.2 Incidental Expenditure during Construction (net) including Corporate Office expenses allocated to the projects pro-rata to the annual capital expenditure for the year is apportioned to Capital Work-in-Progress (CWIP) on the basis of accretion there to. Interest during construction is apportioned on the closing balance of Capital Work-in-Progress.
- 4.3 Deposit works/cost plus contracts are accounted for on the basis of statement of account received from the contractors.
- 4.4 Claims for price variation/exchange rate variation in case of contracts are accounted for on acceptance.



## 5.0 CONVERSION OR TRANSLATION OF FOREIGN CURRENCY ITEMS

Foreign Currency loans / deposits / liabilities are translated / converted with reference to the rates of exchange ruling at the year-end. Difference is transferred to Capital Work-in-Progress/Fixed Assets in case of Capital Assets and is charged off to revenue, in the case of Current Assets.

## 6.0 VALUATION OF INVENTORIES

- 6.1 Inventories, other than scrap, are valued at cost on weighted-average basis.
- 6.2 Steel scrap and conductor scrap are valued at estimated realisable value or book value, whichever is less. Other scrap is accounted for as and when sold .

## 7. RECOGNITION OF INCOME

- 7.1. Transmission charges are accounted for based on tariff rates notified by Government of India under the Electricity (Supply) Act, 1948. In case of transmission projects where tariff has not been notified, transmission charges are billed as per Bulk Power Transmission Agreements or as decided by the concerned Regional Electricity Boards or on norms and parameters followed by Government of India for fixation of tariff.
- 7.2. Sale of power purchased from Chukha Hydel Power Corp. Ltd., Bhutan, is accounted for on the basis of power tariff as notified by Government of India from time to time.
- 7.3 The surcharge recoverable from debtors is not treated as income due to uncertainty of its realisation and is, therefore, accounted for on receipt basis.
- 7.4 Liquidated damages/warranty claims and interest on advances to suppliers are not treated as income due to uncertainty of realisation, and are, therefore, accounted for on receipt/ acceptance.
- 7.5 Income from Consultancy/Contract Services

is accounted for on the basis of actual progress/technical assessment of work executed, except in cases where contracts provide otherwise.

- 7.6 The Incentive/Disincentive is accounted for based on tariff notification wherever availability is certified by the respective Regional Electricity Boards, as required vide MOP letter No. F No. 2/3/Powergrid/Tariff / 98 Dtd. 04.02.99

## 8. EXPENDITURE

- 8.1 a) Depreciation is provided on straight-line method as per rates laid down under the Electricity (Supply) Act, 1948. In respect of assets, where rates have not been laid down under the aforesaid Act, depreciation is provided on straight-line method as per rates prescribed under the Income Tax Act, 1961, except in case of computers and peripherals, where the rates as assessed by the Company are adopted.
- b) Depreciation is provided from the year following the year in which the assets become available for use, in accordance with the Electricity (Supply) Act, 1948.
- c) Where the cost of depreciable asset has undergone a change during the year due to increase/decrease in long term liabilities on account of exchange fluctuation, price adjustment, change in duties or similar factors, the unamortized balance of such asset is depreciated prospectively over the residual life determined on the basis of the rate of depreciation.
- d) Capital expenditure on assets not owned by the company is amortized over a period of 4 years from the year following the year in which the first line/sub-station of the project comes into commercial operation and thereafter from the year following the year in which the relevant assets are completed and become available for use.

- 8.2 In the case of assets of National Thermal Power Corporation Limited (NTPC) National Hydro-electric Power Corporation Limited (NHPC), North-Eastern Electric Power Corporation Limited (NEEPCO), Neyveli Lignite Corporation Limited (NLC) transferred w.e.f. 01.04.92, Jammu and Kashmir Lines w.e.f. 01.04.93, and Tehri Hydro Development Corporation Limited (THDC) w.e.f. 01.08.93, depreciation is charged based on Gross Block as indicated in transferor's books with necessary adjustments so that the life of the assets as laid down under Electricity (Supply) Act, 1948 is maintained.
- 8.3 Plant and Machinery, Loose Tools and items of scientific appliances, included under different heads of assets, costing 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.
- 8.4 Insurance reserve is created @ 0.1% on gross value of Fixed Assets as at the close of the year in respect of future losses which may arise from uninsured risks except for machinery breakdown for valve halls of HVDC/Bi Pole Station and fire risk for HVDC equipments and SVC sub-stations.
- 8.5 Expenses on Training and Recruitment, Research and Development are charged to revenue.
- 8.6 Pre-paid/prior-period items upto Rs. 100000/- are accounted to natural heads of account.
- 8.7 Bond issue expenses / front-end fees (not covered under the loan agreements) are amortised over the tenure of bonds/loans.

## **9. INVESTMENTS**

Investments are carried at cost.

## **10. TREATMENT OR RETIREMENT BENEFITS**

The liability for gratuity, leave-encashment, and post retirement medical benefits of employees is accounted for on actuarial valuation.

**Balance Sheet &  
Profit and Loss Account**  
**Balance Sheet &  
Profit and Loss Account**  
**Balance Sheet &  
Profit and Loss Account**

## SCHEDULES

### SCHEDULE 1 - CAPITAL

	(Rupees in Lacs)	
	As At 31st March, 2000	
	As At 31st March, 1999	
<b>AUTHORISED</b>		
5,00,00,000 (Previous year 5,00,00,000) equity shares of Rs. 1000/- each.	500000	<b>500000</b>
<b>ISSUED, SUBSCRIBED AND PAID-UP</b>		
288,86,540 (Prev. Year 288,36,540) equity shares of Rs. 1000/- each fully paid up	288865	<b>288365</b>
Share Capital Deposit	16089	<b>15789</b>
	<u>304954</u>	<u><b>304154</b></u>

### SCHEDULE 2 - RESERVE AND SURPLUS

	(Rupees in Lacs)			
	As At 31st March, 1999	Additions	Deductions	As At 31st March, 2000
Capital Reserve	11206			11206
Grants in aid	29664		2502	27162
Insurance Reserve	1325	925	51	2199
General Reserve	152500	47500		200000
Bonds Redemption Reserve	32791	12115		44906
	<b>227486</b>	60540	2553	285473
Surplus as per Profit & Loss Account	<b>5443</b>			3696
	<u><b>232929</b></u>			<u>289169</u>

### SCHEDULE 3 - LOAN FUNDS

	(Rupees in Lacs)	
	As At 31st March, 2000	As At 31st March, 1999
<b>SECURED LOANS</b>		
Cash Credit/Working Capital Demand Loan (Secured by hypothecation of stores, spares, book debts and other current assets)	748	<b>602</b>
<b>BONDS I SERIES</b>		
9% Tax-Free 10 years Secured Redeemable non-cumulative non-convertible Bonds of Rs 1000/- each redeemable at par on 10th March, 2002 Secured by equitable mortgage of immovable properties and hypothecation of movable properties of Korba & Singrauli Transmission System	3900	3900
	3900	<b>3900</b>
<b>BONDS III SERIES</b>		
a. 13.5% Taxable 7 years Secured Redeemable non-cumulative non-convertible Bonds of Rs 1000/- each redeemable at par on 28th February, 2002	1600	1600
b. 9.75% Tax free 7 years Secured Redeemable non-cumulative non-convertible Bonds of Rs 1000/- each redeemable at par on 28th October, 2001	10000	10000
c. 16.25% Taxable 5 years Secured Redeemable	13400	13400

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

(Rupees in Lacs)

	As At 31st March, 2000	As At 31st March, 1999
non-cumulative non-convertible Bonds of Rs.1000/- each redeemable at par on 1st September, 2000. Secured by equitable mortgage of immovable properties and hypothecation of movable properties of Auriya & Moga Bhiwani Transmission System. In case of above 16.25% Bonds further additionally secured by equitable mortgage of immovable properties and hypothecation of movable property of CTP-I Transmission System(Except Vijaywada Sub-Station)	25000	<b>25000</b>
<b>BONDS IV SERIES</b>		
a. 17% Taxable 5 years Secured Redeemable non-cumulative non-convertible Bonds of Rs.1000/- each redeemable at par on 8th January, 2001	10686	10686
b. 17.5% Taxable 5 years Secured Redeemable non-cumulative non-convertible Bonds of Rs.1000/- each redeemable at par on 29th March, 2001	3626	3626
c. 17.75% Taxable 5 years Secured Redeemable non-cumulative non-convertible Bonds of Rs.1000/- each redeemable at par on 16th July, 2001	20688	20688
Secured by equitable mortgage of immovable properties and hypothecation of movable properties of Doyang and Farakka Transmission System and Anta Transmission Line	35000	<b>35000</b>
<b>BONDS V SERIES</b>		
15.75% 5 years Taxable Secured Redeemable non-cumulative non-convertible Bonds of Rs.1000/- each redeemable at par on 24th February, 2002	20000	<b>20000</b>
Secured by hypothecation of movable properties and equitable mortgage of immovable properties of Chamera-Moga Transmission System		
<b>BONDS VI SERIES</b>		
13% Taxable Secured Redeemable non-cumulative non-convertible Bonds of Rs.1000/-each redeemable at par in 10(ten) annual equal installments from 6th December, 2002	10000	<b>10000</b>
Secured by equitable mortgage of immovable properties & hypothecation of movable properties of Gandhar Stage-I Transmission System		
<b>BONDS VII SERIES</b>		
13.5% Taxable Secured Redeemable non-cumulative non-convertible Bonds of Rs.1000/-each redeemable at	20000	

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

(Rupees in Lacs)

	As At 31st March, 2000	As At 31st March, 1999
b. Natexis Banque (Credit National), France	10230	11101
c. Credit Agricole Indosuez (Banque Indosuez), France	7787	9577
d. Skandinorviska Enskilda Banken II, Sweden		3407
e. Asian Development Bank	75946	63858
f. Industrial Bank of Japan and Nippon Life Insurance		4554
g. Syndicated Loan from Industrial Bank of Japan & other Japanese Banks / Financial Institutions	4749	11600
h. Overseas Economic Corporation Fund	1287	141
i. European Investment Bank	3347	1210
	<u>122519</u>	<b>126994</b>
PENDING FINALISATION OF TRIPARTITE AGREEMENT/BACK TO BACK AGREEMENT AMOUNT PAYABLE TO GOVERNMENT OF INDIA ON ACCOUNT OF		
<b>A. NTPC Purchase Consideration</b>		
<b>1. Loans from</b>		
a. Syndicated loan from Industrial Bank, Japan	13188	11251
b. Syndicated loan from Sumitomo Bank	8788	10001
<b>2. Bonds issued by NTPC</b>	<u>802</u>	10729
	22778	<b>31981</b>
<b>B. NHPC Purchase Consideration</b>		
a. Export Development Corporation, Canada	2119	2749
b. Bonds issued by NHPC	<u>130</u>	2374
	2249	<b>5123</b>
C. NLC Purchase Consideration		
Bonds issued by NLC		<b>2201</b>
<b>Total Unsecured Loans</b>	375598	<b>358425</b>
<b>Grand Total (Secured + Unsecured)</b>	<u>731437</u>	<u><b>653108</b></u>

**Schedule 4A - FIXED ASSETS - TRANSMISSION LINES**

(Rupees in Lacs)

Description	Gross Block			Depreciation			Net Block			
	As At 31/03/99	Additions during the year	Adjustments during the year	As At 31/03/2000	As At 31/03/99	Additions during the year	Adjustments during the year	As At 31/03/2000	As At 31/03/2000	As At 31/03/99
<b>LAND (Including Development)</b>										
Freehold	130			130					130	130
Leasehold	29	8		37		1		1	36	29
Roads bridges culverts & helipads	1			1					1	1
<b>BUILDINGS</b>										
Others	4			4	1			1	3	3
Temp. erection	9	1		10	8			8	2	1
Plant&Machinery	499687	159252	-6003	664942	107817	27863	-470	136150	528792	391870
Constr.and Workshop equip.	685	13	97	601	131	46	9	168	433	554
Vehicles	8		2	6	5	1	2	4	2	3
<b>TOTAL (A)</b>	<b>500553</b>	<b>159274</b>	<b>-5904</b>	<b>665731</b>	<b>107962</b>	<b>27911</b>	<b>-459</b>	<b>136332</b>	<b>529399</b>	<b>392591</b>

**Schedule 4F - FIXED ASSETS - RLDC**

(Rupees in Lacs)

Description	Gross Block				Depreciation				Net Block	
	As At	Additions	Adjustments	As At	As At	Additions	Adjustments	As At	As At	As At
	31/03/99	during the year	during the year	31/03/2000	31/03/99	during the year	during the year	31/03/2000	31/03/2000	31/03/99
<b>BUILDINGS</b>										
Temp Erection	10			10	7	1		8	2	3
Plant & Machinery	28			28	9	3		12	16	19
Constru and Workshop equip.	1			1					1	1
Vehicles	2			2	1			1	1	1
Furniture Fixture & Other equip.	96	20	2	114	26	12		38	76	70
EDP & WP Machines	210	21		231	42	28		70	161	168
Laboratory and Workshop Equip.	10			10	3	1		4	6	7
<b>Total (F)</b>	<b>357</b>	<b>41</b>	<b>2</b>	<b>396</b>	<b>88</b>	<b>45</b>		<b>133</b>	<b>263</b>	<b>269</b>

**Schedule 4 - FIXED ASSETS**

(Rupees in Lacs)

Description	Gross Block				Depreciation				Net Block	
	As At	Additions	Adjustments	As At	As At	Additions	Adjustments	As At	As At	As At
	31/03/99	during the year	during the year	31/03/2000	31/03/99	during the year	during the year	31/03/2000	31/03/2000	31/03/99
<b>LAND(Including Development)</b>										
Freehold	7166	7166	149	14183					14183	7166
Leasehold	2252	80	245	2087	123	22	8	137	1950	2129
Unclassified	18			18					18	18
Roads bridges culverts & helipads	3034	398	-21	3453	442	94		536	2917	2592
<b>BUILDING</b>										
Main Plant	6139	1023		7162	1387	384	16	1755	5407	4752
Others	14917	1228	107	16038	2176	451	1	2626	13412	12741
Temp.erection	422	33		455	352	14		366	89	70
Water Supply Drain & Sewerage	2087	283		2370	363	73		436	1934	1724
<b>Plant&amp;Machinery</b>	<b>840014</b>	<b>240548</b>	<b>-9080</b>	<b>1089642</b>	<b>208511</b>	<b>56019</b>	<b>-1650</b>	<b>266180</b>	<b>823462</b>	<b>631503</b>
Constru.and workshop equip.	1138	24	99	1063	337	82	9	410	653	801
Electrical Installation	1485	118	14	1589	632	110	-1	743	846	853
Vehicles	321	4	2	323	237	20	2	255	68	84
Aircraft/Aero engines Boats	2			2	1			1	1	1
<b>Furniture fixture &amp; Other equip.</b>	<b>2881</b>	<b>239</b>	<b>12</b>	<b>3108</b>	<b>1308</b>	<b>306</b>	<b>7</b>	<b>1607</b>	<b>1501</b>	<b>1573</b>
<b>EDP &amp; WP Machines</b>	<b>1609</b>	<b>186</b>	<b>1</b>	<b>1794</b>	<b>660</b>	<b>195</b>		<b>855</b>	<b>939</b>	<b>949</b>
Laboratory and Workshop Equip.	1426	86	1	1511	898	129		1027	484	528
Hospital Equip.	1			1	1			1		
School Equip.	3			3	1			1	2	2
Capital Exp. on Assets not owned by the Company	153			153	102	26		128	25	51
<b>Grand Total</b>	<b>885068</b>	<b>251416</b>	<b>-8471</b>	<b>1144955</b>	<b>217531</b>	<b>57925</b>	<b>-1608</b>	<b>277064</b>	<b>867891</b>	<b>667537</b>
Previous year	<b>809560</b>	<b>59103</b>	<b>-16405</b>	<b>885068</b>	<b>165348</b>	<b>52288</b>	<b>105</b>	<b>217531</b>	<b>667537</b>	



**Schedule 5A - CAPITAL WORK IN PROGRESS - TRANSMISSION LINES**

(Rupees in lacs)

Description	Balance as at 31/03/99	Additions by Transfer of Assets	Additions during the year	Adjustments	Capitalised during the year	Balance as at 31/03/2000
<b>PLANT &amp; MACHINERY</b> (including associated civil works)						
a. On own A/C & on supply- cum-erection contract	236758		88350	-2417	155717	171808
Consultancy & Supervision Charges	4203		751	2019	653	2282
Difference in Exchange on foreign Loans	873		3681	2288	1730	536
<b>Total (A)</b>	<b>241834</b>		<b>92782</b>	<b>1890</b>	<b>158100</b>	<b>174626</b>

**Schedule 5B - CAPITAL WORK IN PROGRESS - SUBSTATIONS**

(Rupees in lacs)

Description	Balance as at 31/03/99	Additions by Transfer of Assets	Additions during the year	Adjustments	Capitalised during the year	Balance as at 31/03/2000
Development of land	267		152	-15	170	264
Roads bridges & culverts & helipads	411		420	-3	354	480
Buildings (others)	1471		746	21	1098	1098
Temporary erection	22		20	14	16	12
Water supply drainage and sewerage	28		146	-106	220	60
<b>PLANT &amp; MACHINERY</b> (including associated civil works)						
a. On own account & on supply-cum-erection contract	74445		30722	-510	80101	25576
b. Others	172			172		
Electrical installations	60		68	-3	81	50
Furniture fixtures & other office equip.	109		14	3	4	116
Consultancy & Supervision Charges	1515		390	10	4	1891
Difference in Exchange on foreign Loans	3482		8421	9261	2230	412
<b>TOTAL (B)</b>	<b>81982</b>		<b>41099</b>	<b>8844</b>	<b>84278</b>	<b>29959</b>

## Schedule 6 - CONSTRUCTION STORES AND ADVANCES

(Rupees in Lacs)

	RLDC	Transmission & Others	As At 31st March, 2000	As At 31st March, 1999
<b>Construction Stores (at cost)</b> (As certified by the management)				
Steel		631	631	1303
Cement		48	48	54
Others	208	83373	83581	76193
	208	84052	84260	77550
<b>Less</b> Provision for Shortages and obsolete material		269	269	938
	208	83783	83991	<b>76612</b>
<b>Advances for Capital Expenditure</b>				
Secured		26	26	24
Unsecured considered good against Bank guarantees				
a. Against Bank Guarantees		28064	28064	14848
b. Others		3120	3120	11841
Considered doubtful		77	77	77
		31261	31261	26766
<b>Less</b> Provision for Bad & Doubtful Advances		77	77	77
		31184	31184	26689
		31210	31210	<b>26713</b>
	208	114993	115201	<b>103325</b>
Construction Stores includes Material in transit under inspection and with contractors		79724	79724	68852

## Schedule 7 - INVESTMENTS

(Rupees in Lacs)

	As At 31st March, 2000	As At 31st March, 1999
<b>Unquoted</b>		
<b>I. Trade Investments (At cost)</b>		
7 years 13.70% MPEB Bonds - 99, Interest Semi-Annually, 2718 Bonds of Rs. 1,00,000/- each fully paid up	2718	—
7 years 13.60% APTRANSCO Bonds (Series - 1/99), Interest Semi Annually, 8830 Bonds of Rs. 1,00,000/- each fully paid up.	8830	—
7 years 13% APTRANSCO Bonds (Series - 1/2000), Interest Semi Annually, 3299 Bonds of Rs. 1,00,000/- each fully paid up.	3299	—
<b>II. Non-Trade Investments</b>		
30,00,003 Equity Shares of Rs. 10/- each fully paid up of Power Trading Corporation of India Ltd.	300	—
500 Fully paid up shares of Rs 10/- each in Employees Co-op Society Limited Bhadravat (Rs. 5,000/-)	—	—
500 Fully paid up shares of Rs 10/- each in Employees Co-op Society Limited Itarsi (Rs. 5,000/-)	—	—
500 Fully paid up shares of Rs 10/- each in Employees Co-op Society Limited Nagpur (Rs. 5,000/-)	—	—
500 Fully paid up shares of Rs 10/- each in Employees Co-op Society Limited Jabalpur (Rs. 5,000/-)	—	—
500 Fully paid up shares of Rs 10/- each in Powergrid Primary Consumer Co-operative Society Rourkela (Rs. 5,000/-)	—	—
	<u>15147</u>	<u>—</u>

**Schedule 8 - CURRENT ASSETS, LOANS & ADVANCES**

(Rupees in Lacs)

	RLDC	Transmission & Others		As At 31st March, 2000	As At 31st March, 1999
<b>Current Assets</b>					
<b>Inventories</b>					
(Valued at cost as certified by management)					
Loose tools		46	46		37
Consumable stores		40	40		46
Components Spares & other spare parts	1	15670	15671		13479
	1	15756		15757	13562
<b>Less: Provision for Shortages</b>		102		102	96
	1	15654		15655	<b>13466</b>
Inventories includes stores in transit Rs. 2 Lacs. (Previous Year Rs. 12 Lacs)					
<b>Sundry Debtors</b>					
Outstanding					
For a period exceeding Six Months	1461	52939		54400	47723
Other Debts	2629	66610		69239	53551
	4090	119549		123639	<b>101274</b>
<b>Particulars of Sundry Debtors</b>					
Unsecured considered good			31.03.2000	31.03.1999	
Considered doubtful			123639	101274	
<b>Cash &amp; Bank Balances</b>					
Cash, Stamps and Imprest	1	10		11	11
Drafts/Cheques in Hand		1115		1115	2,118
Remittance in transit		326		326	171
Balance with Scheduled Banks on:					
Term Deposits		2787		2787	2771
Current Accounts	30	19205		19235	11407
	31	23443		23474	<b>16478</b>
<b>Other Current Assets</b>					
Term Deposit with Subsidiary of Scheduled Banks		9973		9973	9973
Public Deposit Account with Government of India		471		471	712
Interest accrued	123	2676		2799	2161
Others		26		26	28
	123	13146		13269	<b>12874</b>
<b>Loans And Advances</b>					
<b>Loans To</b>					
Employees	551	8451	9002		7108
Others		60	60		49
	551	8511		9062	7157
<b>Advances</b>					
<b>Advances recoverable in cash or in kind for value to be received From</b>					
Contractors & Suppliers (including Material issued on loan)	4	252	256		209
Employees	18	886	904		810
Claims recoverable		1544	1544		1327
Others	201	2327	2528		1829
	223	5009	5232		4175
<b>Less: Provision for bad and doubtful</b>					
Advances and Claims		454	454		341
	223	4555	4778		3834
Deposits with customs, Port trust and other authorities	18	936	954		1483
Advance Tax Deposit & TDS		13384	13384		6180
	241	18875		19116	11497
	792	27386		28178	<b>18654</b>
	5037	199178		204215	<b>52746</b>
<b>Particulars of Loans and Advances</b>					
Secured				7390	5656
Unsecured considered good				20788	12998
Considered doubtful				454	341
				28632	<b>18995</b>
<b>Less: Provision made</b>				454	<b>341</b>
				28178	<b>18654</b>

**Schedule 17 - PRIOR PERIOD ADJUSTMENTS (NET)**

(Rupees in Lacs)

	RLDC	Transmission & Others	For the Year Ended 31st March, 2000	For the Year Ended 31st March, 1999
<b>INCOME</b>				
Depreciation written back - others		170	170	139
Transmission charges		317	317	132
Reimbursement of RLDC Expenses	3516		3516	
Others		63	63	195
	3516	550	4066	466
<b>EXPENDITURE</b>				
Salary wages allowances & benefits		2	2	9
Power charges		21	21	6
Rates and taxes				3
Depreciation		1818	1818	53
Transmission charges written back on account of revision of tariff		1484	1484	1362
Others	4	547	551	596
	4	3872	3876	2029
Prior period expenditure/income (Net)	-3512	3322	-190	1563

## SCHEDULE - 18 NOTES ON ACCOUNTS

- 1.0 The Transmission System situated in Jammu and Kashmir associated with National Hydroelectric Power Corporation Ltd. (NHPC) has been taken over w.e.f. 01.04.93 as mutually agreed upon by NHPC and the company but regularisation is pending for completion of legal formalities.
- 2.1 a) The Regional Load Despatch Centres (RLDCs) of Central Electricity Authority were transferred to the company (alongwith associated manpower) as per the orders of Ministry of Power, Government of India, from time to time.
- b) The Assets of RLDCs are used by the company pending transfer of ownership and determination of cost of assets so taken over.
- c) A basis of sharing of expenses of RLDCs was proposed, vide Member CEA letter No.10/PG/SHE/GM-97/1618 dt. 15.07.98. Agreement has been arrived at in all the REB forums except EREB for reimbursement of expenses. An amount of Rs. 1194 lacs accrued for the current financial year in respect of such SEBs has been accounted for as "other income" and an amount of Rs. 3516 lacs accrued from the date of taking over of respective RLDCs upto 31/3/1999, has been accounted for as "prior period income".
- d) Based on the petition by the Company for Central Electricity Regulatory Commission (CERC) for reimbursement of RLDC expenditure in respect of Eastern Region constituents, an amount of Rs. 1711 lacs (Rs 1312 Lacs for the period upto 31.3.99 and Rs. 399 lacs for the current year) has been recognised as "other income".
3. a) The land owned by the company has been classified into freehold and leasehold to the extent possible, based on available documentation and the balance has been shown as un-classified.
- b) The conveyancing of title of the freehold land and execution of lease agreement in certain cases (value not ascertained) in favour of the company is pending for completion of legal formalities.
- c) Leasehold land includes Rs. 764 lacs (previous year Rs. 764 lacs) for land acquired in Katwaria Sarai, New Delhi. As the land is acquired on perpetual lease and it does not have a limited useful life, no depreciation has been charged.
- d) Buildings include Rs. 722 lacs (previous year Rs. 722 lacs) for 28 flats at Mumbai, for which registration in favour of the company is pending.
4. Pending reconciliation, materials amounting to Rs. 217 lacs (previous year Rs.981 lacs) in commissioned lines is shown as construction stores lying with contractors. However, an amount of Rs. Nil (previous year Rs. 28 lacs) has been provided during the year for likely shortages.
5. Fixed assets include company's share of Rs. 562 lacs (previous year Rs. 562 lacs) in common services and facilities of 400 KV sub-stations of Uttar Pradesh State Electricity Board (UPSEB) and Rajasthan State Electricity Board (RSEB) pending execution of formal agreements for joint ownership.
6. Materials in transit/under inspection/with contractors are subject to confirmation/reconciliation and consequential adjustments.
7. During the year :
- i) An amount of Rs 11962 lacs (previous year Rs. 20914 lacs) being exchange rate difference in respect of Fixed Assets and Capital Work in Progress has been adjusted in the carrying amount.
- ii) An amount of Rs. 96 lacs (previous years Rs. 270 lacs) being exchange rate difference on Current Assets has been accounted for in the Profit and Loss Account in 'Other Finance Charges'.
8. a) Balances appearing against loans, advances, sundry debtors, and sundry creditors are subject to confirmation/reconciliation and consequential adjustments.
- b) In the opinion of the management, the value of current assets, loans and advances, on realisation in the ordinary course of business, will not be less than the value at which these are stated in the Balance Sheet.
9. **I. CANBANK FINANCIAL SERVICES LIMITED (CANFINA)**
- a) During the year 1991-92, pursuant to a contract with CANFINA, the company allotted Bonds worth Rs. 12000 lacs and placed a deposit of Rs. 11080 lacs with them (net of front-end fee of Rs. 920

lacs) as a condition of the same contract. CANFINA defaulted on deposit repayment after making repayment of Rs. 1680 lacs. Pursuant to such default in 1993-94, the company initially forfeited bonds worth Rs. 10320 lacs against deposit of Rs. 9400 lacs and write-back of front-end fee of Rs.920 lacs. Subsequently, during 1994-95, the company restored deposits of Rs. 9400 lacs by credit to Capital Reserve in accordance with legal advice.

- b) During 1998-99, on maturity of Rs. 1680 lacs worth of bonds not forfeited, the company repaid Rs. 103.34 lacs to third parties duly recognised by the company as holders, and in exercise of its lien on balance Rs. 1576.66 lacs, set it off against deposits with CANFINA.
- c) The company has neither accounted for interest income of Rs. 939 lacs (previous year Rs. 1117 lacs), cumulative Rs. 8892 lacs on deposit with CANFINA, nor has accounted for interest of Rs. Nil (previous year Rs. 252 lacs), cumulative Rs. 1876 lacs, payable on bonds worth Rs. 1576.66 lacs which were set-off against deposit with CANFINA in the year 1998-99.
- d) Matters referred to in para (a) above are pending for settlement with the High Power Committee on Disputes, Govt. of India.

## **II. ANDHRA BANK FINANCIAL SERVICES LTD. (ABFSL)**

- e) During the year 1991-92, pursuant to a contract with ABFSL, the company allotted Bonds worth Rs. 2500 lacs and placed a deposit of Rs. 2150 lacs with them (net of front-end fee of Rs. 350 lacs) as a condition of the same contract. ABFSL defaulted on deposit repayment. Pursuant to such default, during 1993-94, the company forfeited bonds worth Rs. 2100 lacs by adjustment of deposit of Rs. 1806 lacs and write-back of front-end fee of Rs. 294 lacs. Subsequently, during 1994-95, the company restored deposit of Rs. 1806 lacs by credit to Capital Reserve in accordance with legal advice.
  - f) The company has neither accounted for interest income of Rs. 296 lacs (previous year Rs. 296 lacs), cumulative Rs. 2384 lacs, on deposit with ABFSL, nor has accounted for interest of Rs. 36 lacs (previous year Rs. 36 lacs), cumulative Rs. 288 lacs, payable on bonds worth Rs. 400 lacs held by ABFSL.
  - g) Matters referred to in para (e) above are pending for settlement with the High Power Committee on Disputes, Govt. of India.
10. Share Capital Deposit includes Rs. 15789 lacs (previous year Rs. 15789 lacs) representing the value of shares to be allotted against purchase consideration payable to Government of India for lines situated in Tamil Nadu (NLC) and Jammu and Kashmir.
11. Estimated amount of capital commitments is Rs. 91864 lacs (previous year Rs. 117230 lacs).
12. No payment is overdue for the purchases made from small scale/ancillary industries. Hence, no provision of interest is made in the accounts.
13. 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 not ascertainable.
14. a) Pending final Notification of tariff in respect of some Transmission Lines, the Transmission charges including recovery on account of foreign exchange variation has been accounted for provisionally, as per the norms and factors defined in notification no. F:No.2/3/Powergrid/Tariff/97 dated 16.12.97. Transmission Income of Rs. 2822 lacs in respect of some of the Transmission lines commissioned during the year has been accounted for, pending CERC notifications.
- b) Transmission Tariff for NER Lines has been accounted for at the UCPTT rate upto 35 paise per unit as frozen in 43rd NEREB meeting. As agreed in the meeting with NEREB constituents, an adjustment bill of Rs. 946 lacs is not accounted for.
- c) Impact of decrease in the interest rates due to swapping of foreign currency loans with lower rates of interest, for the year, amounting to Rs. 519 lacs (Previous year Rs. 689 lacs) has been considered in the Transmission Income.
- d) Inclusion of cost of OPGW in the project cost of Vindhayachal Additional and Ramagundam-Hyderabad Transmission Lines has not been agreed to by SEBs. Reduction of Tariff, due to exclusion

of differential cost of OPGW and Earthwire, amounting to Rs. 791 lacs for the year and Rs. 1023 lacs for 1997-98 and 1998-99, as prior period item, has been accounted for.

15. Purchase of power is net of subsidy of Rs. 3,227 lacs received from Ministry of External Affairs.
16. During the year, Transmission Corporation of Andhra Pradesh (APTRANSCO) has issued bonds for the outstanding dues, including Rs. 2066 lacs towards surcharge. As per Accounting Policy No. 7.3, this amount has been accounted for as other income.
17. Some of the SEBs have not reimbursed the Income Tax recovery billed. Considering this aspect as significant uncertainty of recovery, Income-tax recovery billed to such SEB's amounting to Rs. 5,096 lacs (Grossed up Rs. 5,762 lacs) [previous year Rs. 4,053 lacs (grossed up Rs. 4,527 lacs)] has not been accounted for.
18. During the year, the company has changed certain accounting policies. The consequential impact of the same on the accounts for the year is as under :-
  - a) Corporate Office expenses, chargeable to Revenue, which were hitherto not being allocated to RLDCs, are henceforth allocated to RLDCs in the proportion the RLDC O & M expenses bears to total O & M expenses of the Company (excluding Corporate Office expenses).  
This change has resulted in decrease in profit by Rs. 116 Lacs, and decrease in Capital Work-in-progress by the same amount.
  - b) Pre-paid/prior-period items, which were hitherto accounted upto Rs. 5,000/- to natural head of account are henceforth accounted upto Rs. 1,00,000/-.  
This change has resulted in decrease in profit for the year by Rs. 5 lacs in respect of prepaid items and decrease in prior period expenditure by Rs. 33 lacs.
19. Pay revision for Executives, Supervisors and Workers is due w.e.f. 01.01.97. Pending final settlement, provision of Rs. 3,157 lacs (previous year Rs. 2,500 lacs) has been made during the year.
20. Other Income includes Rs. 2,502 lacs (previous year Rs. 2,502 lacs) being the amount transferred from Capital Reserve (Grants-in-Aid) as per Accounting Policy No.1.0.
21.
  - a) Consequent upon waiver of guarantee fee payable to Government of India in respect of pre-1989 loans (ECBs only) vide Ministry of Power letter dated 6/10/99, provision of Rs. 3,731 lacs, made in 1997-98, has been written back.
  - b) Provision of Rs. 865 lacs, made in earlier years in respect of shortage in construction materials, has been written back by Capitalisation of Rs. 701 lacs, by debiting Rs. 160 lacs as recoverable from contractors, which is fully secured by bank guarantees and retention money and by debiting the balance amount of Rs. 4 lacs to outstanding liabilities.
22. Tariff Notifications provide for availability based incentive to be recovered from the SEBs. In the absence of availability being certified by the REBs, as required in MOP letter no. F. No. 2/3/powergrid/Tariff/98 Dt. 4/2/99 no amount has been accounted for.
23. Income from Consultancy, Project Management and Supervision fees include Rs. 225 lacs (previous year Rs. 202 lacs) for management fee for Mandola sub-station and GRIDCO for which the agreement is yet to be finalised with SEBs.
24. Consultancy expenditure of Rs. 255 lacs incurred for telecom business has been included under Miscellaneous Expenditure to the extent not written off or adjusted which will be capitalised on approval of the said business.
25. Balance with schedule Banks on current accounts include Rs. 7,317 lacs being the amount of cheques received from Power Development Department, Jammu & Kashmir (J&K) and sent for collection to the J&K treasury, which have not been realised till date.
26.
  - a) Figures have been rounded off to nearest rupees in lacs.
  - b) Previous year figures have been regrouped/rearranged wherever necessary.
27.
  - a) Employees remuneration and benefits include the following for the Directors including Chairman and Managing Director.

	Current Year	Previous Year
Salaries and Allowances	19	26*
Contribution to Provident Fund and other Funds. Gratuity and Group Insurance	3	1
Other benefits	3	5

\* Including provision for pay revision arrears of Rs. 14 lacs w.e.f 1.1.97.

b) In addition to the above remuneration, the Whole time Directors have been allowed to use the staff car (including for private journeys) on payment of Rs. 600/- p.m. 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 and Sale of Power**

	Current Year	Previous Year
a) Purchase of Power (Million Units)	1507	1331
b) Sale of Power (Million Units)	1507	1316

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

	Current Year	Previous Year
i) Capital goods	17473	6352
ii) Spare Parts	472	156

**b) Expenditure in foreign currency :**

	Current Year	Previous Year
i) Professional and Consultancy fees	793	643
ii) Interest	15864	13949
iii) Others	2855	503

**c) Value of components, stores and spare parts consumed :**

	%age	Current Year	%age	Previous Year
i) Imported	0.18	1	20	130
ii) Indigenous (Including Fuel)	99.82	543	80	506

**d) Earnings in foreign exchange :**

	Current Year	Previous Year
i) Interest	436	392
ii) Others	313	150

**30. Additional information as required under part IV of schedule VI of the companies Act, 1956, as certified by the Management.**

**i) Registration Details**

Registration No.	55-38121
State Code	55
Balance Sheet Date	31st March 2000

**ii) Capital raised during the year**

	Rs. in lacs
Public Issue	-
Right Issue	-
Private Placement (Issued to Govt. of India)	800 (including share capital deposit of Rs. 300 lacs)
Bonus Issue	-



**iii) Position of mobilisation and deployment of funds**

	Rs. in lacs
Total liabilities	1325560
Total Assets	1325560
<b>Sources of funds</b>	
Paid up capital	304954
Reserves and surplus	289169
Secured Loans	355839
Unsecured Loans	375598
<b>Application of Funds</b>	
Net Fixed Assets	867891
Capital Work-in-progress (including Construction, Stores and advance)	325116
Investment	15147
Net Current Assets	116579
Miscellaneous Expenditure	827

**iv) Performance of Company**

	Rs. in lacs
Turnover/Income	196730
Other Income (including consultancy and Transfer from Grants in Aid)	15657
Total expenditure	144323
Profit before Tax	68064
Profit after tax	60088
Earning per share (Rs.)	197.04
Dividend Amount	2000

**v) Generic names of Principal product/service of company**

Item code No. N.A.

Product Description : Transmission and sale of power

**(Divya Tandon)**  
Company Secretary

**(Dr. V.K. Garg)**  
Director (Finance)

**(R.P. Singh)**  
Chairman & Managing Director

**As per our report of even date**

For **Hingorani M. & Co.**  
Chartered Accountants

For **Venugopal & Chenoy**  
Chartered Accountants

For **D.P. Sen & Co.**  
Chartered Accountants

**(Pardeep Kumar)**  
Partner

**(P.V. Sri Hari)**  
Partner

**(A.K. Sinha)**  
Partner

Place : Mumbai  
Date : 12th June, 2000

## ANNEXTURE TO THE AUDITORS' REPORT

### ANNEXURE REFERRED TO IN PARAGRAPH 2.00 OF OUR REPORT OF EVEN DATE

- i) The Company has generally maintained record of Fixed Assets. However, such record do not, in all cases give, full particulars including location of Fixed Assets. The Assets are not comprehensively numbered and identified. The Assets have been physically verified by external agencies at reasonable intervals and in a number of cases, discrepancies noticed on such verification have not been reconciled /adjusted. The materiality of discrepancies, if any, between book records and physical inventory could not be ascertained in the absence of proper book records.
- ii) None of Fixed assets of the company has been revalued during the year.
- iii) Physical verification, of stores and spares is conducted at reasonable intervals by external agencies, except for materials lying with contractors/under inspection.
- iv) The procedure of physical verification of stores followed by the company, is reasonable and adequate in relation to the size of the company and the nature of its business.
- v) Material discrepancies noticed on physical verification in the stock of stores and spares have been properly dealt with in the accounts, except materials lying with contractors/ under inspection, where verification is not undertaken.
- vi) In our opinion and on the basis of our examination of the stock records, the valuation of stock is fair and proper in accordance with the normally accepted accounting principles, and is on the same basis as in the earlier years.
- vii) The company has not taken any loans from companies, firms or other parties listed in the register maintained under section 301 of the Companies Act, 1956. We were informed that there are no Companies under the same management.
- viii) The Company has not granted any loan to parties listed in the register maintained under section 301 of the Companies Act, 1956.
- ix) The company has given deposits of Rs 11080 lacs to Canbank Financial Services Ltd and Rs. 2150 to Andhra Bank Financial Services Ltd, who have not repaid the principal amount and interest thereon. The company has informed us that they are taking reasonable steps for recovery of principal and interest. In case of other loans and advances, in the nature of loans, given by the company, the repayment of loan and interest, wherever applicable, are generally as stipulated.
- x) In our opinion and according to the information and explanations given to us, there are adequate internal control procedures, commensurate with the size of the company and the nature of its business, with regard to purchase of stores, components, plant and machinery, equipments and other assets, and for the sale of power.
- xi) According to the information and explanation given to us, there are no transactions of purchase/sale of goods, materials and services made in pursuance of contracts or arrangements entered in the register maintained under section 301 of the Companies Act, 1956, aggregating during the year to Rs 50,000/- (Rupees fifty thousand only) or more, in respect of each party.
- xii) The Company has identified unservicable/damaged construction stores in some cases and made provision of Rs.188 lacs during the year.
- xiii) Since Company has not accepted any deposit from the public, the question of compliance with the guidelines issued by the Reserve Bank of India and the provision of section 58-A of Companies Act, 1956, and rules framed thereunder, does not arise.

- xiv) The Company does not have any by-product. In our opinion, reasonable records have been maintained by the Company for sale and disposal of scrap.
- xv) The company has a system of conducting Internal Audit by external agencies. In our opinion, the scope, terms of reference and coverage requires to be further strengthened to render such system commensurate with the size and nature of its business. The follow up at present level of audit appears adequate.
- xvi) The Central Government has not prescribed maintenance of cost records under section 209(1)(d) of the Companies Act, 1956, in respect of the company.
- xvii) The Company is regular in depositing Provident Fund dues with the appropriate authority. As informed, the provisions of the Employees State Insurance Act are not applicable to the Company.
- xviii) 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 March 31,2000, for a period of more than six months from the date they became payable.
- xix) According to information made available to us, no personal expenses have been charged to revenue account, other than those payable under contractual obligations or in accordance with generally accepted business practices.
- xx) The company is not a sick industrial company as defined in section 3(1)(o) of the Sick Industrial Companies (Special Provisions) Act , 1985.
- xxi) In regard to the Company's activities relating to Transmission of power, consultancy, project management, supervision and contracts:-
  - a) The Company has a reasonable system of recording receipts, issue and consumption of materials, stores, and allocating materials consumed to the relative jobs (including construction of infrastructure for providing transmission services) commensurate with the size and nature of its business.
  - b) The Company has reasonable system of allocation of man hours consumed, to respective activities.
  - c) The Company has a reasonable system of authorisation at proper levels, and adequate system of internal control on issue and allocation of stores and labour to jobs.
  - d) The Company has a reasonable system of recording receipts, issues and consumption of materials and stores, commensurate with the size and the nature of its business.
- xxii) In regard to the company's activities relating to the trading, since the company does not deal with tangible goods, the question of determination of damaged goods does not arise.

For **Hingorani M. & Co.**  
Chartered Accountants

**(Pardeep Kumar)**  
Partner

For **Venugopal & Chenoy**  
Chartered Accountants

**(P.V. Sri Hari)**  
Partner

For **D.P.Sen & Co.**  
Chartered Accountants

**(A.K. Sinha)**  
Partner

Place : Mumbai  
Date : 12th June, 2000

## ANNEXURE TO THE DIRECTORS' REPORT

### ANNEXURE - I

Particulars of Employees pursuant to section 217 (2A) of the Companies Act, 1956 for the year 1999-2000

Sl.No.	Name	Designation	Qualification	Remuneration (Rs.)	Experience (Years)	Date of commencement of Employment	Age (Years)	Last Employment held
<b>Employed for the full year</b>								
1.	Aggarwal A.R.	Executive Director	B.E. (Elect.)	605789	29	19.11.1991	52	NHPC
2.	Aggarwal S.K.	AGM(QA&I)	Ph.D. (Mgmt.Study) BE (Elect.)	755099	27	21.06.1991	46	NTPC
3.	Asthana A.K.	Chief Manager	BE(Civil)	652693	27	16.08.1991	54	NTPC
4.	Bhushan Bhanu	Director (Opern.)	B.Sc.(Engg.Elect.)	854735	34	16.08.1991	56	NTPC
5.	Chowdhary A.K.	Technician	ITI, High School	1124910	21	16.08.1991	40	NTPC
6.	Garg V.K.Dr.	Director (Finance)	Ph.D. (Business Admn.), MBA, MA(Eco.)	716628	27	17.09.1997	52	ONGC
7.	Gupta V.K.	DGM(LD&C)	M.Tech.(C&I), BE(Elect.)	666687	22	16.08.1991	45	NTPC
8.	Gupta B.K.	DGM(QA&I)	B.Sc. (Engg.-Mech.)	622802	30	16.08.1991	51	NTPC
9.	Kumar Binay	Dir.(Pers)	M.A.(Socio.) Hons. PGDIP in IR&W	602046	30	19.05.1992	52	THDC
10.	Kumar Virender	E.D.(MM)	M.Tech.(Str.), B.Tech.	859245	35	16.08.1991	59	NTPC
11.	Madan R.K.	Director (Projects)	B.Sc. (Engg.-Elect.)	1100144	36	19.11.1991	59	NHPC
12.	Mandal J.B.	DGM	B.Tech.(Elect.)	663031	19	16.08.1991	42	NTPC
13.	Mishra B.	DGM	B.Sc.(Engg.), Diploma in Business Mgmt.	671975	20	16.08.1991	44	NTPC
14.	Piplonia R.	Chief Manager	B.E.(Elect.)	675234	20	16.08.1991	42	NTPC
15.	Rath G.K.	Chief Manager	B.Sc.(Engg.)	631231	23	16.08.1991	47	NTPC
16.	Singh R.P.	CMD	M.Sc. (Engg.) Mechanical	1087503	30	21.01.1991	52	NTPC

Notes: 1) 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 fund and other funds. In addition employees are entitled to Gratuity/Group Insurance in accordance with Company's rules.

2.) None of the Employees listed above is related to any Director of the Company.

## ANNEXURE TO THE DIRECTORS' REPORT

### ANNEXURE - II

**PARTICULARS REQUIRED UNDER THE COMPANIES (DISCLOSURE OF PARTICULARS IN THE REPORT OF THE BOARD OF DIRECTORS) RULES, 1999 READ WITH SECTION 217 (1)(e) OF THE COMPANIES ACT, 1956.**

#### A. CONSERVATION OF ENERGY

- a) Energy conservation measures taken and on hand :  
The POWERGRID transmission system is designed in an optimal manner such that the losses in the transmission system are minimised. The various equipment parameters and types are so chosen such that the losses are optimised. Latest techniques/intelligent systems are being introduced in the designs for energy conservation like series compensation and shunt capacitor etc.
- b) Additional investment and proposals, if any, being implemented for reduction of consumption of Energy :  
Energy conservation measures are being adopted to make over all transmission systems more efficient.
- c) Impact of measure at (a) and (b) above for reduction of energy consumption and consequent impact on the cost of production of goods :  
Overall optimisation is achieved as described above.
- d) Total energy consumption and energy consumption per unit of production as per form "A" of the Annexure in respect of industries specified thereto :  
This is not applicable for POWERGRID since it does not fall under any of the industries mentioned in the schedule.

#### B. TECHNOLOGY ABSORPTION

##### RESEARCH & DEVELOPMENT

- i) Installation of FACTS on POWERGRID's Kanpur-Ballabgarh 400 kV line has been taken up with BHEL as R&D project for indigenous development. It is a means to improve the stability and to increase the load carrying capability of the line.
- ii) POWERGRID in association with IIT, Kharagpur is developing a Real Time Digital Stimulator (RTDS) for power system analysis in real time operation.
- iii) POWERGRID has successfully installed and commissioned, in April-May, 1999, 40% series compensation on 220 kV Kishenpur-Pampore D/C line to improve its power transfer capability. This also improves voltage control and reactive power balance & reduce system transmission losses.
- iv) Application of 50 MVAR controlled reactor on 400 kV Jabalpur-Itarsi line is under finalisation. This reactor shall provide regulation of reactive power absorption, as per the system requirement.
- v) POWERGRID has taken up system development of in-house tower & foundation designs for use in transmission line projects. 4 no.  $\pm$  500 kV HVDC, 1 no. 400 kV S/C & 4 nos. 400 kV D/C towers for various wind zones designed & successfully tested. Designs for 22 nos. 400 kV/ S/C & D/C towers in progress.
- vi) POWERGRID has taken up R&D project for vibration measurement on transmission line conductors in association with CPRI.
- vii) POWERGRID has taken initiative for installing wind measuring instruments on towers in critical wind prone areas for first hand information & assessment of wind speeds.
- viii) POWERGRID has taken up preliminary designs for 800 kV D/C transmission line for adoption in future.
- ix) POWERGRID has taken up indigenous development & testing of HVDC and high strength AC disc insulators in association with BHEL & CPRI.
- x) POWERGRID after detailed studies, has taken initiative in increasing the maximum allowable conductor temperature to 85 degree Centigrade from existing 75 degree Centigrade in selected corridors. This would help in enhancing the transfer capacity of transmission line. To start with, POWERGRID has obtained approval for using the same in Tala Transmission system.

#### C. FOREIGN EXCHANGE EARNINGS AND OUTGO

##### FOREIGN EXCHANGE EARNINGS :

		(Rs. in crores)
(i)	Interest	4.36
(ii)	Others	3.13
	<b>Total</b>	<b>7.49</b>

##### FOREIGN EXCHANGE OUTGO :

(i)	Capital goods and spare parts	179.45
(ii)	Professional and Consultancy fee	7.93
(iii)	Interest	158.64
(iv)	Others	28.55
	<b>Total</b>	<b>374.57</b>

iii) Sales	23.75	25.80	30.36
b) Profit after tax to Equity	11.10	14.61	19.70
c) Earnings per share (in Rupees)	111.03	146.12	197.04

#### 5. INVENTORY LEVELS

The inventory levels at the close of the last three years ending 31st March 2000 are as under :

	1997-98	1998-99	1999-2000
	(Rupees in crore)		
Stores, spares and loose tools	135.29	134.66	156.55

#### 6. SUNDRY DEBTORS

The Sundry Debtors and Sales in the last three years ending 31st March 2000 are as follows :

(Rupees in crore)

As on 31st March	Sundry Debtors			Sales including Electricity duty	Percentage of Sundry Debtors to Sales
	Considered good	Considered doubtful	Total		
1998	734.17	3.86	738.03	1419.55	51.99
1999	1012.74	--	1012.74	1722.57	58.79
2000	1236.39	--	1236.39	1979.06	62.47

The age-wise break-up of Sundry Debtors at the end of 1999-2000 is as under :

Debtors outstanding for		Amount (Rupees in crore)
Less than 6 months		692.39
6 months to 1 year		206.96
1 year to 3 years		209.20
More than 3 years		127.84
<b>Total</b>		<u>1236.39</u>

Place : New Delhi  
Dated : 11th August, 2000

(H.S. Narayanan)  
Principal Director of Commercial Audit and  
Ex-officio Member, Audit Board-III,  
New Delhi

## 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 a public utility like our Corporation, the prices of whose service 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 public utility are determined on the basis of costs as indicated by the historical cost-based accounts, they would not cover the 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 profit 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 Current Cost Accounting of 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 :

Plant and Machinery constitute 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. 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, Department of Industrial Policy & Promotion, Ministry of Industry, Govt. of India, and
- (ii) Indices of specific items as circulated by the Indian Electrical and Electronic Manufactures Association.

### 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 rate specified under the Electricity (Supply) Act 1948.

The life 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 the 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 terms.

### **DEPRECIATION ADJUSTMENT**

The depreciation adjustment represent 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 prices 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, unrealised revaluation surplus on fixed assets, adjustment in respect of depreciation and the gearing adjustment.



## CURRENT COST BALANCE SHEET

**AS AT 31st March, 2000**

(Rs. in Lacs)

	As At 31st March, 2000	As At 31st March, 1999
<b>NET ASSETS EMPLOYED</b>		
Gross Block	1863092	1535318
Less : Accumulated Depreciation	540672	400621
Net Block	1322420	1134697
Capital Work-in Progress	278647	388640
Construction Stores and Advances	117260	107593
Investments	15147	
<b>NET CURRENT ASSETS</b>		
Inventories	15790	13686
Other Current Assets	188560	149280
Less : Current Liabilities and Provisions	204350	162966
	87636	71434
Miscellaneous Expenditure (to the extent not written off or adjusted)	116714	91532
	827	675
	1851015	1723137
<b>FINANCED BY SHAREHOLDERS FUNDS</b>		
Share Capital	304954	304154
Current Cost Reserve	554859	559110
Other Reserves and Surplus	259765	206765
	1119578	1070029
<b>LOAN FUNDS</b>		
Secured Loans	355839	294683
Unsecured Loans	375598	358425
	731437	653108
	1851015	1723137

## CURRENT COST PROFIT & LOSS ACCOUNT

**FOR THE YEAR ENDED 31st March, 2000**

(Rs. in Lacs)

	For the year ended 31st March, 2000	For the year ended 31st March, 1999
Profit before Interest and Finance Charges and Taxation (On Historical Cost basis)	110083	87790
Less : Depreciation Adjustment	44027	39525
Current Cost operating Profit	66056	48265
Add : Gearing Adjustment	14623	13361
	80679	61626
Less : Interest and Finance Charges	42019	38087
Provision for Taxation	7976	5261
	49995	43348
Current Cost Profit Attributable to Shareholders	30684	18278

## CASH FLOW STATEMENT

(PURSUANT TO CLAUSE 32 OF THE LISTING AGREEMENT WITH STOCK EXCHANGE)

	For the year Ended 31st March, 2000 (Rs.in Lacs)	For the year Ended 31st March, 1999 (Rs.in Lacs)
Net profit before tax	68064	49703
<b>Adjustment for :</b>		
Depreciation	59411	52028
Amortised Expenditure	178	233
Provisions	324	465
Interest	42019	38087
Operating Profit before Working Capital Changes	169996	140516
<b>Adjustment for :</b>		
Trade and other Receivables	-22365	-27471
Inventories	-2195	24
Trade payables and other liabilities	8226	-6939
Other current assets	-395	1718
Deferred Revenue Expenditure	-330	-473
Cash generated from operations	-17059	-33141
Interest paid	-42019	-38087
Direct taxes paid	-7682	-5704
Net Cash from operating Activities	103236	63584
<b>B. CASH FLOW FROM INVESTING ACTIVITIES</b>		
Purchase of fixed assets	-16279	-7138
Capital work-in-progress	-126059	-177382
Advance for Capital Goods	-11207	44938
Loans and Advances	-1955	-4048
Investments	-15147	0
Net cash used in investing Activities	-170647	-143630
<b>C. CASH FLOW FROM FINANCING ACTIVITIES</b>		
Proceeds from issue of Share Capital	800	500
Proceeds from Long term borrowings	78329	94063
Proceeds from Grants in Aid	-2502	-2778
Dividend paid	-2220	-2200
Net Cash from Financing Activities	74407	89585
<b>D. OTHERS</b>		
Net Increase/Decrease in Cash and Cash equivalents	6996	9539
Cash and cash equivalents (Opening balance)	16478	6939
Cash and cash equivalents (Closing balance)	23474	16478

**NOTE :** Cash and Cash Equivalents consist of Cash in hand and balance with banks.

(Divya Tandon)  
Company Secretary

(Dr. V.K. Garg)  
Director (Finance)

(R.P.Singh)  
(Chairman & Managing Director)

For Hingorani M. & Co.  
Chartered Accountants

For Venugopal & Chenoy  
Chartered Accountants

For D.P.Sen & Co.  
Chartered Accountants

(Pardeep Kumar)  
Partner

(P.V. Sri Hari)  
Partner

(A.K. Sinha)  
Partner

Place : Mumbai  
Date : 12th June, 2000

**AUDITORS' CERTIFICATE**

To,  
The Board of Directors,  
Powergrid Corporation of India Limited.,  
New Delhi.

We have examined the attached Cash Flow Statement of Powergrid Corporation of India Limited, for the period ended March 31,2000. The statement has been prepared by the Company in accordance with the requirements of listing agreement Clause-32 with Stock Exchanges and is based on and is in agreement with the Corresponding Profit & Loss Account and Balance Sheet of the Company covered by our report of 12th June, 2000 to the Members of the Company.

For **Hingorani M. & Co.**  
Chartered Accountants

**(Pardeep Kumar)**  
Partner

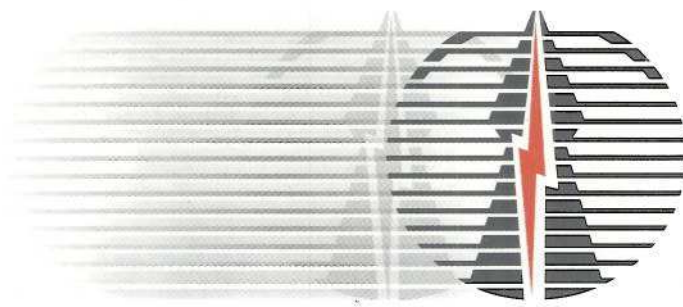
For **Venugopal & Chenoy**  
Chartered Accountants

**(P.V. Sri Hari)**  
Partner

For **D.P.Sen & Co.**  
Chartered Accountants

**(A.K. Sinha)**  
Partner

Place : Mumbai  
Date : 12th June, 2000





Respectful Homage to  
Late Sh. P.R. KUMARAMANGALAM

1952-2000

{ The then Hon'ble Union Minister for Power, }  
Govt. of India

He dreamt of an empowered  
India that will never be short of power.

We pledge to make his dream  
come true.



POWER GRID CORPORATION OF INDIA LIMITED



**POWER GRID CORPORATION OF INDIA LIMITED**

(A Government of India Enterprise)

B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016

Web Site : <http://www.powergridindia.com>