

## DIRECTORS' REPORT

Dear Members,

On behalf of the Board of Directors, it is my privilege to present the 27<sup>th</sup> Annual Report on the performance of your company during the financial year ended 31<sup>st</sup> March 2003 along with audited Statement of Accounts, Auditors' Report and Review of the Accounts by the Comptroller and Auditor General of India.

### FINANCIAL RESULTS

	Rs. Million	
	2002-03	2001-02
Gross Revenue	194511	184878
Gross Profit	65117	61211
Less:		
Interest	9916	8677
Depreciation	15291	13784
Provisions (Net)	1567	1729
Prior Period Adjustments (Net)	803	1
Extra Ordinary Items – Capital Receipts	—	(501)
Provision for taxation (including deferred tax of Rs.1 million)	1465	2125
<b>Net Profit after tax</b>	<b>36075</b>	<b>35396</b>

#### Appropriations:

Transfer to Bonds Redemption	1815	373
Proposed Dividend	7080	7079
Tax on Dividend	395	0
Transfer to General Reserve	27500	30000
Transfer to Capital Reserve	100	506

Net profit after tax has increased by Rs.679 million over the previous year.

### TURNOVER

#### Physical

You would be happy to know that your Company maintained its position as the largest generator of electricity in the country. During the year your company has generated more than one fourth (26.51%) of the total electricity generated in the country with less than one fifth (19.44%) of India's total generation capacity. NTPC's Coal and Gas-based stations generated 138.28 billion units of electricity as compared to the previous year's generation of 133.18 billion units - an increase of 3.8% over the previous year.

### Financial

Overall sales figures, marking an increase of 6.9% on year-to-year basis, are as under :-

	Rs. Million	
	2002-03	2001-02
Energy Sales including energy internally consumed	190206	177868
Consultancy, Project Management and Supervision Fees (including turnkey construction project)	269	285
	<b>190475</b>	<b>178153</b>

### REALISATION

During the year under review, realisation of dues improved substantially to 92.3% from 76.7% during the previous year. Implementation of the One-Time Settlement Scheme has helped in improvement of realisation which has gone up to 97.6% during July 2002-March 2003. Letters of Credit (LC) opened by State Power Utilities have also increased to Rs.18543 million from Rs.12426 million available on 31<sup>st</sup> March 2002. Present LC coverage is adequate to cover monthly billing.

### MOU PERFORMANCE

During 2002-03, the company has yet again surpassed the targets set for it under the Memorandum of Understanding (MOU) with the Govt. In April 2003 NTPC has received 'Merit Certificate' for excellence in achievement of MOU targets for the year 2001-02.

### DIVIDEND

Rs.4000 million was paid as interim dividend during the year 2002-03. Your Directors are happy to recommend final dividend of Rs.3080 million for the year. Thus, the total dividend works out to Rs.7080 million.



Dividend Presentation

## MANAGEMENT DISCUSSION AND ANALYSIS

A report on Management Discussion and Analysis is at Annexure-I.

## CORPORATE GOVERNANCE

A report on Corporate Governance is given at Annexure-II.

## OPERATIONAL PERFORMANCE

The coal-based stations achieved a Plant Load Factor (PLF) of 83.6%, the highest ever since inception. The PLF would have been much higher if NTPC's stations in Eastern Region were not forced to back down generation due to grid restriction. The PLF has consistently shown a trend of surpassing past achievements year after year. Considering the large capacity base of 20,497 MW with some of the units being as old as 22 years, this performance assumes significance.

NTPC has progressively shifted towards condition based maintenance with the strategic partnerships established with world renowned organizations like EPRI and TVA through their collaborative efforts with USAID. This could help it to achieve high availability factor and loading factor at its various power stations. This has resulted in exemplary performance in respect of PLF and Availability. With various performance enhancement initiatives, NTPC could also achieve excellent performance with respect to other operational parameters such as Heat Rate, Auxiliary Power Consumption, Specific Fuel Consumption. The structured and well-engineered R&M schemes of the old vintage units undertaken by NTPC will help in sustaining the high performance through the years.

## CAPACITY ADDITION

During the year 2002-03, one unit of 500 MW each at Simhadri and Talcher Projects were commissioned ahead of schedule. Thus, the total generation capacity of the Company has increased from 19,935 MW to 20,935 MW.

## PROJECT IMPLEMENTATION

Through judicious project planning and packaging as well as continuous innovative and pro-active approach in project implementation, NTPC has successfully synchronized during the year one 500 MW unit at Simhadri Project and the first unit of identical capacity at Talcher Project under Stage-II in 39 months, setting a national benchmark in power project execution. Progressive reduction in project execution period has resulted in substantial saving in the overall cost of the project. A comprehensive Business Process Re-engineering exercise is under way to face the emerging challenges of continual cost reduction and improvement in engineering deliveries.

## ORGANISATIONAL TRANSFORMATION

With the objective of positioning NTPC as a premier and competitive power utility of international standards and to maximize the value of its equity, a comprehensive organization transformation project has been undertaken availing of the services of M/s A.T. Kearney, a reputed global management consultancy firm.

Phase-I of this Project covering diagnostic studies and preparing a roadmap for transformation has been completed. Organization-wide implementation of the recommendations of the Management Consultant has also commenced under Phase-II.

## CORPORATE PLAN

In tune with the transformation roadmap, the Corporate Plan of NTPC for the period 1997-2012 has been updated to 2002-2017 and the updated Corporate Plan has been approved by your Board of Directors. The updated plan envisages a total installed capacity of 56,000 MW comprising 42,000 MW coal and gas based capacity, 11,000 MW hydel capacity, 2000 MW nuclear capacity and 1000 MW from non-conventional sources. The ownership profile of the total planned capacity addition comprises 48,000 MW on Company's own Balance Sheet, 6,000 MW through Joint Ventures, 1,000 MW through Domestic Subsidiaries and another 1,000 MW through Overseas Ventures. The plan also envisages NTPC's presence in coal mining, washeries, LNG, power distribution and trading businesses. Further, major thrust has been laid on Research & Development and Integrated Enterprise Resource Planning. In essence, by 2017 NTPC aims to have presence in many countries through different business vehicles and a combined group annual turnover of Rs.1400 billion.

NTPC has adopted a multi-pronged growth strategy to reach the desired goals by the year 2017. The strategy, inter-alia, includes capacity addition through greenfield projects, expansion of existing stations, joint ventures. Further, new business opportunities are being continuously explored through environment scanning.



*Infrastructural facilities being inaugurated at Barh*

## CAPACITY ADDITION PLAN

NTPC has planned to add a capacity of 9,370 MW during X Plan period and 11,210 MW during XI Plan period as per table given below:

(Figures in MW)

Project / State	Capacity	X Plan (2002-07)	XI Plan (2007-12)
<b>APPROVED AND ONGOING PROJECTS</b>			
Simhadri / Andhra Pradesh	1,000	500	-
Talcher-II / Orissa	2,000	2,000	-
Ramagundam -III / Andhra Pradesh	500	500	-
Rihand-II / Uttar Pradesh	1,000	1,000	-
Vindhyachal-III / Madhya Pradesh	1,000	1,000	-
Kahalgaon-II Phase-I / Bihar	1,000	1,000	-
Koldam (Hydro) / Himachal Pradesh	800		800
<b>Total</b>		<b>6,000</b>	<b>800</b>
<b>NEW PROJECTS</b>			
Main Plant Bids invited			
Unchahar-III / Uttar Pradesh	210	210	-
Kahalgaon-II Phase-II / Bihar	500	500	-
Sipat-II / Chhattisgarh	1,000	1,000	-
Sipat-I / Chhattisgarh	1,980	660	1,320
Barh / Bihar	1,980	-	1,980
<b>Total</b>	<b>5,670</b>	<b>2,370</b>	<b>3,300</b>
<b>OTHER PROJECTS</b>			
North Karanpura / Jharkhand	1,980	-	1,980
Kawas-II / Gujarat	1,300	-	1,300
Gandhar-II / Gujarat	1,300	-	1,300
Loharinag Pala (Hydro) / Uttaranchal	520	-	520
Tapoban Vishnugad (Hydro) / Uttaranchal	360	-	360
Kayamkulam-II / Kerala	1,950	-	650
<b>JOINT VENTURE PROJECTS</b>			
Railway JV- Nabinagar / Bihar	1,000	500	500
SAIL JV-Bhilai / Chhattisgarh	500	500	-
JV with TNEB – Ennore / Tamil Nadu	1,000	-	500
<b>Total (New)</b>		<b>3,370</b>	<b>10,410</b>
<b>GRAND TOTAL</b>		<b>9,370</b>	<b>11,210</b>

Out of the capacity of 9370 MW planned during X Plan, 1000 MW has already been commissioned. Currently, your Company is simultaneously executing five coal-based expansion projects at Talcher, Ramagundam, Rihand, Vindhyachal and Kahalgaon setting up a total of 10 units of 500 MW each. These projects are expected to be completed in stages during the X Plan i.e. by the year 2007 adding 5000 MW capacity. Besides, at the Koldam Hydro Electric Project four units of 200 MW each are being set up. Construction activities in all these projects are in different stages and are progressing satisfactorily.

Keeping in view CERC's tariff norms, which has substantially affected NTPC's internal resource generation, capacity

addition from new projects is subject to resource gap being met by appropriate modality. Necessary financial tie-ups for implementation of these projects are being made.

All these projects will require timely clearances and approvals including environmental clearance before start of work. These clearances are being vigorously followed up with the respective agencies with requests to accord the clearances/approvals matching with the project schedules.

The Company has initiated necessary action for international competitive bidding to procure five MTPA of LNG for the gas projects' expansion. Bids received are under techno commercial evaluation and the award is likely to be placed by January 2004.



Tunnel work nearing completion at Koldam

## HYDRO POWER INITIATIVE

### Koldam Hydro Power Project

The Central Electricity Authority (CEA) has accorded revised Techno-economic clearance for Koldam Hydro Power Project (4x200 MW). Despite being a new area of activity for NTPC, day lighting of diversion tunnel, a major activity in Hydel Project construction, has been completed ahead of schedule in keeping with the tradition of NTPC. The tunnels are targeted to be ready for river diversion by early 2004. Various other activities in relation to this project are progressing satisfactorily. This project is expected to be completed during the early part of XI Plan.

### Tapovan Vishnugad and Loharinag-Pala

The Company has entered into a Memorandum of Understanding (MOU) with the State Government of Uttaranchal for development of Tapovan Vishnugad (360 MW) and Loharinag-Pala (520 MW) Hydel Power Projects. Detailed survey and investigation for both the projects for preparation of Detailed Project Report and establishment of techno-economic viability have already commenced. These Projects are expected to be completed during the XI Plan period.



MOU Signing Ceremony for Loharinag-Pala and Tapovan Vishnugad at Dehradun

NTPC is accelerating its further growth in Hydro Power for a broad-based capacity portfolio aiming at improving the Thermal-hydro mix which, in turn, would lead to better management of peak demand and long term tariff stabilisation. NTPC has short-listed a few more Hydro Power Projects in the country for development/implementation which would have least adverse impact on environment.

### Joint Ventures

The performance of the Joint Venture Companies, in which your Company has equity stake, are covered in the Management Discussion and Analysis. The Company lays great emphasis on establishing Joint Ventures (JVs) as a vehicle for growth. Towards this end, the following Joint Ventures are on the anvil:-

**JV with Railways:** NTPC has entered into an MOU with Ministry of Railways for setting up power plants to meet the power requirements of Railways. The Company contemplates to set up a 1000 MW power plant at Nabinagar in the State of Bihar in Joint Venture with Railways. Action is being taken for preparation of feasibility report for this Project.

**JV with TNEB:** An MOU has also been executed with Tamil Nadu Electricity Board (TNEB) for setting up a 1000 MW Coal-based Power Project near Chennai at Tamil Nadu in Joint Venture with TNEB. Clearances for the proposed site are being obtained for preparation of feasibility report. A Joint Venture Company with 50:50 equity participation by NTPC and TNEB has already been incorporated to pursue this project.



Exchange of MOU Documents for JV with BHEL

**JV with BHEL:** NTPC is forming a Joint Venture Company with BHEL for taking up EPC and maintenance jobs in the power sector. MOU to this effect has been executed with BHEL and the terms of the Joint Venture Agreement are under discussion.

## **STRATEGIC ALLIANCE**

To tap the growing potential in the field of power globally, the Company has entered into a strategic alliance with Black & Veatch (B&V), an Internationally acclaimed Company based in USA. An MOU has been executed between NTPC and B & V to collaborate, on project to project basis, to provide efficient and reliable services for Operation & Maintenance of Thermal Power Plants and for setting up state-of-the-art power plants for clients in India and abroad. Various other allied services are also covered in this MOU.

## **SUBSIDIARIES**

During the year, the Company has incorporated three subsidiary companies for branching out to the related fields of electricity distribution, developing small and medium hydel projects and power trading respectively. With these, the Company now has four subsidiaries. The results of these subsidiaries are briefly dealt with in the Management Discussion and Analysis. Detailed coverage on these subsidiaries is available in the respective Directors' Report appended hereto. Statement pursuant to Section 212 of the Companies Act, 1956 (Act) in respect of these subsidiaries is given at Annexure-III.

## **RESEARCH & DEVELOPMENT**

Currently, NTPC is engaged in applied research. NTPC is collaborating with IIT-Delhi for developing its future plans and the roadmap for the R&D activities.

NTPC has decided to significantly upgrade its R&D activities and expand as well as intensify the role of R&D, covering basic research also. The Company is planning to engage itself in research works on a major scale in the fields of developing alternate fuels for electricity generation, assessing and assimilating new age technologies including developing clean coal technologies to take care of high ash content in Indian coal, harnessing non-conventional energy sources, etc. In addition, NTPC contemplates to undertake study/research inter alia on distributed power generation technologies, fuel cell technology as a part of its Corporate Social Responsibility.

To actualize all these, NTPC is contemplating to establish a state-of-the-art 'Power Technology & Research Centre' of international standards in Greater Noida. This Centre will be a resource center for the entire Indian power sector.

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

Technology driven innovation and adaptation of best engineering practices have been a source of strength for your Company over the years in project implementation, operation & maintenance as well as renovation & modernisation. In

tune with this tradition several technological initiatives have been taken in the areas of Integrated Gasification Combined Cycle, 765 KV System, Supervisory Control and Data Acquisition and Gas Insulated Technologies.

The Integrated Gasification Combined Cycle (IGCC) technology offers opportunities for the country to increase the conversion efficiency of coal to the level of 42-45% from the conventional levels of 35-36%. This offers the twin benefits of preserving the natural resource of the country i.e. coal by reducing its consumption and results in substantial reduction in the CO<sub>2</sub> emission per unit of electricity generated. The challenge lies in Indianisation of the technology to suit the high ash Indian coal. Realizing the huge potential, NTPC, in collaboration with USAID, has undertaken the selection, assimilation, Indianisation and commercialisation of the IGCC technology.

Information in accordance with the provisions of Section 217 (1) (e) of the Companies Act, 1956 regarding conservation of energy, technology absorption and foreign exchange earnings and outgo is given in Annexure-IV to this Report.

## **ENVIRONMENT AND SAFETY**

NTPC is committed to protect and promote the environment and attaches great importance to Safety standards. Towards this end, NTPC has taken a number of pro-active measures in its various business units including implementation of ISO-14001 Standard.

Under the Environment Action Plan, a number of environment projects were completed during the year. These help in better treatment of the main plant effluents, besides conservation of water. Action has been initiated to explore use of technologies such as Flue gas conditioning and Sodium Dosing at some of its stations for performance enhancement of Electrostatic Precipitators and reduction of stack particulate emission at these stations.

## **ASH UTILISATION**

Ash produced in different Stations of NTPC is channelled to different productive uses in cement and asbestos industries, land development and road embankment. Studies have also been undertaken for underground mine stowing with ash in association with Central Mining Research Institute.

## **HUMAN RESOURCE MANAGEMENT**

NTPC takes pride in its highly motivated and trained Human Resource that has contributed its best to bring NTPC to its present height. The total strength of employees of the Company was 23527 as on 31<sup>st</sup> March 2003 as against 23972 as on 31<sup>st</sup> March 2002. The overall Man-MW ratio for the year 2002-03 was 1.02 as against 1.07 for the year 2001-02.

Employee morale continued to remain high facilitating smooth

working of the Corporation and contributing to higher generation of power. All efforts to achieve employee satisfaction were made through measures like job-rotation, re-deployment etc. The turnover rate of the executives during the year was as low as 0.13% compared to 0.24% during the previous year.

With a view to improving commitment and motivation, various HR initiatives/interventions were launched based on the four foundation blocks of Competence, Commitment, Culture and Systems of HR to attain the stated HR vision: “To enable our people to be a family of committed world-class professionals, making NTPC a learning organisation”. These, inter alia, include Rewards & Recognition, Manpower Rationalisation, Innovative Benefits, Social Security Design, Career Path & Job Rotation Scheme, Developmental Initiatives, Employee Feedback & Involvement etc.

### TRAINING AND DEVELOPMENT

The ISO-9001 certified Power Management Institute is committed to be a leading institute in developing world class competencies by providing training, management development programmes and consultancy services catering to the needs of power professionals both in Public and Private Sectors including MNCs like PSEG Global, Alstom Power and Siemens.

With a view to enhancing mutual understanding and strengthening bonds between NTPC and State Electricity Boards (SEBs), NTPC is conducting the “Partner in Progress” pilot programme for SEBs.

### EMPLOYEE RELATIONS

Employee Relations in NTPC, rooted in the philosophy of bipartism, continued to be cordial and harmonious during the year.

### REHABILITATION & RESETTLEMENT

NTPC is committed to help the populace displaced for execution of its projects and has been making efforts to improve



R & R Township under construction at Koldam

the socio-economic status of Project Affected Persons (PAPs). In line with its social objective, the company has focused on effective resettlement and rehabilitation of its PAPs and also community development works in and around the projects.

During the year under review, rehabilitation work for PAPs in Korba and Faridabad projects were completed. Rehabilitation work for Talcher-Kaniha project has almost been completed.

### CORPORATE SOCIAL RESPONSIBILITY

NTPC became member of Global Compact, an UN initiative for Corporate Social Responsibility committing to the basic principles in the areas of human rights, labour standard and environment.



Telephone booths for the physically challenged persons

Focussing on its role of a socially responsible and conscious corporate citizen, NTPC has taken steps for representation of physically challenged persons in its workforce. NTPC decided to make up the shortfall in employment of physically challenged persons through recruitment in a phased manner. 173 physically challenged persons were recruited during the year 2002-03. NTPC submitted to Global Compact a case example on employment of physically challenged persons which was accepted by Global Compact and posted on its web site.

### SC/ ST/ OBC

It is the policy of the company to promote the interest of SCs/ STs/OBCs in the recruitment and service matters. Statistical information with regard to SCs/STs is given in Annexure-V to this Report.

### IMPLEMENTATION OF OFFICIAL LANGUAGE POLICY

Several steps have been taken to implement the Official Language Policy in the Company. During the year offices located at Kahalgaon, Lucknow and Tanda were notified under



Promoting the official language

sub rule 10(4) of the Official Language Rule 1976 for performing their entire official work in Hindi. So far, 16 offices of the Company have been notified under the same rule.

### VIGILANCE

NTPC Vigilance Department is an ISO 9001:2000 accredited Deptt. of the Company. It lays emphasis on preventive vigilance to protect the interest of various stakeholders.

During the year 2002-03, 79 complaints were taken up for investigation besides 39 complaints which were already under investigation. Out of total 118 complaints, investigation were completed in 74 cases. In addition, 10 references were received from other sources for investigation. All these complaints were investigated and investigation reports sent to concerned authorities. Based on investigations conducted and the intensive examination of packages, substantial savings were effected.

### STATUTORY AUDITORS

The Statutory Auditors of your Company are appointed by the Comptroller & Auditor General of India. M/s. K.K. Soni & Co., S.K. Mittal & Co., Laxminiwas & Jain, Vardhaman & Co. and B.C. Jain & Co. Chartered Accountants were appointed Joint Statutory Auditors for the financial year 2002-03.

### MANAGEMENT COMMENTS ON STATUTORY AUDITORS' REPORT

Members' attention is drawn to the comments of the Statutory Auditors as contained in paragraph number 3(i), (ii) & (iii) of their report to the Shareholders. In this regard your Directors clarify that:

The reconciliation of advances, debtors, creditors, materials

lying with customers and material issued on loan is an ongoing process and is under progress.

CERC have notified, by regulations, the terms and conditions for determination of tariff effective from 1<sup>st</sup> April 2001. Further, CERC have directed by notifications that the billing of sales shall continue to be done on the same basis as on 31<sup>st</sup> March 2001 subject, however, to adjustment after final determination of tariff. Sales as per CERC regulations are likely to be lower than the billed amount, and accordingly, the company provisionally recognised sales on the basis of tariff worked out as per CERC regulations pending final determination of tariff by CERC. The fact has been also explained in note no. 3a of the Annual Accounts.

Under the Government of India Scheme for one-time settlement of the dues of State Electricity Boards (SEBs) (the Scheme), 8.5% tax-free bonds of the State Governments are to be issued to NTPC by the Reserve Bank of India for the amount of outstanding dues as on 30<sup>th</sup> September 2001 and the late payment surcharge agreed to be securitised. Under the scheme there are also certain incentives payable to SEBs if the conditions thereto are complied with. In accordance with the Scheme, Tripartite Agreements for issuance of bonds with retrospective effect from 1<sup>st</sup> October 2001 have been signed during the year by the Government of India, Reserve Bank of India and Governments of 24 states. The bonds were not issued upto the date of the Balance Sheet as the State Governments did not issue relevant notifications. The impact of the Scheme on the accounts of the Company could not be ascertained and accounted for as the aforesaid surcharge, incentive and the interest on the bonds are interrelated.

### C&AG REVIEW

Review of the Accounts for the year ended 31<sup>st</sup> March 2003 by the Comptroller and Auditor General of India (C&AG) is furnished at Annexure-VI to this Report. Comments of C&AG on the Accounts of the Company for the financial year 2002-03 and management replies thereon are also given in the aforesaid Annexure-VI.

### PARTICULARS OF EMPLOYEES

Information pursuant to provision of Section 217 (2A) of the Companies Act, 1956 read with the Companies (Particulars of Employees) Rules, 1975 as amended, is given as Annexure-VII to this Report.

## REDRESS OF GRIEVANCES

The Company Secretariat is the nodal point for redress of Public Grievances and the Company Secretary has been designated as Director (Grievances) for the Corporation. Grievance Officers have also been appointed in all Projects/Regional Offices. Grievances received from the public are being processed as per guidelines issued by Department of Administrative Reforms and Public Grievances.

Grievances from employees are being dealt as per staff grievance procedure framed in this regard. The statistical data of the grievance cases are given in Annexure-VIII to this Report.

## BOARD OF DIRECTORS

Shri N.S.Sisodia, Special Secretary, Union Ministry of Power, ceased to be member of the Board w.e.f. 8<sup>th</sup> August 2002 consequent upon his relinquishment of charge in the Ministry of Power on his appointment as Secretary (Defence Production & Supplies), Govt. of India. Shri Deepak S. Parekh, Non-official Part-time Director also tendered his resignation from the Board w.e.f. 5.8.2003. The Board wishes to place on record its deep appreciation for the valuable services rendered by Shri N.S.Sisodia and Shri Deepak S. Parekh. Shri Ajay Shankar, Joint Secretary (Thermal), again joined the Board w.e.f. 17<sup>th</sup> December 2002 and Shri R.D.Gupta took over as Director (Commercial) of the Company on 29<sup>th</sup> April 2003.

## DIRECTORS' RESPONSIBILITY STATEMENT

As required under Section 217 (2A) of the Companies Act, 1956 your Directors confirm that:

- i) In the preparation of the annual accounts, the applicable accounting standards had been followed along with proper explanation relating to material departures;
- ii) The Directors had selected such accounting policies and applied them consistently and made judgements and estimates that are reasonable and prudent so as to give a true and fair view of the state of affairs of the company at the end of the financial year 2002-03 and of the profit of the company for that period;
- iii) The Directors had taken proper and sufficient care for the maintenance of adequate accounting records in accordance with the provisions of the Companies Act, 1956 for safeguarding the assets of the company and for preventing and detecting fraud and other irregularities; and

iv) The Directors had prepared the Annual Accounts on a going concern basis.

## ACKNOWLEDGEMENT

The Board of Directors, acknowledges with deep appreciation the co-operation received from the Govt. of India, particularly the Ministry of Power, Ministry of Finance, Ministry of Environment & Forests, Ministry of Coal, Planning Commission, Department of Public Enterprises, Central Electricity Authority and Central Electricity Regulatory Commission as well as from the State Governments, Regional Electricity Boards and State Electricity Boards.

The Board also conveys its gratitude to various International and Indian Banks/Financial Institutions as well as Indian investors for the confidence reposed by them in NTPC. Board's special appreciation and thanks are due to the valued customers, the purchasers of power as also to valued consultancy clients, who have reposed confidence in NTPC. The Board also appreciates the contribution of contractors, vendors and consultants in the implementation of various projects of the Company. The Board acknowledges with thanks the constructive suggestions received from C&AG and the Statutory Auditors.

The Board wishes to place on record its appreciation for the untiring efforts and contributions made by the employees at all levels to ensure that the company continues to grow and excel.

For and on behalf of the Board of Directors



(C.P.JAIN)

CHAIRMAN & MANAGING DIRECTOR

Place: New Delhi

Date: 23.9.2003



## MANAGEMENT DISCUSSION AND ANALYSIS

### INDUSTRY STRUCTURE & DEVELOPMENTS

Since 1948, the power sector has been dominated by monopolistic and monolithic State Electricity Boards. Since 1991, they controlled 70% of electricity generation and almost the entire distribution. Installed capacity of the country under this set up has increased from around 1500 Megawatt in 1948 to over One Lakh Megawatt as of now. Consequent upon the initiation of economic reforms and the liberalisation, the Government of India has permitted private investment in power generation. These Independent Power Producers (IPPs) were to supply power to the SEBs under a long term Power Purchase Agreement. This was intended to supplement dwindling investments by the state sector through encouraging private participation.

After the decade-long efforts failed to attract significant private investments; the policy-makers analysed the situation and came to the conclusion that the poor financial health of the SEBs was the root cause that was withholding the private investment flow. Hence, thrust shifted from the generation sector to the distribution reforms in the country. Reducing the technical and commercial losses of the SEBs/Distribution companies, tariff rationalisation, system modernisation and improvement in the service standards were the prime motives behind the distribution reforms.

To facilitate reform of the electricity sector and to make it commercially viable, a comprehensive Electricity Bill was drafted to replace all existing legislation and introduced in the Parliament in 2001 and enacted in June 2003. The Act assumes significance as it provides a statutory basis to reform the sector. Some of the key features of the Act are freeing generating companies from licensing requirements, encouraging captive generation, providing open access subject to availability of transmission capacity, freedom to supply to any licensee/consumer, providing for trading of electricity, providing the freedom to bulk consumers to choose the electricity supplier etc.

These policy provisions will be operationalised progressively by the respective Electricity Regulatory Commissions (ERCs).

This enactment aims to pave the way for a qualitative transformation of this sector by opening up new vistas, focussing on regulation through an independent quasi-judicial

regulatory framework and ushering in an era of competitive growth. The Accelerated Power Development and Reforms Programme of the Government of India and the anti-theft legislations by some of the States would provide further fillip to reform the sector. Your Company, backed by its tradition of excellence, has taken a series of initiatives to seize the opportunities thrown up in the areas of distribution and trading, besides setting in motion a plan to further consolidate its core activities.

### OPPORTUNITIES & THREATS

The Electricity Act, 2003 would open up several new opportunities for players like NTPC, e.g. direct supply to bulk customers, retail supply and distribution, etc. The focus of the Act on factors such as compulsory metering of power would improve operational efficiencies in state utilities, thereby improving their ability to pay for power purchased from NTPC.

The realisation of the plans of NTPC as also the goal of achieving 'Power for all by 2012' depends to a great extent on the effective and efficient reform of the sector. The pace of reforms will have an impact on the growth of the sector and NTPC. Fuel (coal and gas) is the dominant input for the generation business constituting about 60% of the cost. The rate of increase of the fuel prices will have a significant impact on the despatch ability of power stations under the current ABT Regime. Therefore, it is equally essential to have independent regulators for these industries without which few elements like the generators in the value chain will come under severe strain.

### RISKS AND CONCERNS

**Competition:** The Electricity Act, 2003 could also result in increased competition for NTPC. The waiver of licensing requirement for generation companies and improved viability of the generation business could make it attractive for private players. NTPC has built large generation capacities at pit head, the competitive economics of which are difficult to replicate by potential competitors. NTPC always endeavours to provide reliable power at competitive costs.

**Tariff:** Downward regulatory pressure on tariffs is a concern for the sector. CERC is coming out with new terms and conditions for tariff, which will be implemented with effect from April 2004. New Power Tariff Policy, which is under

formulation by Govt of India may impact/influence long-term growth and viability of this sector.

**Ash utilisation:** High ash generation (Indian coal being high ash content one) coupled with limited avenues for utilisation and absence of facilitating policies pose a challenge in achieving the desired ash utilisation level. NTPC has identified new avenues for ash utilisation like mine filling and has approached the Government and Coal companies for necessary support in this area. Stringent environmental norms in the future may add to the cost of generation.

**New Business Ventures:** NTPC is entering into new businesses of electricity distribution, trading, coal mining, and coal washery. These businesses are expected to yield reasonable returns over a period of time. Developments midway may impact the company's performance. NTPC's steady cash generation in existing generation business will provide the required financial resilience.

NTPC is expanding its services business portfolio in EPC, R&M and O&M activities in the domestic as well as international markets.

NTPC is moving towards backward integration into fuel management to secure improved fuel security and to understand supply economics. NTPC's forward integration into the distribution business in India is to gain competitive advantage.

## INDUSTRY OUTLOOK

The Sixteenth Electric Power Survey published by the Central Electricity Authority in September 2000 has projected an energy demand of about 975.22 Billion Units by the end of the XI plan period and about 1318.64 Billion Units by the end of the XII plan period. In effect, this would call for a trebling of the energy generation in the next 15 years. At present, there is a wide gap between demand and supply of power. During 2002-03, there was peak demand deficit of 12.0% and energy deficit of 8.8%. To meet this deficit and for projected growth in energy demand of a rapidly expanding economy and achieve the goal of "power for all", it has been estimated that India may require additional generating capacity of 100000 MW by the year 2012. The Company views that the growth potential of the power sector would provide ample opportunities to NTPC to take it to newer heights in the days ahead.

## FINANCIAL REVIEW

The annual accounts have been prepared in compliance with

the requirement of the Companies Act, 1956 and on going concern basis. There is no material departure from the prescribed accounting standards in preparation of the annual accounts. The accounting policies adopted by the company and the estimates and judgments relating to the financial statements have been made on a prudent and reasonable basis in order to reflect the true and fair view of the financial statements.

## SHARE CAPITAL

The entire share capital is owned by Government of India. During the year no addition has been made. However, the authorised capital has been increased from Rs.80,000 million to Rs. 1,00,000 million and the face value of shares has been split to Rs. 10 each from Rs. 1,000 each.

## RESERVES & SURPLUS

### (a) Capital Reserve

During the year the company has transferred Rs. 102 million to capital reserve. Out of this Rs.100 million relates to profits on sale/disposal of fixed assets. Balance Rs. 2 million relates to grants received for R&D equipments.

### (b) Bonds Redemption Reserve

Rs.1815 million have been credited during the year leaving a balance of Rs.2588 million at the end of the year.

### (c) General Reserve

Rs.27500 million have been transferred from profit & loss account during the year. The closing balance as on 31<sup>st</sup> March 2003 is Rs. 232500 million.

### (d) Foreign Project Reserve

The closing balance as on 31<sup>st</sup> March 2003 was Rs.4 million as against the previous year's figure of Rs.4 million. During the year Rs. 81,229/- has been transferred from Profit & Loss Account.

## SECURED LOANS

During the year, the company has redeemed foreign currency term loans (guaranteed by GOI) amounting to Rs.232 million. Formalities for creation of securities in respect of 10 % Secured Non Convertible Bonds (XII Issue) of Rs. 5000 million, shown as unsecured as on 31<sup>st</sup> March 2002 have been completed during the year. In addition, bonds amounting to Rs. 20000 million have been issued on private placement basis during the year. Thus, closing balance of secured loan increased to Rs. 41226 million from Rs. 16455 million as on 31<sup>st</sup> March 2002.

## UNSECURED LOANS

During the year, the company has raised

- (a) Rs. 3656 million by fixed deposits.
- (b) Rs. 1363 million by issue of bonds.
- (c) Rs. 5273 million by foreign currency term loans.

The repayment during the year was

- (a) Rs. 1240 million of fixed deposit.
- (b) Rs. 850 million of bonds.
- (c) Rs. 7300 million towards foreign currency term loans.
- (d) Rs. 20501 million to the Government of India which includes prepayment of higher interest bearing loans of Rs. 19887 million.

Foreign currency loans as at the end of the year is Rs.40677 million as against previous year's figure of Rs.42704 million.

NTPC has received funding proposals aggregating to Rs. 80000 million from various banks and financial institutions for participating in the capacity addition programme. The aggregate amount of domestic loans tied-up is Rs. 65194 million. Balance outstanding in respect of rupee term loan as on 31<sup>st</sup> March 2003 is Rs. 43232 million as against the previous year's figure of Rs. 27059 million.

## FIXED DEPOSITS

The deposits received by the Company from 4082 depositors as on end-March 2003 stood at Rs.5067 million. Besides, an amount of Rs.9.6 million has not been claimed after maturity by 240 depositors as on 31<sup>st</sup> March 2003.

## FIXED ASSETS

	As on 31 <sup>st</sup> March (Rs. million)	
	2003	2002
Total Gross Assets	<b>366106</b>	328912
Less : Accumulated Depreciation	<b>167456</b>	152131
Net Block	<b>198650</b>	176781
Capital Work In Progress	<b>51543</b>	52038
Construction Stores/Advance	<b>12320</b>	13512
	<b>262513</b>	242331
Depreciation as % of Total Revenue	<b>7.86</b>	7.46
Accumulated Depreciation as % of Gross Block	<b>45.74</b>	46.25

The company added Rs. 37194 million to its gross block of assets including investment in Plant & Machinery Rs. 29,141 million, Building Rs. 2483 million, Land Rs. 1781 million, Earth Dam & Reservoir Rs. 878 million, Railway Siding 689

million, Furniture, Fixture & Other Office Equipment Rs. 177 million, EDP, Satcom Equipments Rs. 141 million. Capital work-in-progress has reduced from Rs. 52038 million to Rs. 51543 million as at 31<sup>st</sup> March 2003. During the year, an amount of Rs. 31736 million has been capitalised mainly on account of capitalisation of two units of Simhadri STPP and Rs.31241 million (net) has been added mainly due to investments on the ongoing projects viz. Talcher Stage-II, Ramagundam Stage-III, Rihand Stage-II and Koldam Hydro Electric Power Project.

Construction stores have also increased from Rs. 5522 million to 7053 million for the procurement of stores for construction activities at the projects. Advances made to different contractors/suppliers and sub-contractors in respect of capital work-in-progress have decreased from Rs.7990 million to Rs.5267 million.

The capital commitment as on 31<sup>st</sup> March 2003 works out to Rs. 61836 million against the previous year's figure of Rs. 60092 million.

Company will resort to borrowings, public deposits and loans to meet its fund requirement for expansion plans. However, partial requirement of funds will be met from internal accruals.

## INVESTMENTS

The company has made several strategic investments in joint ventures and subsidiary companies. These investments are strategic in nature and are aimed at procuring business benefits. Company has also invested in bonds in liquidation of sundry debtors in case of some customers. Company has invested a nominal amount in NTPC Employees' Consumer and Thrift Co-operative Societies for promoting Co-operative movement in the townships of the units. Cumulative investment upto 31<sup>st</sup> March 2003 is Rs. 36674 million against the previous year's investment of Rs. 40281 million.

### Management & Technology Applications (I) Ltd.

As per the direction of the Deptt. of Public Enterprises, Management & Technology Applications (I) Ltd. was formed as a joint venture company between Management & Technologies International Inc. (MTI), a USA based NRI company and six Public Sector Undertakings (PSUs). The subscribed capital was fixed as Rs.20 lakh. The share holding of MTA (I) was 51% and balance 49% of the equity was held by six PSUs. NTPC had made an investment of Rs. 1.634 lakh in the equity share capital of MTA (I). The share holders of MTA (I) in the Extra-ordinary General Meeting held on 1<sup>st</sup> February 2002 decided to wind up the company voluntarily in view of no possibility of reviving the business. NTPC received an amount of Rs.11,106/- out of the above investment and provision

for diminution in value of investment was made in the Accounts for the year 2001-02. During the year 2002-03, the investment to the extent of provision made has been written off in the Accounts.

## INVESTMENTS IN JOINT VENTURE COMPANIES

### Utility Powertech Ltd. (UPL)

Utility Powertech Ltd., a joint venture company of NTPC & BSES has been taking up construction, erection and project management works in power and other sectors. Total investment in the company as on 31<sup>st</sup> March 2003 is Rs.10 million. Net profit after tax for the year 2002-03 is Rs. 46.29 million. The company has declared dividend of 150% for the current year (Previous year 30%).

### NTPC Alstom Power Services Private Ltd. (NASL)

NTPC and Alstom Power Generation AG, Germany had formed a 50:50 joint venture company namely NTPC - Alstom Power Services Private Ltd.(NASL), with the authorised capital of Rs. 500 million, to undertake the work of renovation & modernisation of under performing power stations in India and SAARC countries. Both NTPC and Alstom Power have so far subscribed an amount of Rs. 30 million each towards their share of equity capital in NASL. Net profit after tax for the year 2002-03 is Rs. 4.41 million with a turnover of Rs. 348.8 million.

### Power Trading Corporation of India Ltd. (PTC)

Power Trading Corporation of India Ltd. was formed with an authorised capital of Rs. 7500 million. The main objective of the company is to purchase power from identified private mega power projects and sell it to identified SEBs. NTPC has so far invested Rs.60 million in PTC's equity capital. During the year, PTC issued equity shares of Rs.385 million to DVC, Tata Power and financial institutions resulting in reduction of NTPC's holding in the equity shares from 25 % to 8.28 %. Net profit after tax for the year 2002-03 is Rs.98.4 million. The Company declared a dividend of 7% in the current year (Previous year 7%).

### NTPC – SAIL Power Co. Private Ltd.

NTPC-SAIL Power Company Private Ltd., a joint venture company of NTPC and SAIL, with an authorised capital of Rs. 1300 million owns and operates the captive power plants at Durgapur (120 MW) and Rourkela (120 MW) steel plants

of SAIL. Both NTPC and SAIL have subscribed an amount of Rs. 586.50 million each towards the paid-up capital of the joint venture company. The company has posted a profit of Rs. 219.07 million in the financial year 2002-03 and has declared and paid interim dividend of Rs.110.00 million. NTPC has received its share of dividend of Rs. 55.00 million which was accounted for in 2002-03. The company has declared and paid a final dividend of Rs. 50.00 million thus making the total dividend of Rs. 160.00 million (Previous year Rs. 160.00 million).

### Bhilai Electric Supply Co. Ltd.

Bhilai Electric Supply Company Ltd., a company formed by SAIL with an authorised capital of Rs. 350 million, which owns and operates the captive power plant at Bhilai steel plant (74 MW) of SAIL, became a joint venture company of NTPC and SAIL. Both NTPC and SAIL have subscribed an amount of Rs. 166.00 million each towards the paid-up capital of this joint venture company. The company has posted a profit of Rs. 63.16 million in the financial year 2002-03. The Company has plans to undertake expansion by adding two units of 250 MW + 20% capacity each.

## INVESTMENTS IN SUBSIDIARY COMPANIES

### Pipavav Power Development Co. Ltd. (PPDCL)

Pursuant to the Presidential Directive issued under the Articles of Association of NTPC and the decision of the Board of Directors, a shell company under the name of Pipavav Power Development Company Ltd. (PPDCL) has been formed as a wholly-owned subsidiary of NTPC on 20<sup>th</sup> December, 2001 and an amount of Rs. 60.50 million was paid to Gujarat Power Corporation Ltd., (GPCL) on behalf of PPDCL by NTPC for acquisition of 212 hectares of land for the main plant of 2000 MW Pipavav Mega Power Project in Amreli district of Gujarat. The land is yet to be transferred in the name of PPDCL. The company has incurred Rs.21,201 as pre-operative expenses which has been carried forward to the Balance Sheet.

### NTPC Electric Supply Co. Ltd. (NESCL)

A company under the name of NTPC Electric Supply Co. Ltd. (NESCL) has been formed as a wholly-owned subsidiary of NTPC on 21<sup>st</sup> August 2002 with an authorised capital of Rs. 100 million for retail distribution of power. The paid-up capital of the company as on 31<sup>st</sup> March 2003 is Rs.0.50 million. Further, shares of Rs.0.31 million have since been allotted in the name of NTPC. The company posted a loss of Rs. 29,493/- during the year 2002-03. NESCL is actively

pursuing acquisition of majority stake in Kanpur Electric Supply Co. Ltd., a distribution Company for retail supply of electricity in Kanpur electricity supply area. Taking over of other distribution circles are also under consideration.

### **NTPC Vidyut Vyapar Nigam Ltd. (NVVNL)**

A company under the name of NTPC Vidyut Vyapar Nigam Ltd., (NVVNL) has been formed as a wholly-owned subsidiary of NTPC on 1<sup>st</sup> November 2002 with an authorised capital of Rs. 100 million to undertake business of sale and purchase of electric power. The paid up capital of the company as on 31<sup>st</sup> March 2003 is Rs.0.50 million. Further, shares of Rs.0.32 million have since been allotted in the name of NTPC. NVVNL made a modest beginning in power trading with a turnover of Rs.40.46 million. The company posted a loss of Rs.131785/- during the year 2002-03.

### **NTPC Hydro Ltd. (NHL)**

A company under the name of NTPC Hydro Ltd., (NHL) has been formed as a wholly-owned subsidiary of NTPC on 12<sup>th</sup> December 2002 with an authorised capital of Rs.100 million for development of small and medium hydro electric power projects upto 250 MW. The paid-up capital of the company as on 31<sup>st</sup> March 2003 is Rs.0.50 million. Further, shares of Rs.0.32 million have since been allotted in the name of NTPC. The company has not started commercial operation as on 31<sup>st</sup> March 2003. The company has incurred Rs. 16393 /- as pre-operative expenses which has been carried forward to the Balance Sheet. NHL has entered into a Memorandum of Understanding with Government of Uttaranchal for development of 108 MW Lata-Tapovan Hydel Project subject to techno-economic viability.

### **INVENTORIES**

After making provisions for shortages and obsolete/unserviceable items, inventories as on 31<sup>st</sup> March 2003 amount to Rs. 17712 million as against the previous year's figure of Rs. 20176 million. Coal in number of days consumption as on 31<sup>st</sup> March 2003 is 19 days in comparison to previous year 29 days. Spares in number of days consumption in March 2003 is 1183 days in comparison to previous year's figure of 1200 days. Considering the time lag in procuring critical spares & imported spares, company has to maintain adequate level of spares inventory in order to reduce the down time of the generating units.

### **SUNDRY DEBTORS**

Debtors amounted to Rs. 124349 million (net of provision for bad and doubtful debts amounting to Rs. 14558) as on 31<sup>st</sup> March 2003 as compared to Rs. 115328 million (net of provision for bad & doubtful debts amounting to Rs. 11344 million) as on 31<sup>st</sup> March 2002. These debtors are considered good and recoverable. Provision for bad and doubtful debt is

made based on various factors including collectibility of specific dues and disputes raised by the customers on commercial issues.

The debtors are at 65 % of revenue for the year ended 31<sup>st</sup> March 2003 representing an outstanding of 238 days of revenue.

The age profile is furnished below as on 31<sup>st</sup> March 2003.

Particulars	As on 31 <sup>st</sup> March (Rs. million)	
	2003	2002
Less than 6 months	<b>10016</b>	15057
More than 6 months to one year	<b>7127</b>	23643
One year to three years	<b>60985</b>	58527
More than three years	<b>60779</b>	29445
<b>Total</b>	<b>138907</b>	126672

### **SCHEME FOR ONE-TIME SETTLEMENT OF SEB DUES**

Pursuant to the decisions taken in the Chief Ministers' Conference on 3<sup>rd</sup> March 2001, the Govt. of India had constituted an Expert Group under the Chairmanship of Member, Planning Commission to suggest a scheme for One-Time Settlement of Dues payable by SEBs to Central Public Sector Undertakings (CPSUs) and also to suggest the steps required to ensure full payment of current dues in future. Recommendations of the Expert Group, which were endorsed by an empowered Group of Chief Ministers, were approved by the Cabinet Committee on Economic Affairs on 23<sup>rd</sup> March 2002.

The scheme provides for securitisation of dues (after 60% waiver of surcharge) against energy supplied upto 30<sup>th</sup> September 2001 in the form of 15 year 8.5% tax-free bonds to be issued by RBI on behalf of the State Governments to CPSUs. For ensuring full payment of current dues, the scheme provides the following:-

- Opening of Letter of Credit equivalent to 105% of the average monthly billing of the preceeding 12 months.
- SEBs shall be eligible to get cash incentive at 2% of the bond amount for opening and maintaining LC from July 2002 to Dec.2002.
- To ensure regular payment over the next four years, cash incentive shall be provided every six months @ 6% in the first year (i.e. 2002-03), 5% in the second year and 4% in the subsequent two years on the value of the bonds issued.
- In case of failure to open/maintain LC or default in making payment of current dues within 60 days, graded reduction in power supply is envisaged and in case defaults continues for more than 90 days, payments remaining outstanding would be recovered from States' RBI account.

Tripartite Agreements under the Scheme have been signed on 20<sup>th</sup> March 2003 between Government of India, Reserve Bank of India and 24 States.

Most of the SEBs and power utilities of the above states have also enhanced their LCs to the required level and are making full payment of current bills.

In case of the Union Territories an alternate payment mechanism involving the Central Government and the Union Territories / Administration is being separately worked out.

The company has received 8.5 % tax-free Bonds amounting to Rs.115032 million from fourteen State Electricity Boards in September 2003.

### CASH & BANK BALANCES

The cash and bank balances as at 31<sup>st</sup> March 2003 is Rs.5447 million as against the previous year figure of Rs.12048 million. Cash & Bank balance as percentage of total Assets is 1.10 in comparison to 2.67 in the previous year. Cash & Bank balance as percentage of total Sales is 2.86 in comparison to previous year's figure of 6.76.

### OTHER CURRENT ASSETS

The balances of other current assets as at 31<sup>st</sup> March 2003 is Rs.25142 million as against the previous year's figure of Rs.5511 million. Public Deposit Account with Government of India including interest due thereon as on 31<sup>st</sup> March 2003 is Rs.18477 million as against the previous year's figure of Rs.1611 million. Other Current Assets as percentage of total Assets is 5.10 as on 31<sup>st</sup> March 2003 in comparison to the previous year figure of 1.22.

### LOANS & ADVANCES

The balance of loans and advances as at 31<sup>st</sup> March 2003 is Rs.21482 million as against the previous year figure of Rs.14736 million. Loans & Advances as percentage of total assets is 4.35 in comparison to previous year figure of 3.27.

Loans to employees granted for purchase of residential houses, cars and other assets are recovered regularly from the salary of the employees as per terms of sanction. Advance payment of income tax represents the tax liability for the year ended 31.3.2003 and that for earlier years. The company's liability towards income tax for the year ended has been fully provided for.

During the year the company has provided Rs. 3 million against doubtful loans and advances and also withdrawn Rs. 10 million from the provision.

### CURRENT LIABILITIES

The balances of current liabilities as at 31<sup>st</sup> March 2003 is Rs.34202 million as against the previous year's figure of

Rs.31881 million. Other liabilities represent amount of income tax deducted at source, redemption amount payable on maturity of bonds, sales tax payable etc.

### PROVISIONS

The balances of provisions as at 31<sup>st</sup> March 2003 is Rs.11648 million as against the previous year's figure of Rs.16265 million.

During the year company has paid interim dividend of Rs. 4000 million. Final dividend of Rs.3080 million has been proposed and thus the total dividend for the year is Rs.7080 million as against Rs.7079 million of the previous year. Provision for Tax on the proposed dividend has been made for Rs.395 million.

### CONTINGENT LIABILITIES

The contingent liabilities as at 31<sup>st</sup> March 2003 are Rs.20483 million as against the previous year's figure of Rs.14203 million. The increase in contingent liabilities is mainly in respect of claims against the Company not acknowledged as debts for capital works and land compensation cases.

### RESULTS OF OPERATIONS

	Year ended 31 <sup>st</sup> March	
	(Rs. million)	
<b>Income</b>	<b>2003</b>	<b>2002</b>
Sales (including energy internally consumed)	<b>190206</b>	177868
Consultancy Project Management and Supervision fees	<b>269</b>	285
	<b>190475</b>	178153

NTPC recorded a turnover of Rs. 190206 million during 2002-03 as against Rs. 177868 million during 2001-02. Sales during the year has been provisionally recognised and accounted for on the basis of tariff worked out as per Central Electricity Regulatory Commission (CERC) Regulations 2001 pending final determination of tariff by the CERC.

### CONSULTANCY WING

Consultancy Wing, an ISO 9001 certified unit of NTPC, achieved turnover of Rs. 227 million and earned profit of Rs. 68 million during the year 2002-03.

The Consultancy Wing has secured 31 orders valued at Rs.443.60 million during the year and is executing procurement assignments for National Aids Control Organisation, Ministry of Health and Family Welfare funded by World Bank and for Department of Information & Technology, Govt. of India.

## PROVISIONS WRITTEN BACK

Provisions written back during the year 2002-03 are Rs.3988 million whereas in the previous year the figure was Rs.107 million. Provisions are reviewed at the end of the year and the amount is withdrawn wherever they are no longer required.

## OTHER INCOME

Other income for the year ended 31<sup>st</sup> March 2003 is Rs.4036 million in comparison to previous year's figure of Rs.6725 million.

Other income includes Rs. 138 million and Rs.86 million towards receipts under loss of profit policy and receipt under Machinery Break Down/Fire policy respectively.

## EXPENDITURE

The details of the expenditure for the year ended 31<sup>st</sup> March 2003 and 2002 and the cost per million units is given below:

	Year ended 31 <sup>st</sup> March			
	2003		2002	
	Per million units	(Rs. million)	Per million units	(Rs. million)
Fuel	110312	0.798	103991	0.781
Employees Remuneration and Benefits	8213	0.059	8036	0.060
Generation, Administration and other Expenses	10869	0.078	11640	0.087
Depreciation	15291	0.111	13784	0.104
Provisions	5555	0.040	1836	0.014
Interest and Finance Charges	9916	0.072	8677	0.065
<b>Total</b>	<b>160156</b>	<b>1.158</b>	<b>147964</b>	<b>1.111</b>

### Fuel

Increase is due to increase in generation by 5098 million units and increase in the fuel cost.

### Generation, Administration & Other Expenses

Water charges have reduced due to provision of Rs. 968 million made in the previous year at one of the Station as per demand received including for earlier years.

### Depreciation

Increase in depreciation is mainly due to capitalisation of unit I & II of Simhadri STPP and due to provision for depreciation on additional items of machinery spares identified during the year.

### Provisions

Increase in provisions is mainly due to increase in provision for doubtful debts amounting to Rs. 4140 million in the current year as against Rs.699 million in the previous year.

Provision for bad and doubtful debts provided as a percentage of sales during the year works out to 2.17 % in comparison of 0.39 % in the previous year.

## Interest & Finance Charges

Difference in interest and finance charges is mainly due to waiver of guarantee commission by the Government of India amounting to Rs. 1731 million accounted for in the last year.

## PROFIT

Profit before tax works out to Rs. 37540 million during the current year against previous year's Rs.37521 million.

As per CERC Tariff Regulations, income tax payable on generation income is recoverable from the State Electricity Boards. Accordingly, provision for income tax (net) for the year is Rs.1465 million (previous year Rs.2125 million).

Profit after tax works out to Rs. 36075 million against Rs.35396 million for the previous year.

## INTERNAL CONTROL

The Company has a sound system of Internal Controls for financial reporting of various transactions, efficiency of operations and compliance with relevant laws and regulations. Suitable delegation of power and guidelines for accounting have been issued for uniform compliance. In order to ensure that all checks and balances are in place and all internal control systems are in order, regular and exhaustive internal audits are conducted by experienced auditing firms in close co-ordination with Company's own Internal Audit Department. Besides, the Company has two active Committees of the Board viz. Audit Committee and Committee on Management Controls which periodically review the important findings of different Audits keeping a close watch on compliance with Internal Control System.

## CAUTIONARY STATEMENT

Statements in the Management Discussion and Analysis and in the Directors' Report, describing the Company's objectives, projections and estimates, are forward-looking statements and progressive within the meaning of applicable laws and regulations. Actual results may vary materially from those expressed or implied, depending upon economic conditions, government policies and other incidental factors.

For and on behalf of the Board of Directors

  
(C.P. JAIN)

CHAIRMAN & MANAGING DIRECTOR

Place : New Delhi

Date : 23<sup>rd</sup> September 2003

## **CORPORATE GOVERNANCE**

Being a responsible corporate citizen the company has consistently, over the years been practicing the principles of good Corporate Governance and always deals transparently with every individual/organisation who/which comes in its contact. The undernoted information, mostly modeled on the SEBI's Code on Corporate Governance, is furnished on a voluntary basis.

### **COMPANY'S PHILOSOPHY ON CORPORATE GOVERNANCE**

As a good corporate citizen, the company is committed to sound corporate practices based on conscience, openness, fairness, professionalism and accountability in building confidence of its various stakeholders in it thereby paving the way for its long term success.

### **BOARD OF DIRECTORS**

#### **Composition**

As on 31<sup>st</sup> March 2003 the Board comprised eleven directors. Out of these six are functional directors including the Chairman & Managing Director (CMD), two directors are nominated by the Government of India and three are independent directors. The directors bring to the Board wide range of experience and skills.

#### **Age limit and Tenure of Directors**

The age limit of whole-time functional directors including the Chairman & Managing Director is 60 Years.

The Functional Directors including CMD are appointed for a period of five years from the date of taking over of charge or till the date of superannuation of the incumbent, or till further instructions from the Government of India, whichever event occurs earlier.

Government Nominees representing Ministry of Power, Government of India retire from the Board of NTPC on ceasing to be officials of the Ministry of Power.

Part-time Non-official Directors are appointed by the Government of India for a tenure of three years.

#### **Board Meetings**

The meetings of the Board of Directors are held at the company's registered office in New Delhi.

Board meetings are scheduled well in advance and are governed by structured agenda. Agenda papers along with explanatory notes are distributed in advance to the Board Members to enable them to take informed decisions. At the beginning of each Meeting, the Chairman & Managing Director also briefs the Board members about the key developments relating to the Company in diverse areas.

The minutes of each Board Meeting are circulated for confirmation by the Board at its next meeting.

During the financial year 2002-03, nine meetings of the Board were held on 12th April, 19th June, 18th July, 27th August, 23rd September, 28th October; 17th December, 24th February and 17th March .

The maximum interval between any two meetings during this period was 80 days.

Details of designation, category of directors, number of Board meetings attended, attendance at last AGM, number of other directorship/committee membership (viz, Audit Committee, Shareholders' Grievance Committee and Remuneration Committee as per SEBI's Corporate Governance Code) held by them during the year 2002-03 are tabulated below:



Sl.No	Directors	Meeting held during respective tenures of Directors	No. of Board Meeting Attended	Attendance at the last AGM	Number of other Directorships held	Number of Committee memberships in companies (including this company)	
						As Chairman	As Member
	<b>FUNCTIONAL DIRECTORS</b>						
1	Sh. C.P.Jain Chairman & Managing Director	9	9	Yes	3	-	-
2	Sh. P.Narasimharamulu Director (Finance)	9	9	Yes	4	-	-
3	Sh. H.L. Bajaj Director (Commercial) (Upto 01.07.2002)	2	2	No	2	-	-
4	Sh. B.N Ojha, Director (Operations)	9	8	Yes	5	1	-
5	Sh. K.K. Sinha Director (HR)	9	8	Yes	4	-	-
6	Dr. A. Palit Director (Technical) (Upto 31.05.2002)	1	1	No	-	-	-
7	Sh. T.Sankaralingam Director (Projects)	9	9	Yes	5	-	-
8	Sh. S.L. Kapur Director (Technical) (From 01.06.2002) <b>GOVERNMENT NOMINEES</b>	8	7	Yes	6	-	-
9	Sh. M.Sahoo JS&FA,MOP (From 11.07.2002)	7	7	Yes	5	1	2
10	Sh. Ajay Shankar JS(Thermal), MOP (From 23.05.2002 to 16.09.2002 and from 17.12.2002)	6	6	Yes	2	-	-
11	Sh. Arvind Jadhav JS(Thermal), MOP (Upto 23.05.2002)	1	1	No	1	-	-
12	Sh. R. Ramanujam JS&FA,MOP (Upto11.07.2002)	2	2	No	5	-	-
13	Sh. N.S. Sisodia Spl. Secretary, MOP (From 16.09.2002 to 08.10.2002) <b>PART-TIME NON-OFFICIAL DIRECTORS</b>	1	1	No	-	-	-
14	Prof. Ashok Misra Director, IIT, Mumbai	9	6	Yes	2	-	1
15	Sh. R.V Shahi Chairman, BSES (Upto 15.04.2002)	1	-	No	10	-	-
16	Sh. Deepak S. Parekh # Chairman, HDFC	8	4	No	14	4	4
17	Dr. R.K. Pachauri Director General, TERI	5	3	Yes	2	-	-

# Excluding the directorships mentioned above, Sh. Deepak S. Parekh is an alternate Director in 5 companies.

## ANNUAL GENERAL MEETING

The Annual General Meeting of the last three years were held on 28th September 2000; 25th September 2001 and 23<sup>rd</sup> September 2002. All the meetings were held at the registered office of the Company. No postal ballots were used for voting.

## COMMITTEES OF THE BOARD OF DIRECTORS

The Board has established the following Committees:-

- Audit Committee
- Committee on Management Controls
- Sub-Committee of the Board for Contracts
- Project Sub-Committee
- Investment/Contribution Sub-Committee
- Sub-Committee of the Board for allotment and post-allotment activities of Bonds

### Audit Committee

The Audit Committee was constituted on 3<sup>rd</sup> August, 1995 much prior to introduction of Section 292A in the Companies Act, 1956 and Clause 49 of the Listing Agreement with the Stock Exchanges as per SEBI Guidelines. The scope of the Committee was modified on 8<sup>th</sup> January 2001 to bring it in line with the provisions of section 292A of the Companies Act, 1956.

### Terms of reference

The function of Audit Committee is to discuss with the Auditors periodically about Internal control systems and the scope of audit including the observations of the Auditors, to review the half yearly and annual financial statements before submission to the Board, to ensure compliance with Internal Control System and to investigate into any matter in relation to the above items or as referred to it by the Board.

### Composition

As on 31-03-2003, the Audit Committee comprised the following members:-

- Shri B.N. Ojha, Director (Operations), NTPC
- Shri M. Sahoo, Part-time Director
- Prof. Ashok Misra, Part-time non-official Director
- Director (Finance), Head of Internal Audit and the Statutory Auditors are also invited in the Audit Committee Meeting but they have no right to vote. Quorum for the Audit committee is two members of which one is a Part-time Director.

### Meetings and Attendance

Three meetings of Audit Committee were held during the financial year 2002-03 on 18th July, 23rd September and 11<sup>th</sup> November. The details of the meetings of Audit-Committee attended by the members are as under:-

Members of Audit Committee	Meeting attended
• Shri B.N. Ojha (Chairman of the Committee)	3
• Shri M. Sahoo	3
• Prof. Ashok Misra	1

### **Committee on Management Controls**

On being conferred enhanced autonomy by the Government of India under 'Navratna Guidelines', this committee was constituted on 15<sup>th</sup> March 2001 for establishing transparent and effective system of internal monitoring with membership of non-official Director. As per terms of reference the committee reviews the Management Control System, significant deviations in project implementation and construction, operation and maintenance budgets etc.

As on 31<sup>st</sup> March 2003 following four Directors comprised this committee:

- Shri B.N.Ojha, Director (Operations)
- Shri P. Narasimharamulu, Director (Finance)
- Shri M. Sahoo, Part-time Director
- Prof. Ashok Misra, Part-time non-official Director

Quorum for the Committee on Management Controls is two members of which one shall be Part-Time Director.

Two meetings of this committee were held during the financial year 2002-03 on 11th November and 17th March.

The details of meetings attended by the members are as under:-

<b>Members of Committee</b>	<b>Meeting attended</b>
• Shri B.N. Ojha (Chairman of the Committee)	2
• Shri P. Narsimharamulu	2
• Shri M. Sahoo	2
• Shri Ashok Misra	Nil

### **Sub-Committee for Contracts**

This committee has been constituted for approval of award of contracts of value exceeding Rs. 25 crore but not exceeding Rs. 100 crore and Overseas Consutancy Contracts exceeding Rs. 2 crore.

The following are members of Sub-Committee for contracts:

- Shri C.P. Jain, Chairman & Managing Director
- Shri P. Narasimharamulu, Director (Finance)
- Shri S.L. Kapur, Director (Technical)
- Shri T. Sankaralingam, Director (Projects)
- Shri Ajay Shankar, Part-time Director
- Shri M.Sahoo, Part-time Director

Quorum for the Sub-committee for contracts is four members.

### **Meetings and Attendance**

Four Meetings of this committee were held during the financial year 2002-03 on 19<sup>th</sup> April, 14<sup>th</sup> August ,18<sup>th</sup> September and 20<sup>th</sup> October.

The details of the meetings attended by members of this Committee are as under:

<b>Directors</b>	<b>Meeting Attended</b>
• Shri C.P. Jain	4
• Shri P. Narasimharamulu	4
• Shri T.Sankaralingam	4
• Shri Ajay Shankar #	1
• Shri S.L.Kapur	2
• Shri M.Sahoo	3

# Only one meeting of Sub-Committee for Contracts was held during the tenure of Shri Ajay Shankar in the year 2002-03.

## Project Sub-Committee

The Project Sub-Committee examines and makes recommendation to the Board on proposals for Investment in New/Expansion Projects and Feasibility Reports of new projects.

As on 31<sup>st</sup> March 2003, the Committee comprised the following members:

- Shri C.P. Jain, Chairman & Managing Director
- Shri P. Narasimharamulu, Director (Finance)
- Shri B.N. Ojha, Director (Operations)
- Shri S.L. Kapur, Director (Technical)
- Shri T. Sankaralingam, Director (Projects)
- Shri Ajay Shankar, Part-time Director (from 16.9.02)
- Prof. Ashok Misra, Non-official Part-time Director
- Shri H.L. Bajaj, Director (Commercial) (upto 1.7.02)
- Member (Th.), CEA (if nominated on the Board)
- Shri N.S. Sisodia, Part-time Director (upto 8.10.02).

Quorum for this Sub-Committee is four members including one part-time Director.

Three meetings of the Project Sub-Committee were held during the financial year 2002-03 on 24th September, 13th January and 15th February.

The details of the meetings of the committee attended by the members are as under:-

Members of Committee	Meeting Attended
• Shri C.P. Jain	3
• Shri B.N. Ojha	3
• Shri P. Narasimharamulu	3
• Shri T. Sankaralingam	3
• Shri S.L. Kapur	3
• Shri N.S. Sisodia	1
• Prof. Ashok Misra	2
• Shri Ajay Shankar	-
• Shri H.L. Bajaj	-

## Investment / Contribution Sub-Committee of the Board

The terms of reference of Investment/Contribution Sub-Committee of Board is deployment of funds as per Govt. Guidelines issued from time to time, and acceptance of Bonds/Debt Instruments in lieu of settled dues with State Electricity Boards or State Transmission Companies and deciding terms and conditions thereof. This committee also approves contribution/donation for national, public, benevolent or charitable cause, purpose or object or other funds not directly related to the business of the company or welfare of its employees between Rs. 5 lakh to Rs. 20 lakh subject to maximum limit of Rs. 1 crore in a year.

As on 31<sup>st</sup> March 2003, the Committee comprised the following four Members:

- Shri C.P. Jain, Chairman & Managing Director
- Shri P. Narasimharamulu, Director (Finance)
- Shri B.N. Ojha, Director (Operations)
- Shri K.K. Sinha, Director (HR) / Director (Commercial)

13 meetings of Investment/Contribution Sub-Committee of the Board were held during the financial year 2002-2003 on 1st April, 2nd April, 19th April, 8th May, 15th May, 24th May, 4th June, 18th June, 3rd September, 16th September, 24th September, 24th December and 18th March.

The details of the meetings of the committee attended by the members are as under:-

Members of Committee	Meeting attended
• Shri C.P. Jain	13
• Shri B.N. Ojha	12
• Shri P. Narasimharamulu	13
• Shri K.K. Sinha	11

### **Sub-Committee of the Board for Allotment and Post-Allotment Activities of Bonds**

The Board has constituted a Sub-Committee for Allotment and Post-allotment activities of Bonds. The scope of work of this committee is allotment of Bonds, issue of Bond Certificate/Letter of allotment, issue of duplicate certificates, consolidation/split of Bonds etc.

The Committee comprised the following three Members:

- Shri P. Narasimharamulu, Director (Finance)
- Shri B.N. Ojha, Director (Operations)
- Shri T. Sankaralingam, Director (Projects) or Shri K.K.Sinha, Director (HR) or Shri S.L.Kapur, Director (Tech.)

Twelve meetings of this Committee were held during the financial year 2002-2003 on 18th April, 30th April, 8th May, 11th July, 25th July, 1st August, 6th August, 24th August, 24th October, 31st October, 4th February and 25th February.

The details of the meetings of the committee attended by the members are as under:-

<b>Members of Committee</b>	<b>Meeting attended</b>
• Shri P. Narasimharamulu	12
• Shri B.N. Ojha	11
• Shri T. Sankaralingam/Shri K.K.Sinha	11

NTPC being a Central Public Sector Undertaking, the appointment, tenure and remuneration of Directors are decided by the President of India. Hence, the Company has not constituted a Directors' Remuneration Committee. The Part-time Directors representing Government of India do not receive any remuneration from the Company. The Part-time Non-official Independent Directors received sitting fee of Rs. 5,000/- for each Meeting of Board or Committee thereof attended by them.

Since entire paid-up share capital of NTPC is held by the President of India and his seven nominees, there are only eight Shareholders of NTPC. Therefore no Shareholders' Committee has been constituted.

### **MEANS OF COMMUNICATION**

In order to make the general public aware of the achievements of the company, a press conference is held immediately after the close of the financial year where the highlights of the company during the year are briefed to the Press for information of the stakeholders. Also, after the Annual General Meeting another press conference is held for communicating the audited results of the company.

Company's Annual Accounts are also made available on the Company's web site i.e. [www.ntpc.co.in](http://www.ntpc.co.in) after the Annual General Meeting.

For and on behalf of the Board of Directors



**(C.P. JAIN)**

**CHAIRMAN & MANAGING DIRECTOR**

**Place : New Delhi**

**Dated : 23.9.2003**

**Annexure-III to Directors' Report**

**STATEMENT PURSUANT TO SECTION 212 OF THE COMPANIES ACT, 1956 RELATING TO SUBSIDIARY COMPANIES**

	<b>NAME OF THE SUBSIDIARY</b>	<b>PIPAVAV POWER DEVELOPMENT COMPANY LTD.</b>	<b>NTPC ELECTRIC SUPPLY COMPANY LTD.</b>	<b>NTPC VIDYUT VYAPARNIGAM LTD.</b>	<b>NTPC HYDRO LTD.</b>
1.	Financial year of the Subsidiary ended on	31 <sup>ST</sup> March, 2003	31 <sup>ST</sup> March, 2003	31 <sup>ST</sup> March, 2003	31 <sup>ST</sup> March, 2003
2.	Date from which they became Subsidiary	20 <sup>th</sup> December, 2001	21 <sup>st</sup> August, 2002	1 <sup>st</sup> November, 2002	12 <sup>th</sup> December, 2002
3.	Share of the subsidiary held by the company as on 31 <sup>st</sup> March, 2003 a) Number & face value  b) Extent of holding	360000 equity shares of Rs. 10/- each  100%	50000 equity shares of Rs. 10/- each  100%	50000 equity shares of Rs. 10/- each  100%	50000 equity shares of Rs. 10/- each  100%
4.	The net aggregate amount of the subsidiary companies Profit/(loss) so far as it concerns the member of the holding company  a) Not dealt with in the holding company's accounts  i) For the financial year ended 31 <sup>st</sup> March, 2003 ii) Upto the previous financial years of the subsidiary company  b) Dealt with in the holding company's accounts  (i) For the financial year ended 31 <sup>st</sup> March, 2003.  (ii) For the previous financial year of the subsidiary company since they become the holding company's subsidiaries	   Rs. 21201*  Rs. 4515*    Nil  Nil	   (Rs. 29493)  Not Applicable   Nil  Nil	   (Rs. 131785)  Not Applicable   Nil  Nil	   Rs. 16393*  Not Applicable   Nil  Nil

\* Pre-operative expenses carried forward to Balance Sheet

For and on behalf of Board of Directors

**Place : New Delhi**  
**Dated : 23.9.2003**



**(C.P. JAIN)**  
**CHAIRMAN & MANAGING DIRECTOR**

**PARTICULARS REQUIRED UNDER THE COMPANIES (DISCLOSURE OF PARTICULARS IN THE REPORT OF THE BOARD OF DIRECTORS), RULES 1988**

**A. CONSERVATION OF ENERGY**

**(a) Energy conservation measures taken**

Some of the important energy conservation measures taken during the year 2002-03 in different areas are as under:

**Energy Audits**

During the year 2002-03, 138 in-house energy audits in the areas of auxiliary power consumption, water balance, cooling water system, compressed air, coal handling plant, ash handling system, boilers, turbines, GT Compressors, GT open cycle efficiency, WHRB, lighting, thermal insulation were carried out at different stations. To enhance competency of energy auditors, seven training programmes on 'Practical energy audit' at different project sites of NTPC were held.

**Auxiliary Power Consumption**

Using vapour absorption system of air conditioning, ambient condition based and actual requirement based operation of Circulating Water system auxiliaries and air handling units, reduction in load on boiler draft system equipment by attending duct leakages, optimising ash to water ratio and using 0.5 w LED indicating lamps in place of conventional 7w lamps etc.

**Heat Energy**

Repair of thermal insulation, periodic cleaning of condenser water boxes and tubes etc.

**Fuel Oil**

Recycling of dirty lubricating oil into fuel oil cycle, using Trevy Test method during safety valve floating etc.

**DM Water**

Attending to DM water/steam leakages etc.

**Miscellaneous Water**

Performance based chemical treatment of water and maintaining appropriate Cycle of Concentration in Circulating Water system, controlling ash water ratio.

**Diesel/ MGR Fuel**

Using energy efficient piston ring kits in locos, reduction in idle running of locos, dozers etc.

**Lubricants**

Recovering waste oil, purifying and reusing the same and attending leakages in the lubricating oil systems etc.

**Lighting**

Using energy efficient lamps and gadgets like Compact Fluorescent Lights, electronic chokes, timers etc.

**Non Conventional Energy**

Using solar water heaters.

**(b) Additional investment and proposals for reduction in consumption of energy:**

- Provision of Rs.359 lakh has been kept in BE 2003-04 for various energy conservation schemes like:
  - Energy Audit Instruments
  - Energy Efficient devices in lighting
  - Vapour Absorption System for Air Conditioning
  - Solar Water Heaters
  - Soft Starter for Motors
  - FRP Blades for CT Fans

**c) Impact of the measures taken at (a) above**

Sl. No.	Area /Activity	Energy Unit	Savings Qty. of Units	Rs.(Million)
1.	Electrical (including 8.91 MU in lighting)	MU	153.813	217.536
2.	Heat Energy(equivalent to MT of coal)	MT	71438.04	54.009
3.	Fuel Oil	KL	1276.08	13.127
4.	DM Make up water	MT	66852	.234
5.	Miscellaneous Water	M.Cu. M	18.749	21.611
6.	Diesel/MGR Fuel	KL	65.23	1.485
7.	Lubricants	KL	262.531	6.776
8.	Gas/Naphtha	MT	42.9	.570
9.	Chemicals/Misc.			1.306
<b>Total</b>			<b>316.654</b>	

Saving achieved during 2002-03 on account of specific efforts for energy conservation:-

Savings achieved during 2001-2002 = Rs. 295.163 Million

**B. TECHNOLOGY ABSORPTION**

Efforts made towards technology absorption as per Form-B  
(Form-B is enclosed)

**C. FOREIGN EXCHANGE EARNINGS AND OUTGO**

Activities relating to export initiative taken to increase export, development of new export markets for products and services and export plan :

Total Foreign Exchange Used/ Earned (2002-03) Rs. Million

**1. Foreign Exchange Outgo**

a) Value of Imports calculated on CIF basis	
Capital Goods	529.07
Spare Parts	604.11
b) Expenditure	
Professional and Consultancy Charges	43.60
Interest	2070.16
Others	13016.88

**2. Foreign Exchange Earned**

Consultancy	1.37
Interest	1.79
Others	1.29



**FORM B**  
**FORM FOR DISCLOSURE OF PARTICULARS WITH RESPECT TO**  
**ABSORPTION OF TECHNOLOGY**

**RESEARCH & DEVELOPMENT (R&D)**

**1.0 Specific Areas in which R&D Activities have been carried out during 2002-03:**

- a. Health assessment of -  
critical components of the operating stations, both coal & gas fired, giving clear-cut recommendations for run/repair/refurbish/replace and transformers/ Reactors through DGA, furfural content etc.
- b. Development of -  
scale / corrosion inhibitor for controlling scaling, fouling and corrosion in cooling water systems of power plant, test for natural frequency of turbine blades and its applications in power plants and procedure for removal of fouling of WHRBs due to acid dew point corrosion.
- c. Studies on -  
effects of steam impurities on turbine blades, effects of chloride and sulphate on stainless steel condenser tubes and behaviour of different forms of Sulphur on combustion of coal.
- d. Failure analysis of boiler & turbine components like boiler tubes, turbine blades etc.
- e. Condition monitoring of locomotives through wear - debris analysis and development of web based software for condition monitoring.
- f. Analysis of various problems of equipment vibrations and providing solutions for the same.
- g. Scientific investigations of some used GT components to assess their condition for further use.
- h. Development of residual life estimation of turbine oils by RBOT method.
- i. Creation of new facilities
- j. Significant increase in the provision of R&D services to other utilities.
- k. Environment audit of NTPC stations to ensure proper environmental monitoring and control.

**2.0 Benefits derived as a result of above R&D:**

- i) Through regular and systematic health assessment by way of latest NDT techniques, the life of hot gas path components like liners could be further extended beyond their expected life resulting into significant savings.
- ii) R&D analyzed the high vibration problems in CW pumps at Pragati Power, Delhi (due to which they were not able to commission the units) and established resonance problem as the cause. Stiffeners were provided that brought down the vibration because of which units could be commissioned.
- iii) R&D developed the Natural Frequency Test (NFT) method by which it is possible to pin-point the looseness of LP Turbine blades in the roots, cracks in the rotor, looseness of lacing wires, etc. This was demonstrated successfully in number of NTPC stations and other Utilities and based on the findings, remedial measures could be taken in time. This will reduce the forced outages in the stations.

- iv) Due to development of Web based software for condition monitoring of locomotives possible failures of some of the locomotives could be averted resulting into huge savings.
- v) Due to systematic health assessment of Transformers, number of transformers could be saved from incipient failures.
- vi) Chemical formulation development by R&D with commercially available chemicals in the Indian market to reduce scaling / corrosion / fouling in a cost effective manner and thereby improving heat transfer, efficiency and reliability of the CW system.
- vii) R&D through on-site studies developed a procedure for safe removal of fouling caused by corrosive products in WHRBs by acid dew point corrosion. The procedure has been implemented at site resulting in recovery of 2.3 MW each from two boilers.
- viii) Studies carried out on effects of steam impurities on turbine blades carried out will help in identifying the effects of various impurities on steam turbines and would thus help in preventing damages to the plant equipment and improve availability.
- ix) Development of residual life estimation of turbine oils by RBOT method will help in health assessment and extension of life of turbine oils and thus reduce maintenance.
- x) In order to make optimum use of the facilities and expertise available at R&D Centre, R&D increased its services significantly to other utilities like, Pragati Power, Delhi; HPGCL, Faridabad; SPSCCL, Durgapur & Rourkela; PSEB; Karnataka Power, NHPC, etc. as such other utilities could also benefit from the expertise available at R&D Centre.
- xi) Environment audit carried out by R&D at all NTPC stations lead to further improvement in the environment monitoring system existing at the power stations.
- xii) Because of the scientific investigations of the used GT components carried out, the components having remnant life were identified and utilized thereby the unit could be put in operation within very short time thus significantly increasing the availability.

### **3.0 Future Plan (2003-04)**

In future R&D Centre intends to work on alternate fuels, distributed power generation, new technologies, fuel cell technology, non-conventional energy sources etc. To finalize the future plans, help of IIT-Delhi and other leading National and International Institutes is being taken. The following applied research projects will also be undertaken:

Corrosion behaviour studies of seawater at higher COC for use in Ash handling system and cooling water systems at Simhadri Power Station.

Establishing mechanical properties-Hardness correlations for in-situ health assessment of UDIMET-520 GT blade material.

To define level of degradation in metallurgical microstructures & mechanical properties for determination of end life criteria of gas turbine inlet segments.

Characterization & quantification of deposits of turbine blades & other high-pressure component parts of NTPC plants using various techniques.

Life assessment of super-heater/re-heater tubes by oxide thickness measurement.

#### 4.0 Expenditure of R&D

(Rs.million)

	2002-03	2001-2002
a) Capital	3	9
b) Recurring	46	47
c) Total	49	56
d) Total R&D expenditure as a percentage of total turnover	0.0257%	0.0313%

#### Technology Absorption, Adaptation and Innovation

NTPC has been pioneering introduction, absorption and adaptation of latest generation technologies in the Indian Power Sector. Efforts continued for innovation too. The cost saving resulting from introduction of some of the innovations/technologies are as under:

Sl. No.	System Description	Saving in Cost
1.	Use of Supercritical parameters 255KG/sq.cm steam pressure & 540 C /568 C MS/RH steam temperature. (under implementation).	2.5% improvement in thermal efficiency; reduction in green-house gas emissions upto 79000 tonnes per annum CO <sub>2</sub> for a typical 500 MW unit at 68.5% Plant Load Factor.
2.	Introduction of high performance 3D twisted, hollow banana type blades for LP turbine at Simhadri and Talcher.	3.2 Kcal/KWH improvement in Turbine Heat Rate.

#### Particulars of Technologies Imported During last Five Years

Sl. No.	Technology	Year	Status
1.	Introduction of high performance 3D twisted hollow banana type blades for LP turbine at Simhadri and Talcher.	2000	Being Implemented
2.	One of the largest Sea-water intake systems in the world for closed cycle condenser cooling at Simhadri	2000	Being Implemented

For and on behalf of the Board of Directors



(C.P. JAIN)

CHAIRMAN & MANAGING DIRECTOR

Dated: 23.9.2003  
Place: New Delhi

**Annexure-V to Directors' Report**

**STATISTICAL INFORMATION ON RESERVATION OF SCs/STs FOR THE YEAR 2002**

**1. REPRESENTATION OF SCs/ STs IN NTPC**

Overall strength of employees category-wise and SCs/ STs amongst them as on 1.1.2003 is given below:

Group	Employees On Roll	SCs	% age	STs	% age
A	8521	703	8.25	82	0.96
B	3121	491	15.73	145	4.64
C	8584	1469	17.11	561	6.53
D	3176	586	18.45	303	9.54
<b>Total</b>	<b>23402</b>	<b>3249</b>	<b>13.88</b>	<b>1091</b>	<b>4.66</b>

**2. RECRUITMENT**

Total posts filled and SCs/ STs amongst them during the year 2002 is given below:

Group	Total Recruitment	SCs	% age	STs	% age
(1)	(2)	(3)	(4)	(5)	(6)
A	290	37	12.75	21	7.24
B	-	-	-	-	-
C	51	3	5.88	2	3.92
D	30	7	23.33	2	6.66
<b>Total</b>	<b>371</b>	<b>47</b>	<b>12.66</b>	<b>25</b>	<b>6.73</b>

**3. PROMOTION**

Promotions, group-wise, during the year 2002 is given below:

Group	Total	SCs	% age	STs	% age
(1)	(2)	(3)	(4)	(5)	(6)
A	1140	102	8.94	5	0.43
B	573	101	17.62	35	6.10
C	1547	276	17.84	102	6.59
D	162	25	15.43	14	8.64
<b>Total</b>	<b>3422</b>	<b>504</b>	<b>14.72</b>	<b>156</b>	<b>4.55</b>

**4. STEPS TAKEN TO FILL UP RESERVED VACANCIES**

- Exclusive advertisements/notifications covering populous belts of SCs/STs.
- Notifications of vacancies to recognised SC/ST Associations.
- Announcement of vacancies on Doordarshan/ All India Radio.
- All major vacancies involving All India Competitive Selection Tests are circulated to all accredited SC/ST Associations as prescribed under the relevant Government Directives.
- Intimation of reserved vacancies to Directors of Social Welfare Boards in States/Union Territories.
- Exchange of SC/ST vacancies in the 3<sup>rd</sup> year of carry forward.
- Award of Annual Scholarships to the following extent to SC/ST students pursuing Degree/Diploma in Engineering course is given as under:

Degree Course	Diploma Course
Rs. 1000/- p.m.	Rs. 600/- p.m.

For and on behalf of the Board of Directors



(C.P. JAIN)

CHAIRMAN & MANAGING DIRECTOR

Place: New Delhi  
Dated: September 23, 2003

**Annexure-VI to Directors' Report**

**REVIEW OF ACCOUNTS OF NATIONAL THERMAL POWER CORPORATION LIMITED, NEW DELHI FOR THE YEAR ENDED 31st MARCH 2003 BY THE COMPTROLLER AND AUDITOR GENERAL OF INDIA.**

NOTE: This review of accounts has been prepared without taking into account comments under Section 619(4) of the Companies Act, 1956, and qualifications contained in the Statutory Auditor's Report.

**1. FINANCIAL POSITION**

The table below summaries the financial position of the Company under broad headings for the last three years:

	(Rs. in Million)		
	2000-2001	2001-2002	2002-2003
<b>Liabilities</b>			
<b>a) Paid up capital</b>			
i) Government (including share application money pending allotment)	78125	78125	78125
ii) Others	-	-	-
<b>b) Reserves and Surplus</b>			
i) Free Reserves and Surplus	179458	207269	235769
ii) Foreign Project Reserve	4	4	4
ii) Capital Reserve	620	1127	1229
<b>c) Borrowings</b>			
i) From Government of India	24739	21943	1442
ii) From Financial Institutions	16487	27059	43232
iii) Foreign Currency Loans	51638	58159	55900
iv) Cash Credit	-	-	-
v) Others	5184	8651	31583
vi) Interest Accrued and Due	-	-	-
<b>d) i) Current Liabilities &amp; Provisions</b>	67325	48146	45850
ii) Provision for Gratuity	-	-	-
<b>e) i) Deferred Tax Liability</b>	-	-	1
ii) Advance Against Depreciation	-	-	271
<b>Total</b>	<b>423580</b>	<b>450483</b>	<b>493406</b>
<b>Assets</b>			
<b>f) Gross Block</b>	323073	328912	366106
<b>g) Less: Depreciation</b>	138416	152131	167456
<b>h) Net Block</b>	184657	176781	198650
<b>i) Capital Work-in-Progress &amp; Construction Stores &amp; Advances</b>	38165	65550	63863
<b>j) Investments</b>	39915	40281	36674
<b>k) Current Assets, Loans &amp; Advances</b>	160752	167799	194132
<b>l) Deferred Tax Assets</b>	-	-	-
<b>m) Misc. Expenditure not written off</b>	91	72	87
<b>n) Accumulated Loss</b>	-	-	-
<b>Total</b>	<b>423580</b>	<b>450483</b>	<b>493406</b>
<b>o) Working Capital [K- d(i) -c (vi)]</b>	93427	119653	148282
<b>p) Capital Employed [h + o]</b>	278084	296434	346932
<b>q) Net Worth [a + b(i) - (n + m)]</b>	257492	285322	313807
<b>r) Net Worth per rupee of Paid-up Capital (in Rs.)</b>	3.30	3.65	4.02

## 2. SOURCES AND UTILISATION OF FUNDS

Funds amounting to Rs.73311 Million from internal and external sources were realised and utilised during the year as detailed below:

		(Rs. in Million)	
<b>Sources of Funds</b>			
a)	Funds from operations:		
	Profit after tax	36075	
	Add: Depreciation	15325	51400
b)	Increase in Borrowings		16345
c)	Decrease in CWIP and Construction Stores & Advances		1687
d)	Decrease in Investments		3607
e)	Increase in Advance against Depreciation		271
f)	Increase in Deferred Tax Liabilities		1
	<b>Total</b>		<b>73311</b>
<b>Utilisation of funds</b>			
a)	Increase in Miscellaneous Expenditure		15
b)	Increase in Fixed Assets		37194
d)	Dividend & Dividend Tax paid		11079
e)	Increase in Working Capital (Excluding Dividend & Tax on Proposed Dividend)		25023
	<b>Total</b>		<b>73311</b>

## 3. WORKING RESULTS

The working results of the Company for the last three years ending 31<sup>st</sup> March 2003 are given below:

		(Rs. in Million)		
		2000-01	2001-02	2002-2003
(i)	Turnover (including Electricity Duty & Consultancy Income)	190650	179110	191821
(ii)	Other income	9161	6725	4036
(iii)	Profit Before Tax, Prior Period & Extra Ordinary Items	41537	37021	38343
(iv)	Prior Period & Extra Ordinary Items	798	500	803
(v)	Profit Before Tax	40738	37521	37540
(vi)	Provision for Taxation	3400	2125	1465
(vii)	Profit After Tax	37338	35396	36075
(viii)	Proposed Dividend and Dividend Tax	8232	7079	7475

## 4. RATIO ANALYSIS

Some important ratios on the financial health and working of the Company at the end of the last three years ending 31<sup>st</sup> March 2003 are as under:

		2000-01	2001-02	2002-03
i)	Liquidity ratio	2.39	3.49	4.23
	Current ratio $[k/\{d(i)+C(vi)\}]$			
ii)	Debt equity ratio	0.38	0.41	0.42
	Long term debt to net worth $\{c(i \text{ to } iii)+c(v)/q\}$			
<b>Profitability Ratios (in percentage)</b>				
a)	Profit Before Tax to :			
i)	Capital Employed $\{3(v)/p\}$	14.65	12.66	10.82
ii)	Net Worth $\{3(v)/q\}$	15.82	13.15	11.96
iii)	Turnover (including Electricity Duty & Consultancy) $\{3(v)/3(i)\}$	21.37	20.95	19.57
b)	Profit After Tax to Equity	47.79	45.31	46.18
c)	Earning per Share (in Rs)	477.92	453.07	4.62*

\* Equity Shares with face value of Rs. 1000/- each have been split into equity shares of Rs. 10/- each in the current year.

## 5. INVENTORY LEVELS

The inventory levels at the close of the last three years ending 31st March 2003 are as under:

	2000-01	2001-02	2002-03
	(Rs. in Million)		
i) Coal and Fuel Oil	5077	6757	5015
ii) Chemicals and Consumables	792	810	634
iii) Components and Spares	11802	12003	11390
iv) Loose tools Others	61	58	51
v) Other	666	589	704

## 6. SUNDRY DEBTORS

The Sundry debtors and Sales in the last three years ending 31st March 2003 are as follows:

As at 31st March	Sundry debtors			Turnover (including Electricity Duty & Consultancy)	Percentage of Sundry Debtors to Turnover
	Considered Good	Considered Doubtful	Total		
2001	95851	10708	106559	190650	55.89
2002	115328	11344	126672	179110	70.72
2003	124349	14558	138907	191821	72.41

Sundry debtors to turnover increased from 70.72 percent in 2001-2002 to 72.41 percent in 2002-2003.

The age-wise break-up of the Sundry debtors at the end of 31st March 2003 is as under:

Debtors Outstanding for	(Rs. in Million)
Less than six months	10016
Six months to one year	7127
One year to three years	60985
More than three years	60779
<b>Total</b>	<b>138907</b>

**(Revathi Bedi)**  
**Principal Director of Commercial Audit**  
**and Ex-Officio Member, Audit Board-III, New Delhi**

**Place: New Delhi**  
**Dated: 19<sup>th</sup> September, 2003**

**Comments of the Comptroller and Auditor General of India under section 619(4) of the Companies Act, 1956 on the accounts of National Thermal Power Corporation Limited for the year ended 31st March 2003.**

Comment	Management Reply
<p><b>A. Balance Sheet</b>  <b>Fixed Assets (Schedule 6)</b>  <b>Land: Freehold – Rs. 804.60 crore.</b></p> <p>Above includes deposits for Rs.15.63 crore placed with the court in connection with the cases filed by the land trustees for payment of enhanced compensation.</p>	<p>As per the accounting policy (2.3), the Company has been consistently treating the deposits relating to the land in possession as cost of land. This is also in line with the Guidance Note of the Institute of Chartered Accountants of India on 'Treatment of Expenditure During Construction Period.'</p>
<p><b>B. General</b></p> <p>(i) A reference is invited to note no.6 of Notes on accounts (Schedule 28). The Company has reconciled the surcharge income of Rs.1099.25 crore, being 40% of total surcharge outstanding as on September 30, 2001 against various customers under the securitisation scheme. Further, the Company would be entitled to interest income of Rs.1078.24 crore (upto March 31, 2003) on the bonds to be issued by the customers for a reconciled amount of Rs.8456.81 crore yielding interest at a rate of 8.5 per cent per annum with effect from October 1, 2001 under the securitisation scheme. This has not been disclosed.</p> <p>(ii) Contingent liabilities (Schedule 18) do not include a sum of Rs. 2.67 crore in respect of claim raised by a supplier towards supply of coal.</p>	<p>Under the Govt. of India scheme for one time settlement of dues of State Electricity Boards (SEBs), the State Governments are to issue 8.5% tax free bonds for agreed amount of dues and surcharge. Incentive is also payable by the Company to SEBs on compliance of certain conditions. All the three aspects of income and expenditure i.e. the surcharge income, the interest on bonds and the incentive payable as per the scheme are inter-related with the issue of bonds. As the bonds were not issued, full impact of the three aspects of the scheme could not be indicated. The factual position was disclosed in the Notes on Accounts in Schedule-28, para-6.</p> <p>The claim of the supplier is not genuine and there is no liability whatsoever.</p>

**(Revathi Bedi)**  
Principal Director of Commercial Audit  
and Ex-Officio Member, Audit Board-III, New Delhi

**(C.P. Jain)**  
Chairman & Managing Director

**Place: New Delhi**  
**Dated: 19<sup>th</sup> September, 2003**

**Place: New Delhi**  
**Date : 23<sup>rd</sup> September, 2003**



**Annexure -VII to Directors' Report**

**PARTICULARS OF EMPLOYEES PURSUANT TO SECTION 217(2A) OF THE COMPANIES ACT, 1956**

Name	Designation and Nature of duties	Remuneration	Qualification	Date of Commencement of Employment	Exp. (Yrs)	Age (Yrs)	Last Employment held
1.	2	3.	4	5	6	7	8.
Employed for the whole year							
VEDAVALLIT	STENO	27,10,211	B.A.	09/02/88	15	40	-
Employed for the part of year							
BANERJEE PK	GM	11,18,194	B Sc. (Engg.)	30/11/78	24	60	HEAVY ENGG. CO. LTD.
KHATTAR HC	SR. MGR	6,30,746	AMIE	30/06/80	22	60	INDIAN RAILWAYS
MOHINDRA MC	DGM	7,10,306	B Sc. (Engg.)	01/07/78	24	60	CEA
KHANNA JC	MGR	16,02,355	ICWA	11/03/80	22	57	IDPL
GUPTA AC	SR. MGR	20,36,845	B. Sc.(Engg.)	26/06/79	26	51	DESEIN CONSUL.
CHAKRABORTY AK	SR.MGR	26,45,483	BE (Elect.)	15/11/79	23	47	
NARASIMHAM AL	SR.MGR	22,59,260	AMIE	09/01/79	23	57	BALCO
NAIDU RVR	SR.MGR	20,40,716	DIP.CIVIL ENGG.	08/08/83	20	58	ALMCI
GUPTA SL	SR.SUPDT	11,19,977	B. Sc.(Engg.)	27/04/84	18	50	
SADASIVAM R	MGR	21,84,961	DIP. (Elect.)	15/02/82	21	54	BHEL

*Note:*

1. Persons named above are/were employees of the Company.
2. Remuneration includes salary, allowances, leave encashment, leave travel concession, payment for subsidised leased accommodation, reimbursement of medical expenses to employees and employer's contribution to Provident Fund and other funds. However, it does not include the monetary value of the medical treatment provided in the Company's dispensaries/hospitals of Project sites, since it can not be quantified employees-wise. In addition, the employees are entitled to gratuity/group insurance in accordance with Company's Rules.
3. None of the employees listed above is related to any directors of the company.

For and on behalf of the Board of Directors

**Place: New Delhi**  
**Date: September 23, 2003**

  
**(C.P. JAIN)**  
**CHAIRMAN & MANAGING DIRECTOR**

Annexure-VIII to Directors' Report

**STATISTICAL DATA OF GRIEVANCE CASES**

**2002-03**

Sl. No.	Particulars	Public Grievance Cases	Staff Grievance Cases
1.	Grievance cases outstanding at the beginning of the year	02	15
2.	Grievance cases received during the year	01	17
3.	Grievance cases disposed of during the year	03	28
4.	Grievance Cases outstanding at the end of the year	Nil	04

For and on behalf of the Board of Directors



(C.P. JAIN)

CHAIRMAN & MANAGING DIRECTOR

Place : New Delhi

Date : September 23, 2003