Nuclear Power:
India's sustainable route to **low-carbon energy**

एनपीसीआईएल
NPCIL

Nuclear Power Corporation of India Limited

Twenty-Fourth
Annual Report
2010-11

CORPORATE INFORMATION

Corporate Office, NPCIL-Nabhikiya Urja Bhavan

Registered Office
16th Floor, Centre-1,
World Trade Centre, Cuffe Parade,
Colaba, Mumbai-400005.

Corporate Office
Nabhikiya Urja Bhavan,
Anushaktinagar, Mumbai-400094.

Statutory Auditors
M/s. Kalani & Co.
Chartered Accountants, B-145B,
Kalyanpath Mangal Marg,
Bapu Nagar, Jaipur-302015,
Rajasthan.

Branch Auditors
M/s. Essveeyar
Flat No.3, Soundram,
No. 23/10, Devanathan Street,
Raja Annamaliapuram,
Chennai-600028, Tamil Nadu.

M/s. Nirmal Jain & Co.,
643, Katra Hardayal,
Chandani Chowk, Delhi-110 006.

M/s. S N K & Co
SNK House, 31-A, Adarsh Society,
Opp. Seventh Day Adventist School,
Athwalines, Surat-395001, Gujarat.

Main Banker
State Bank of India
Overseas Branch,
World Trade Centre,
Cuffe Parade, Colaba,
Mumbai-400005.

CONTENTS

India needs more energy in the next 20 years, than it did in the last 100 years.

The scale of India's energy demand is overwhelming. Our mega-democracy of 1.2 billion people, riding on a wave of economic resurgence, needs significantly large energy supplies to sustain its socio-economic development. This is critical to lift hundreds of millions of people out of poverty and to enhance quality of life.

Though we are the world's fourth-largest energy consumer, more than 20 per cent of the population does not have access to electricity. With the present per capita electricity consumption in India at about 900 units including utility, captive and renewable, the generating capacity needs doubling even for a modest living standard.

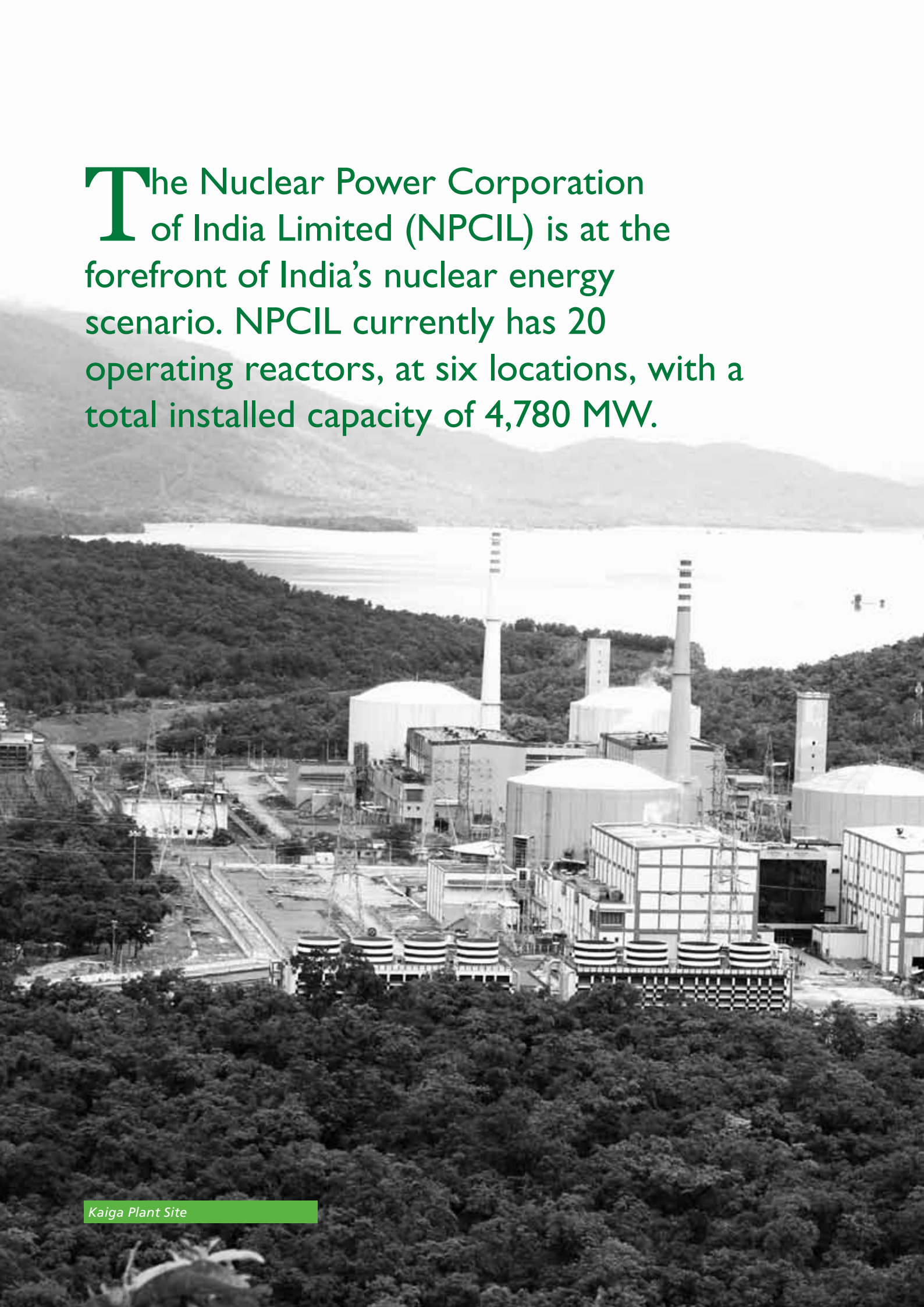
Conventional energy sources are simply inadequate to meet this demand challenge for two reasons: First, the fossil fuels are fast depleting, making it an unreliable proposition to continue to entirely depend on them; India's soaring energy import bill with violent fluctuations in price of fuel is impacting the growth plans, economic efficiency and driving fiscal deficit. **Second,** such energy sources lead to a steadily rising carbon footprint and the consequent environmental impact needs to be arrested.

Against this backdrop, nuclear power emerges as an important and attractive option for diversification of energy sources. This is even more so as other renewable energy sources, solar and wind need time for techno-commercial deployment on large scale.

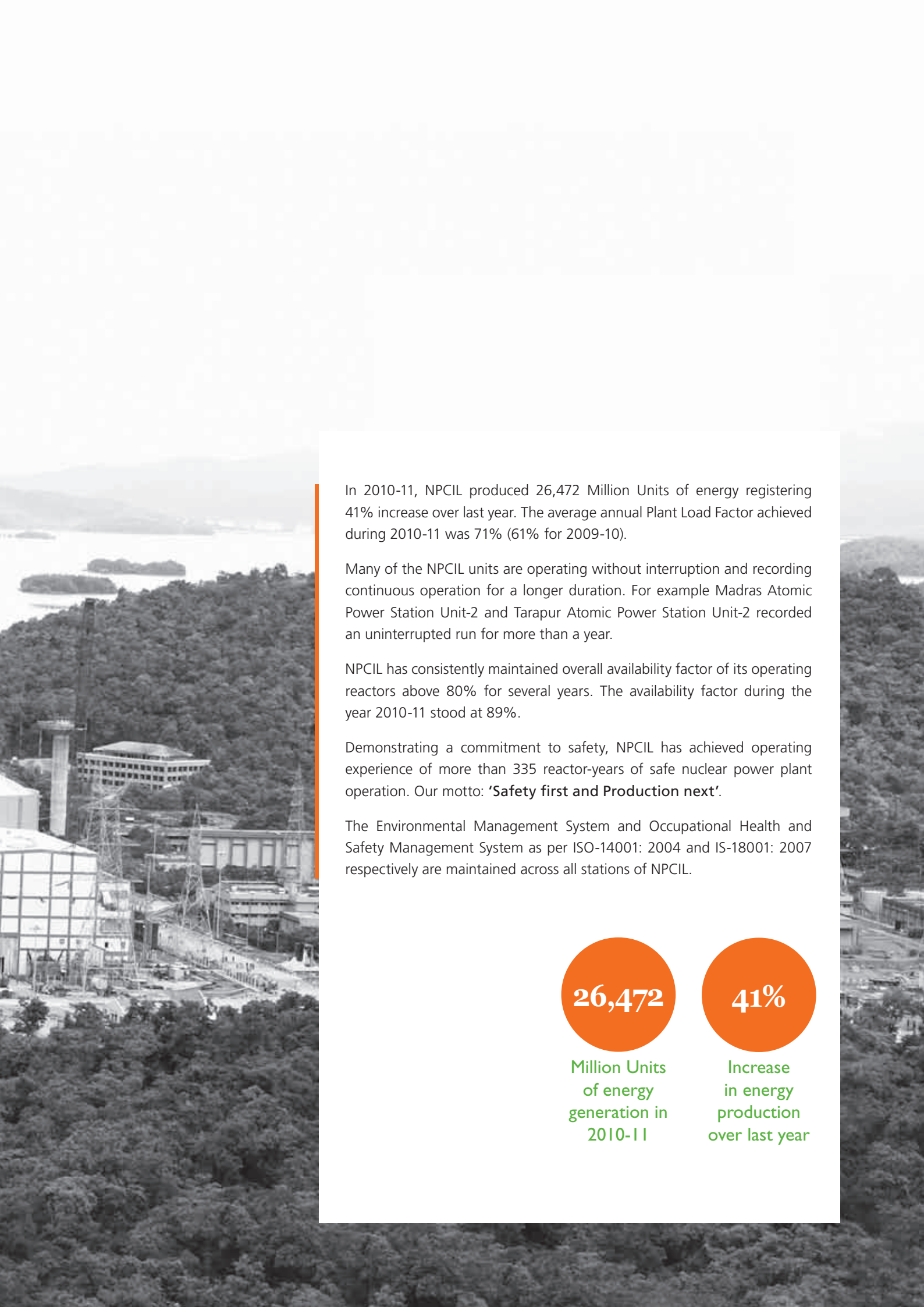
The country has plans to expand nuclear power capacity to meet the rising demand and to increase the nuclear share in electricity generation. This will enable rapid generation of clean energy devoid of carbon emissions and contribute in reduction on dependence on fossil fuels.

For a trillion dollar plus economy, like India, increase in the nuclear generation capacity is rational and an inevitable approach: as it is environmentally benign, commercially viable and ensures the energy security of the country.

The Nuclear Power Corporation of India Limited (NPCIL) is at the forefront of India's nuclear energy scenario. NPCIL currently has 20 operating reactors, at six locations, with a total installed capacity of 4,780 MW.



Kaiga Plant Site



In 2010-11, NPCIL produced 26,472 Million Units of energy registering 41% increase over last year. The average annual Plant Load Factor achieved during 2010-11 was 71% (61% for 2009-10).

Many of the NPCIL units are operating without interruption and recording continuous operation for a longer duration. For example Madras Atomic Power Station Unit-2 and Tarapur Atomic Power Station Unit-2 recorded an uninterrupted run for more than a year.

NPCIL has consistently maintained overall availability factor of its operating reactors above 80% for several years. The availability factor during the year 2010-11 stood at 89%.

Demonstrating a commitment to safety, NPCIL has achieved operating experience of more than 335 reactor-years of safe nuclear power plant operation. Our motto: **'Safety first and Production next'**.

The Environmental Management System and Occupational Health and Safety Management System as per ISO-14001: 2004 and IS-18001: 2007 respectively are maintained across all stations of NPCIL.

26,472

Million Units of energy generation in 2010-11

41%

Increase in energy production over last year

COMMITTED TO INDIA'S ENERGY SECURITY

Rajasthan Atomic Power Project - 7&8

Nuclear Power Corporation of India Limited is a public sector enterprise wholly-owned by the Government of India. NPCIL undertakes design, construction, operation and maintenance, life cycle management of nuclear power stations.

Registered
In September 1987, under the Companies Act 1956

Administrative Ministry
Department of Atomic Energy, Government of India

Governing Act
Atomic Energy Act, 1962

Generates
3% of India's total electricity with a total installed capacity of 4,780 MW.

Commitment to the society
During the year, NPCIL has formed a new Directorate on the Rehabilitation and Resettlement for new projects and for focussed implementation of Corporate Social Responsibility.

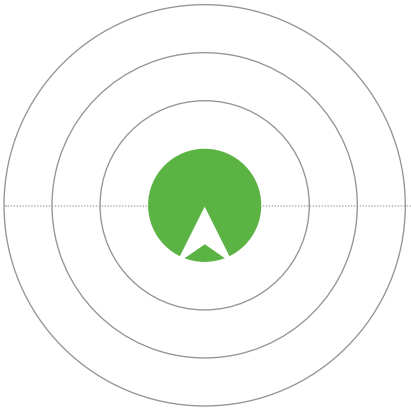
20,000 MW
Target 2020
Proposed capacity

9%
Target 2032
Nuclear power share in total energy generation

MISSION

To develop nuclear power technology and to produce Nuclear Power as a safe, environmentally benign and economically viable source of electrical energy to meet the increasing electricity needs of the country.

OBJECTIVES



To maximise the power generation and profitability from nuclear power stations with a motto of **'safety first and production next'.**

To increase nuclear power generation capacity in the country, consistent with available resources in a **safe, economical and rapid** manner in keeping with the growth of the energy demand in the country.

To continue and strengthen **Quality Assurance activities** relating to nuclear power programme within the organisation and those associated with it.

To develop personnel at all levels through an appropriate **Human Resource Development (HRD) programme** in the organisation with a view to further improve their skills and performance consistent with the high technology.

To continue and strengthen the **environmental protection measures** relating to nuclear power generation.

To continue and strengthen the **neighbourhood welfare programme/CSR activities** for achieving inclusive growth of surrounding population.

To **share appropriate technological skills and expertise** at national and international levels.

To bring about **modernisation and technological innovation** in activities.

To coordinate and endeavour to keep the **sustained association with other units of the DAE.**

FROM SMALL STEPS TO GIANT LEAPS

First Pour of Concrete at RAPP-7&8 achieved on 18th July 2011

In the preceding four decades, nuclear power technology in NPCIL has diversified **from Boiling Water Reactors (BWRs) to Pressurised Water Reactors (PWRs) and Pressurised Heavy Water Reactors (PHWRs).**

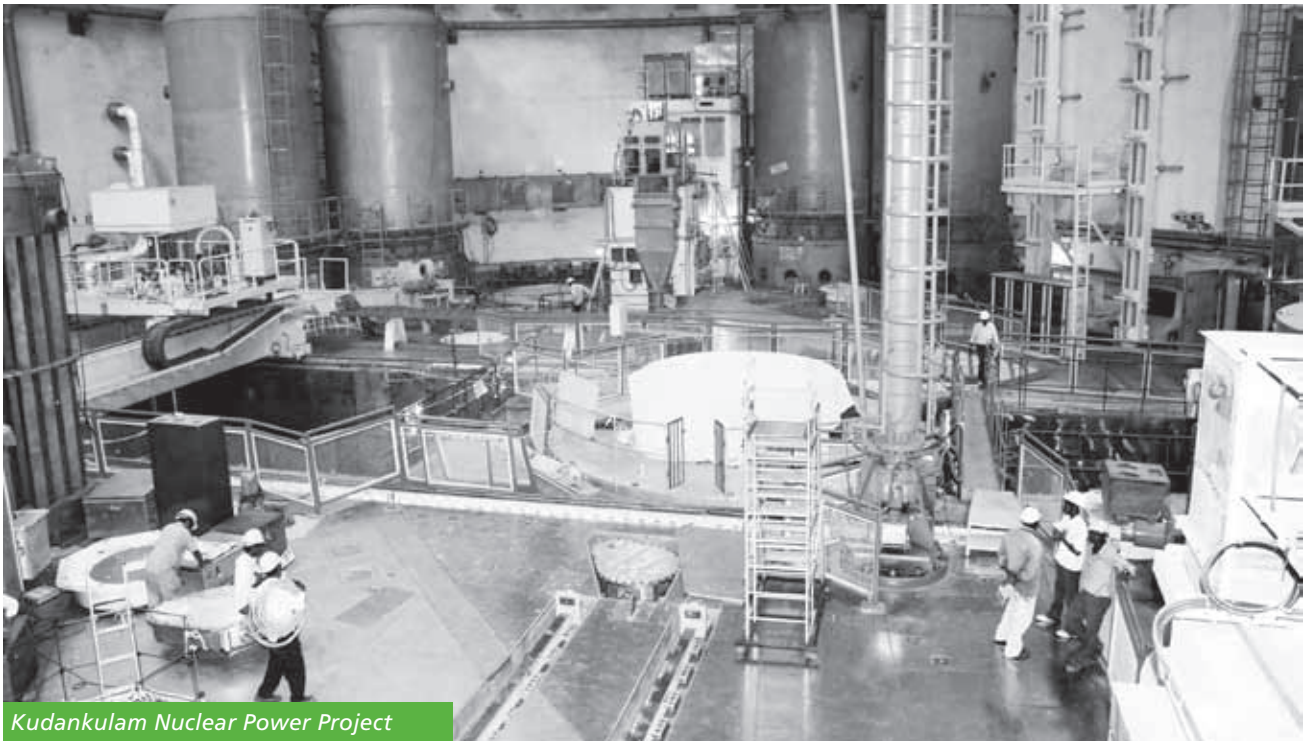
NPCIL, since its inception in 1987, has built PHWRs on a regular and sustained basis. The unit size of PHWRs has been increased **from 220 MW to 540 MW and now to 700 MW.**

NPCIL now operates 20 reactors, which includes 18 PHWRs and 2 BWRs. In addition, 2 PWRs of 1000 MW each and 4 PHWRs of 700 MW are under construction. This has been possible due to consistent government commitment to nuclear power, responsible handling of this high-end technology and excellent safety performance.

NPCIL has garnered extensive knowledge and experience in nuclear power over the years and developed technical capabilities as its core competencies. It aligned the safety strategies to international standards, achieved operational excellence, recorded long continuous runs and adhered to ISO 14001 quality standards for the environment. NPCIL has enhanced its design capabilities during these years to successfully launch the first set of indigenously designed 700 MW PHWRs at KAPS-3&4 and RAPP-7&8. These plants are expected to begin commercial operation by 2017. NPCIL has thus successfully adapted and mastered the PHWR technology.

2X1000 MW PWRs at Kudankulam being set up in cooperation with Russian Federation have reached advanced stage of completion and first unit is poised for completion during the year. Both units are expected to be in commercial operation in the year 2012. NPCIL is working towards emerging as a complete nuclear power solutions provider.

NPCIL believes in tapping other renewable sources of energy as well, and hence has set up a 10 MW wind power plant at the Kudankulam site, which generated 23 MUs during 2010-11.



Kudankulam Nuclear Power Project

SITING

DESIGNING

CONSTRUCTION

COMMISSIONING

OPERATION

MAINTENANCE

WASTE MANAGEMENT

RENOVATION & MODERNISATION

UPGRADES

PLANT LIFE EXTENSION

Provider of end-to-end solutions

NPCIL has developed its core competencies across the nuclear energy value chain: from site selection to design, construction, operations, plant maintenance, managing the waste disposal process and undertaking renovation and modernisation. It also provides integrated nuclear power solutions.

A few **REMARKABLE FACTS**

Tarapur Atomic Power Station 1&2 are in **41st year** of their operation

540 MW PHWRs are in operation at Tarapur taking the Tarapur Maharashtra Site capacity to **1400 MW**

With 6 reactors in operation and 2 under construction **Rawatbhata Rajasthan Site is India's first nuclear park**

Narora Atomic Power Station is **Asia's first NPP to get ISO-14001** accreditation for environment management system

Kakrapar Atomic Power Station was the **first Indian NPP** to undergo **peer review by WANO**

En masse coolant channel replacement has been completed in many PHWRs

ENTERING THE ATOMIC ERA

Tarapur Atomic Power Station -1&2

1940s

1948

The Indian Atomic Energy Act was enacted and the Atomic Energy Commission was set up as the policy making body to create opportunities in Indian atomic energy.

1950s

1954

In July, Dr. Homi Bhabha wrote to Jawaharlal Nehru, the architect of modern India, about his vision for a comprehensive atomic energy programme. The Department of Atomic Energy commenced operations to administer the atomic energy programmes. Dr. Bhabha began discussions with top officials of the United Kingdom, the Soviet Union and the US.

1960s

1960

In August, Tarapur, 100 km from Mumbai, was chosen as the site for setting up India's first nuclear power reactors. In October, global tenders were invited for constructing two nuclear reactors.

1964

On 8th May, an agreement was signed between the governments of India and USA, wherein General Electric, USA, was to undertake construction and commissioning of two BWRs at Tarapur. The construction commenced in October same year.

1967

The Power Project Engineering Division was incorporated under the DAE, in order to design, construct and operate nuclear power plants.

Rajastan Atomic Power Station -1&2

Tarapur Atomic Power Station -3&4

1970s

1971

The first PHWR in India, set up with Canadian collaboration at Rawatbhata, Kota, Rajasthan commenced operations.

1980s

1984

PPED was converted into Nuclear Power Board.

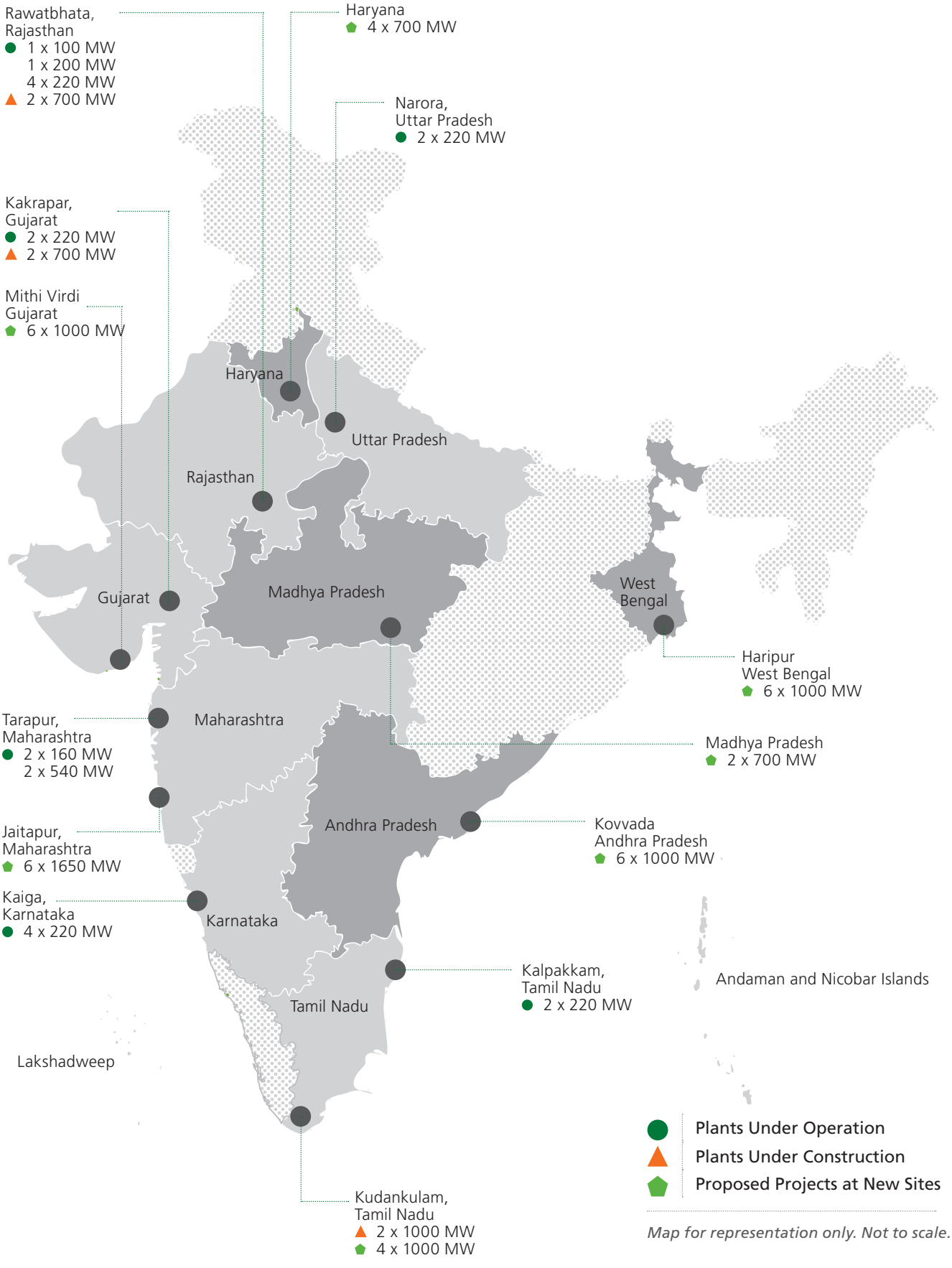
1987

In September, NPB was transformed into NPCIL with the objective of taking nuclear power in commercial domain. All the assets and liabilities of NPB, excepting RAPS-1, which is still owned by DAE, were transferred to NPCIL.

1980 - 2011

NPCIL continued to add capacity through PHWRs including two PHWRs of each 540 MW to reach total generation capacity of 4,780 MW.

PRESENCE



Map for representation only. Not to scale.

PLANTS UNDER OPERATION

	Unit	Type	Capacity MW	Date of commercial operation
Tarapur Atomic Power Station (TAPS), Tarapur, Maharashtra	1	BWR	160	28th October 1969
	2	BWR	160	28th October 1969
	3	PHWR	540	18th August 2006
	4	PHWR	540	12th September 2005
Rajasthan Atomic Power Station (RAPS), Rawatbhata, Rajasthan	1	PHWR	100	16th December 1973
	2	PHWR	200	1st April 1981
	3	PHWR	220	1st June 2000
	4	PHWR	220	23rd December 2000
	5	PHWR	220	4th February 2010
	6	PHWR	220	31st March 2010
Madras Atomic Power Station (MAPS), Kalpakkam Tamil Nadu	1	PHWR	220	27th January 1984
	2	PHWR	220	21st March 1986
Kaiga Generating Station (KGS), Karnataka	1	PHWR	220	16th November 2000
	2	PHWR	220	16th March 2000
	3	PHWR	220	6th May 2007
	4	PHWR	220	20th January 2011
Narora Atomic Power Station (NAPS), Uttar Pradesh	1	PHWR	220	1st January 1991
	2	PHWR	220	1st July 1992
Kakrapar Atomic Power Station (KAPS), Gujarat	1	PHWR	220	6th May 1993
	2	PHWR	220	1st September 1995

PLANTS UNDER CONSTRUCTION

	Capacity MW	Type	Expected commercial operation
Kudankulam Nuclear Power Project, Tamil Nadu	2 x 1000	LWRs	Unit 1 –2011 Unit 2 –2012
Kakrapar Atomic Power Project 3&4, Gujarat	2 x 700	PHWR	2016
Rajasthan Atomic Power Project 7&8, Rajasthan	2 x 700	PHWR	2017

The Government of India has given the 'In-principle' approval for setting up NPPs at the following sites in 2009. We have commenced the pre-project activities at these new sites.

PROPOSED PROJECTS AT NEW SITES

Location	Reactor Type	Capacity (MW)
Haryana	Indigenous PHWRs	4 x 700
Madhya Pradesh		2 x 700
Kudankulam, Tamil Nadu	LWRs based on international cooperation	4 x 1000
Jaitapur, Maharashtra		6 x 1650
Mithi Virdi, Gujarat		6 x 1000
Kovvada, Andhra Pradesh		6 x 1000
Haripur, West Bengal		6 x 1000

CHAIRMAN'S STATEMENT

My dear friends,

Welcome to this Annual General Meeting (AGM) of NPCIL. I look forward to this day every year, where I get an opportunity to report on progress and growth of Company, I am extremely happy to report that this year has been a total turnaround for performance of the Company.

The year gone by was full of achievements by all means, with highest ever electricity generation of **26,472 Million kWh (MUs)** recording an increase of 41%. The plant load factor was 71% registering an increase of 10%.

In all earnest, we endeavoured to deliver the trust you have been reposing in us. The production of the units remained on rise because of steady and increased fuel supply.

We are about to enter 25th year of formation of NPCIL. In these years we have established strong foundation of Company, based on excellent corporate governance with overriding priority on nuclear safety, transparency and unmatched human resource which is the backbone of our performance. Today, the Company is at a threshold of taking off to greater heights and to make a difference from here, we will realise the dream of multiplication of nuclear power in the country and not just addition.

On the front of domestic Pressurised Heavy Water Reactor programme, the units under operations demonstrated steady operations with high availability and very long continuous operations of the units. Renovation & Modernisation activities viz. En-masse Coolant Channel Replacement (EMCCR), En-masse Feeder Replacement (EMFR) together with upgrades have been completed at NAPS-2 and KAPS-1 and these reactors were synchronised to the grid during the year. Calandria vault water leakage at KAPS-1 reactor was successfully repaired using innovatively designed remote welding technique.

With the commissioning of Kaiga-4 (220 MW) during the year, the number of Nuclear Power Reactors in operation in the country has increased to 20 with a total installed capacity of 4,780 MW including RAPS-1 (100 MW) owned by the Government and operated by NPCIL. With this NPCIL has placed India among top six countries of the world which operate 20 or more reactors.

As per separation plan, Nuclear Power Plants RAPS-3&4, RAPS-5&6, KAPS-1&2, were brought under IAEA safeguards domain making it possible to fuel them with imported fuel. With this effort, now operating reactors under safeguards are operating at 100% full power,

20

With the commissioning of Kaiga-4 (220 MW) during the year, the number of Nuclear Power Reactors in operation in the country has increased to 20.

Shreyans Kumar Jain
Chairman & Managing Director

700 MW series

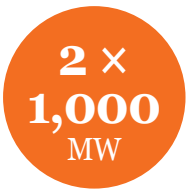
Your Company launched **first twin reactor units of 700 MW series** at Kakrapar namely KAPP-3&4.

whereas remaining 10 reactors were operating at 70% full power average.

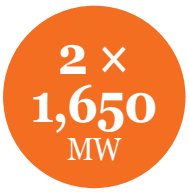
The Kudankulam Project under construction has recorded excellent progress with Unit-1 and Unit-2 achieving 98% and 93% completion respectively. In unit-1, significant milestones on the commissioning front were achieved during the year, including completion of "Hydro Test (Strength Test) of Primary Circuit at 24.5 MPa of the Nuclear Steam Supply System and Secondary Circuit at 10.8 MPa" and "Strength and Leak Rate Test of Reactor Building Containment". The preliminary works for carrying out the 'hot run' test at designed parameters were also completed.

Your Company launched first twin reactor units of 700 MW series at Kakrapar namely KAPP-3&4, marked by the First Pour of Concrete on 22nd November 2010 after receiving regulatory clearances from Atomic Energy Regulatory Board. Since then, various project activities were being executed expeditiously and simultaneously for all main plant buildings and residential colony. The manufacturing of all equipment with long delivery period is in full swing and all main plant works orders have been awarded for completion of KAPP-3&4 in the year 2016.

The first pour of concrete for two additional 700 MW PHWRs at



Techno-commercial discussions in respect of **2 x 1000 MW VVERs at KKNPP-3&4 with Atomstroyexport** are in the advanced stages of finalisation.



Techno-commercial discussions with **AREVA in respect of 2 x 1650 MW EPR units at Jaitapur Site** are in advanced stage of conclusion.

RAPP-7&8 was achieved on 18th July 2011 after receiving required regulatory clearances. Earlier, the contract for Main Plant Civil Works was awarded. The excavation of Reactor Building area has been completed and purchase orders for all major long delivery items have been placed.

During March 2011, a significant event of fuel damage at an overseas plant was reported as an aftermath of a natural event of extreme nature. As part of safety culture of your Company, it was decided promptly to set up several taskforces of technical experts to revisit the safety of Indian NPPs and to review the margins considering the extreme natural events on a deterministic basis. Even though the result of review was encouraging, not to be complacent in any way, we have decided to augment/introduce several features, like initiation of automatic reactor trip on sensing of seismic activity in plant area, additional reactor cooling water arrangements and motive force from an additional air cooled emergency diesel generator. The outcomes of these reviews have also been made public. Further, your Company has been in constant communication with several international organisations to share the observations and recommendations on the above accident on day to day basis, so that the best nuclear industry safety practices are considered for emulation in NPCIL as they evolve.

Under international civil nuclear cooperation, your Company is working towards collaboration with reputed nuclear vendors to accelerate the growth of nuclear power and to add Light Water Reactors to quickly increase generation capacities in India. The Kudankulam Project Unit-3&4 is an expansion of Unit-1&2, being implemented with cooperation from Russian Federation (RF) within the framework of the Inter-Governmental Agreement signed between Russian Federation and India signed in December 2008. A contract for the first priority design works to carry out initial design activities has been signed with Atomstroyexport and the work is in progress. The various pre-project activities were also completed. Techno-commercial discussions in respect of 2 x 1000 MW VVERs at KKNPP-3&4 with Atomstroyexport are in the advanced stages of finalisation.

The land for Jaitapur NPP has been acquired and handed over to NPCIL by the District Administration, Ratnagiri, Maharashtra. Agreement for Rehabilitation of Project Affected Families of JNPP has been signed between NPCIL and Government of Maharashtra. Pre-project activities viz. geo-technical investigations, construction of property-cum-boundary wall of Plant Site and master plan for residential complex are in progress. Further, the General Framework Agreement and Early Work Agreement between NPCIL and AREVA, France have been signed for implementation of EPR at Jaitapur Site. Techno-commercial discussions with AREVA in respect of 2 x 1650 MW EPR units at Jaitapur Site are in advanced stage of conclusion.

Earlier, the Government of India has given 'In-principle' approval for five new sites; two for indigenous PHWRs and three for LWRs based on

Company to increase production to over **32,000 Million kWh** in 2012.

foreign cooperation. The pre-project activities at new sites are in progress. These include establishment of the NPCIL offices in nearby towns, start of Environment Impact Assessment studies for MoEF clearance, studies/ surveys for arriving at the design inputs required for regulatory clearance, steps for obtaining Siting Consent from the regulator, public awareness programmes and actions for land acquisition to ready the sites for project construction within shortest time. The land acquisition applications for issuance of Section 4 notification under Land Acquisition Act, 1894 have been already submitted to the respective District Authorities in Haryana, Gujarat, Madhya Pradesh and Andhra Pradesh.

Being a national utility company operating nuclear power plants, we participated in 5th Review Meeting of contracting parties of Convention of Nuclear Safety at Vienna to demonstrate fulfilment of its primary responsibility and obligation of maintaining safety as overriding priority, while maximising the production to meet nation's electricity demand. The safety record of over 330 reactor years of long operating experience was well recognised by contracting parties.

I would also like to confirm that the Company has complied with the Corporate Governance Guidelines issued by the Authorities.

Your CMD continued to be on worldwide governing board of World Association of Nuclear Operators (WANO). We have been offering our operating plants for international peer reviews and the plants at the verge of startup are planned to be offered for pre-startup peer reviews to maintain and enhance safety and reliability of our NPPs in line with best standards prevailing in the world elsewhere.

I am sure that with continued support of Department of Atomic Energy and its units, our customers and various government ministries, we will be able to increase production of the Company to about 32,000 million kWh next year. Members on board of the Company have immensely contributed, guided and encouraged for all round improvement in functioning of your Company. Finally, we proudly would like to put on record the culture of overriding priority of nuclear safety and also the Parivar culture within Company which has made this Company unique. It is now the time that I move on to the Director's Report, Balance Sheet and Profit and Loss Account as on 31st March 2011 for your consideration, approval and adoption.

S. K. Jain
Chairman & Managing Director

Place: Mumbai
Date: 7th September 2011

A YEAR OF OUTSTANDING GROWTH

100 MUs

The electricity generation crossed the benchmark of 100 Million Units (MUs) in a single day on 20th February 2011.

Power generation

Total operating power in one single day crossed 4,282 MW and the electricity generation crossed the benchmark of 100 Million Units (MUs) in a single day on 20th February 2011.

Availability factor

TAPS-2&3, RAPS-2&4, MAPS-1, NAPS-1, KAPS-1, KGS-1 and KGS-3 achieved an average annual availability factor of more than 90%.

Continuous Run

TAPS–2	590	days
RAPS–3	404	days
MAPS–1	346	days
MAPS–2	432	days
KAPS–2	406	days

Natural fuel access

Eight PHWRs (RAPS-1 to 6 and KAPS-1&2) totalling 1,620 MW are under IAEA safeguards and use imported fuel. These reactors are operated at full power. Ten PHWRs (MAPS-1&2, NAPS-1&2, Kaiga-1to4 and TAPS-3&4) totalling 2840 MW use indigenous uranium. The improved availability of indigenous uranium resulted in operation of TAPS-3&4 and Kaiga-4 at higher power levels during the year 2010-11. Other PHWRs continued to be operated at lower power giving, on an average, about 70% of their full power rating.

Enriched fuel access

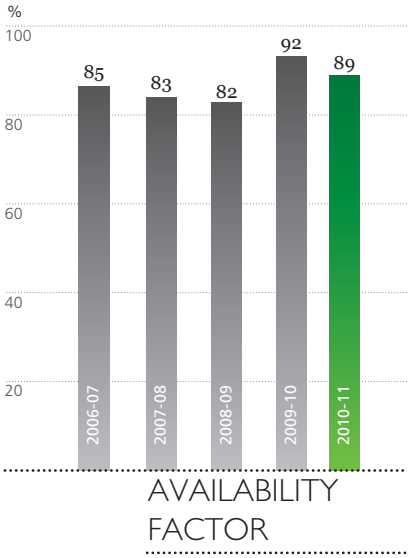
TAPS-1&2 (320 MW) use low enriched imported uranium and were operated at full power with high availability factor.

Kaiga Generating Station Unit 4

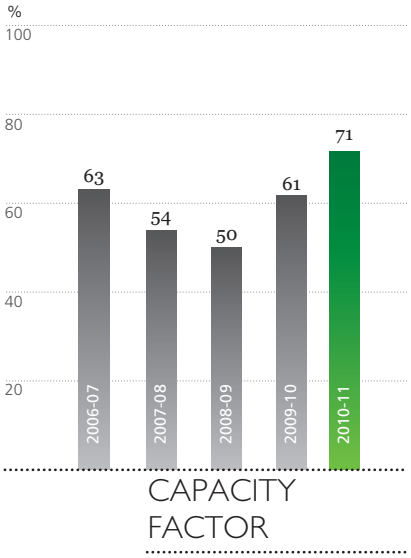
- First criticality on 27th November 2010.
- Grid synchronisation on 19th January 2011.
- Commenced commercial operation on 20th January 2011.

Renovation & Modernisation

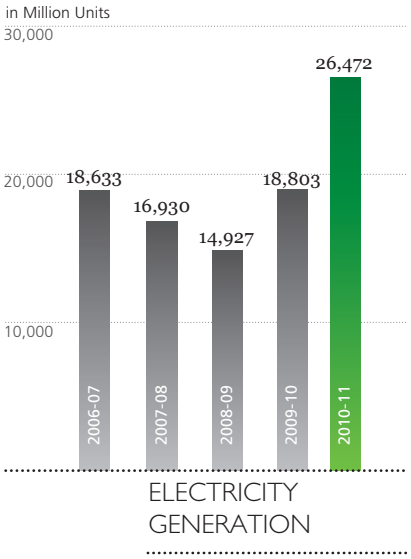
- En-masse Coolant Channel Replacement at NAPS-2. The reactor was synchronised to grid on 6th September 2010.
- En-masse Coolant Channel Replacement at KAPS-1. The reactor was synchronised to grid on 12th January 2011.
- Calandria vault water leakage was repaired at KAPS-1 using the innovative remote welding technique.



AVAILABILITY FACTOR



CAPACITY FACTOR



ELECTRICITY GENERATION

First criticality of Kaiga Atomic Power Project Unit-4 on 20th January 2011

Innovative approach
TO MASS AWARENESS

NPCIL took an **innovative approach to spread mass awareness on nuclear power** through comics in different languages. The simple and interesting representation of nuclear power facts engage and educate the readers.

Knowledge sharing initiatives and awareness campaigns

- Inaugurated the Hall of Nuclear Power at Nehru Science Centre, Mumbai. The hall aims to share factual information on nuclear energy, nuclear power plants, health, radiation and safety through interactive models, information kiosks and displays on all facets of nuclear power.
- An information centre at the corporate office in Mumbai was set up. The information centre comprises multimedia kiosks, models, panels and other interactive exhibits to share information on NPCIL and nuclear power.

2010-11 FINANCIAL HIGHLIGHTS

Reserves & Surpluses grew by ₹ **998 crore**

Revenue realisation maintained **at 99%**

An average tariff of ₹ **2.49 /kWh** maintained

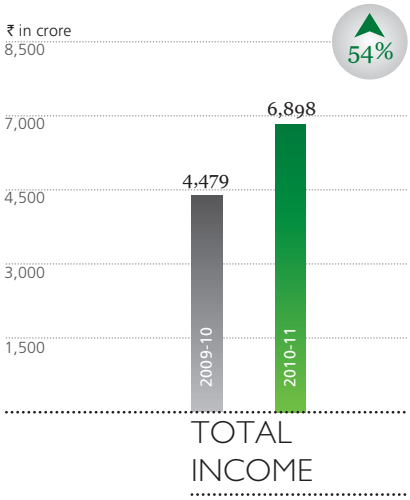
No budgetary support from the Government of India for the seventh consecutive year

₹41,894 crore
Total Assets (Net)

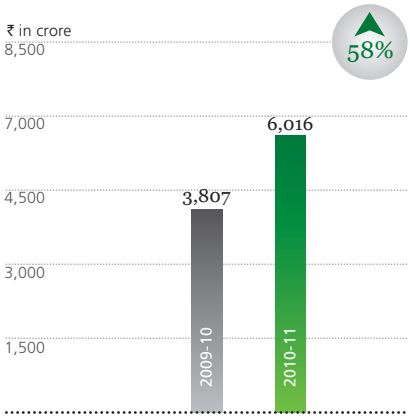
₹22,162 crore
Net Worth

₹12,017 crore
Reserves

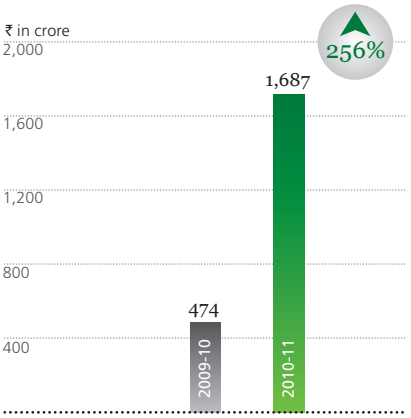
₹29,587 crore
Total Fixed Assets



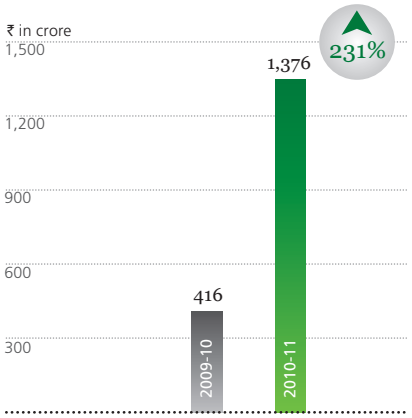
TOTAL INCOME



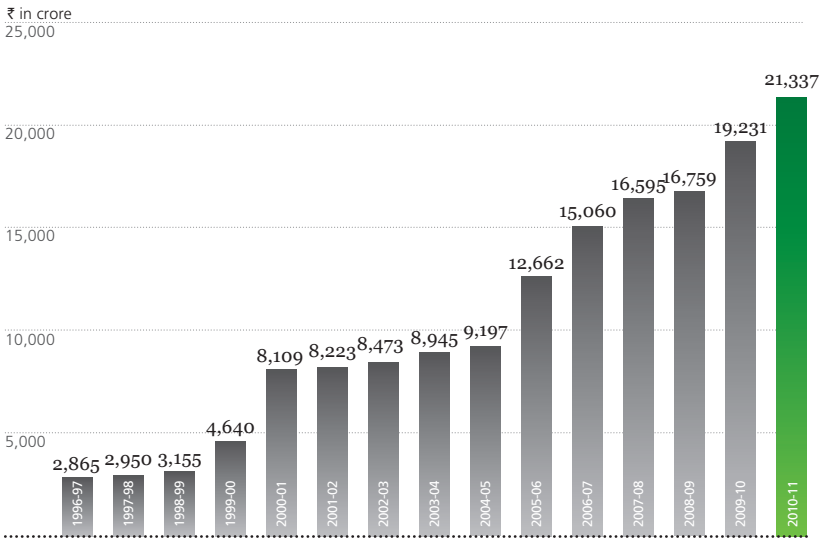
ELECTRICITY SALES



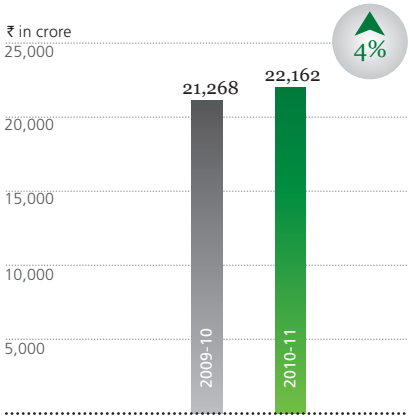
PROFIT BEFORE TAX



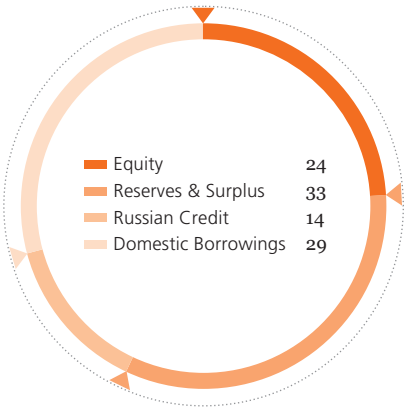
PROFIT AFTER TAX



FIXED ASSETS
(GROSS BLOCK)

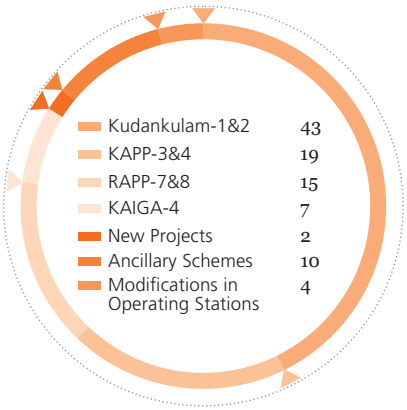


NET
WORTH

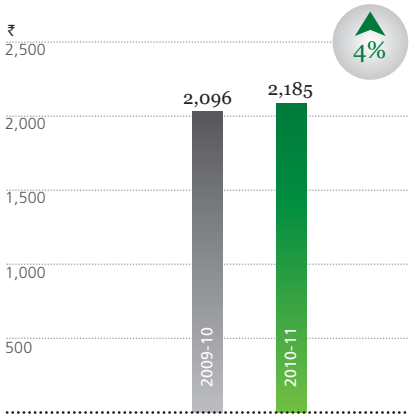


SOURCES
OF FUNDS (%)

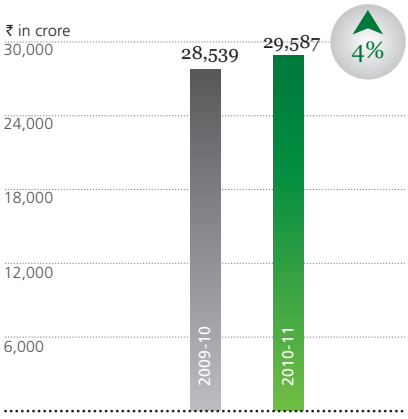
DISTRIBUTION
OF REVENUE (%)
(Total Revenue ₹ 6,897.51 crore)



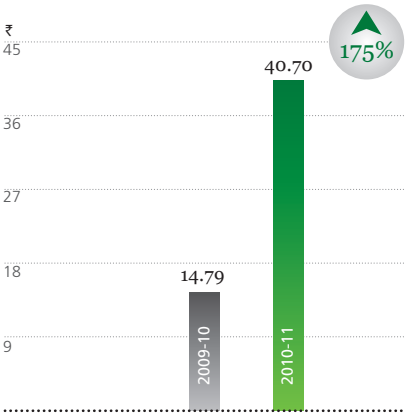
CAPITAL
EXPENDITURE (%)
(₹ 1,865.11 crore)



BOOK VALUE
PER SHARE



TOTAL
FIXED ASSETS



DIVIDEND
PER SHARE

BOARD OF DIRECTORS

Shreyans Kumar Jain
Chairman & Managing Director

Dr. S.K. Jain, a distinguished scientist of the DAE, is a Mechanical Engineer from Jiwaji University, Gwalior. Following his post graduation in Nuclear Engineering from the BARC Training School in 1969, he joined the erstwhile PPED, which was responsible for setting up and operating the nuclear power stations. He became an AECL team member, which successfully commissioned the first Heavy Water Reactors in Rajasthan. Subsequently, he contributed to the design and construction of India's first Standard PHWR at Narora, which brought India at par with other advanced countries.

Dr. Jain was a key member of the team, which negotiated the contract with the Russians and later headed the LWR Directorate during the initial launching phase of 2x1000 MW VVER units at Kudankulam. He became the CMD, NPCIL, on 3rd January 2004 and has steered it through its most eventful years. Dr. Jain was conferred an honorary Doctorate by the University of Mangalore for his outstanding contribution in the field of nuclear technology. Besides, he is also the recipient of Indian Nuclear Society Award, 2005 in recognition of his meritorious scientific and engineering achievements. The Indian National Academy of Engineers recognised his valuable contribution by bestowing on him its esteemed fellowship. He was conferred with another Honorary Doctorate in 2009 by Sathyabama University, Chennai, in the field of Science.

Dr. Jain has been instrumental in the development of nuclear technology, as part of many national and international missions. He became President of the WANO in 2007 for his contribution to the global nuclear community. In 2008, the President of India conferred on him a special citation for his outstanding contribution to the society. Dr. Jain is Chairman of the Indian Atomic Industrial Forum. The DAE has entrusted Dr. Jain with the additional charge of CMD, BHAVINI, which has been set up for the construction and operation of India's first Fast Breeder Reactor.

S.A. Bhardwaj

J.K. Ghai

S. A. Bhardwaj
Director - Technical

S.A. Bhardwaj, a Mechanical Engineer and M.Tech in Design of Mechanical Equipment (IIT, New Delhi) obtained training in Nuclear Engineering from BARC Training School and joined the PPED in 1971. He was associated with nuclear fuel design and engineering activities, reactor core design, shut down system design, in-core fuel management, reactor physics, reactor components and nuclear safety. Since February 2002, he shouldered the responsibility of total engineering activities of PHWRs. He is a Distinguished Scientist of the Department of Atomic Energy. At present, he is a Director (Technical) responsible for design, construction and procurement activities of PHWRs, new LWR projects and so on. He is a member of the AERB Advisory Committee on Design Codes and Guides and has played an active role in the preparation of multiple Safety Codes and Guides for the AERB. He was awarded the NPCIL Unit Recognition Award for his outstanding contribution and the Indian Nuclear Society Award 2001. He is a Fellow of the National Academy of Engineers and Chairman, Nuclear Fuel Complex Board. He is also the Chairman of Anushakti Vidhyut Nigam Ltd., a JV between NPCIL & NTPC.

Shri Bhardwaj is on NPCIL's Board since 3rd February 2005.

J.K. Ghai
Director - Finance

J.K. Ghai, a Science graduate from Mumbai University with dual Post Graduation in Business Administration (Finance) and Political Science, began his career with the P&T Accounts and Finance Service of the Civil Services in 1980, after a short spell of teaching at Degree level. In the telecommunication sector, he had headed the finance units of DoT, MTNL and BSNL in Gujarat, Rajasthan and Maharashtra respectively. He is credited with several large-scale initiatives such as the introduction of Corporate Accounting System at MTNL and BSNL and the Computerisation of Customer Billing and Accounting at MTNL,Mumbai, among others. At NPCIL, he brought qualitative improvement in corporate accounts and resource mobilisation for extensive expansion plans. He has been instrumental in catalysing NPCIL's vision of meeting the challenges of fast growth, diversification and competitiveness. Professionally trained in Japan and the US, Shri Ghai has been a visiting faculty to institutes of Management Studies for teaching Financial Management and has been a Board member and Head of Finance in NPCIL from 16th January 2006 to 31st July 2011.

G. Nageswara Rao

K. C. Purohit

G. Nageswara Rao
Director - Operations

G. Nageswara Rao, Distinguished Scientist, NPCIL, is an Electrical Engineering graduate from the Jawaharlal Nehru Technological University, Andhra Pradesh. In 1975, he joined the 19th batch of the BARC Training School. He received the Homi Bhabha Award for obtaining the first rank in his batch.

He worked on the commissioning of the fuel handling system of both, RAPS-2 and MAPS. In 1987, he was appointed as the Senior Maintenance Engineer for the fuel handling unit at MAPS. In 1997, he was appointed as Maintenance Superintendent at KAPS, where he improved manpower productivity and equipment performance. In 2000, he became the Chief Superintendent, KAPS and catalysed high performance, making it the model NPCIL station. As the Station Director of KGS-1&2, he brought about both technical and organisational improvement and as a result KGS-2 recorded continuous run of 529 days, the longest achieved by an NPCIL unit, so far.

He streamlined operating experience sharing, station performance reviews, WANO Technical Support Missions and optimisation of fuel utilisation. Recognising his outstanding contributions towards the safety in the operation of nuclear power plants, he was honored with the WANO Nuclear Excellence Award during the Biennial General Meeting of WANO held at Chicago in September 2007.

Station Performance bench marking and performance improvement programmes were launched under his leadership. He is contributing significantly in achieving consistent, safe and reliable operation of all NPCIL units.

He is on the NPCIL Board since 6th August 2007.

K. C. Purohit
Director - Projects

K.C. Purohit completed his early education in Rajasthan and Uttar Pradesh. Following his graduation in Electrical Engineering from HBTI (Kanpur 1973), he joined Bhabha Atomic Research Centre (BARC) in the 17th Batch of Training School and was posted at Rajasthan Atomic Power Station (RAPS). As Project Director, Kudankulam Nuclear Power Project, he was responsible for all activities related to construction and erection of First Pressurised Water Reactor being set up in India and as Station Director, he was involved in pre-commissioning. At present, he holds the position of Director (Projects) and his responsibilities are related to setting up of NPCIL's Nuclear Power Plants with foreign collaborations. His experience in the field of operation, commissioning and construction of Nuclear Power Plants facilitates overall project planning, supply chain establishment, manpower training to suit different technologies. He is responsible for implementing NPCIL's new nuclear power projects at India's various coastal sites.

He is on the NPCIL Board since 27th November 2009.

S. B. Agarkar

A. P. Joshi

S.B. Agarkar
Director - Human Resource

S.B. Agarkar graduated in Electrical Engineering in 1975 from the Punjab Engineering College, Chandigarh. He has a rich 35 years experience in the nuclear industry in a variety of areas. He specialised in Nuclear Power Plant (NPP) Electrical Systems design and led the team of Engineers in Electrical Design Group in the designing of Electrical Systems of eight NPPs and made major contributions in the evolution of PHWR electrical systems designs. He also has vast experience in contract management and information technology application. He was a member of the Bureau of Indian Standards Committees and acquired expertise in quality standards.

Shri Agarkar is actively involved in human resource development in nuclear power, including talent identification and acquisition, training and development. He has made major contributions in human resource policy formulation, compensation re-structuring, on-line performance assessment and management systems, computerisation of HR processes and information systems, end-to-end on-line management of recruitment of engineers and executives, development of career growth policies for all employee segments and sustainable employee engagement.

He is on the Board of NPCIL since 27th November 2009.

A.P. Joshi
Director

Shri A.P. Joshi has an outstanding academic career. He topped in B.Sc and secured 2nd rank in the M.Sc. (Physics) Examination of Lucknow University. He is recipient of 5 gold medals, including prestigious Meghnath Saha gold medal from the President of India for his academic distinctions. He joined Indian Administrative Service in 1978 and has worked as Deputy Commissioner, Tumkur and Bangalore Rural districts and as Chief Secretary of Uttara Kannada (Karwar) district. He has a rich experience of about 12 years as Managing Director of PSUs. He was Managing Director of Karnataka Handloom Development Corporation for 4 years and was responsible for its turnaround. He served for about 6 years as Managing Director of two major infrastructure Corporations. Therein, he played an important role in speeding up the ongoing major irrigation projects and in particular for completion and dedication of the Upper Krishna Project, costing over ₹ 10,000 crore to the nation by the President of India. He joined Karnataka State Road Transport Corporation in October 2006 There he received 'Gold Trophy' from Dr. A.P.J. Abdul Kalam, former President of India for organisational innovations.

After joining the Department of Atomic Energy in December 2008, he has been actively pursuing proposals for meeting the challenges and opportunities arising with the opening up of the international civil nuclear cooperation. He played key role in government according 'In-principle' approval for nuclear parks of 4 to 6 reactors at several sites and financial sanction for KAPP-3&4 (700 MW) and RAPS-7&8 (700 MW) projects. Enhanced transparency and IT leveraging in various aspects of contract management, recruitment of personnel, etc. in government / PSU functioning are high on his agenda. He has been instrumental in redressal of several HR related issues which were pending for a long time, resulting in better cohesiveness and enhanced team spirit.

He is on the NPCIL Board since 11th December 2008.

V. R. Sadasivam

Ratan Kumar Sinha

Rakesh Nath

V. R. Sadasivam
Director

V.R. Sadasivam, a commerce graduate from Loyola College, Chennai, joined a nationalised bank, as an officer and worked for six years. He later joined the Indian Defence Accounts Service in 1981 and has served in Meerut, New Delhi, Madras, Bangalore and Mumbai. As the Controller of Defence Accounts (R&D) at Bangalore, he was responsible for the payment, accounting, audit and financial advisory services to the DRDO Labs in the South. He has a long association with the DAE and its Units. From 1994 to 1995, he has worked with the IGCAR and with BARC from 1998 to 2002. In 2007, he joined the DAE on the post of the Joint Secretary (Finance).

He is on the Board of NPCIL since 18th July 2007.

Ratan Kumar Sinha
Director

Dr. Ratan Kumar Sinha graduated in Mechanical Engineering from Patna University in 1972, standing first in the University. Before his appointment as Director, BARC, he served as Director, Reactor Design & Development Group and Director Design, Manufacturing & Automation Group, BARC. Dr. Sinha has been guiding the programmes for new advanced reactors under design and development at BARC to utilise thorium. These include the Advanced Heavy Water Reactor (AHWR), which produces most of its power from thorium with several innovative passive safety systems. His honours include the honorary Doctorate of Science (D.Sc.) degree by the University of Mysore, the first Homi Bhabha Science and Technology Award, VASVIK Award, Indian Nuclear Society Award and the DAE Special Contributions Award. He was elected a Fellow of the Indian National Academy of Engineering in 1998.

He is on the NPCIL Board since 15th September 2010.

Rakesh Nath
Director

The entire career of Shri Rakesh Nath spanning over 3 decades has been shaped up in the various organisations of the power sector in India such as CEA, NTPC, Regional Electricity Boards of the Northern and the Western regions, Bhakra Beas Management Board, Power Trading Corporation and so on. He has served as the Chairman of the Bhakra Beas Management Board, the largest hydro complex in the Northern region. He turned the Power Trading Corporation into a profit earning Company. He has visited Pakistan and Nepal to promote power trade. He has been a part of the Committees appointed by the Government of India to inquire into grid failures and suggest remedial measures. He was Convener of Working Groups set up by the Government of India to prepare guidelines for inter-regional power exchange. Shri Rakesh Nath attended courses in power system operation & control in UK in 1984 and in Sweden in 1993.

Presently Shri Rakesh Nath is Member Technical of Appellate Tribunal for Electricity. Prior to his appointment as Member Technical, he was the Chairperson of Central Electricity Authority (CEA). He contributed immensely to capacity building and accelerated capacity addition during the 11th Five Year Plan.

He had earlier held directorship of NPCIL during the period 3rd November 2005 to 3rd March 2010.

Shri Rakesh Nath is re-appointed on the Board of NPCIL as a Director w.e.f. 26th April 2011.

Arbind Prasad

T. S. Bhattacharya

Arbind Prasad
Director

Dr. Arbind Prasad is Senior Advisor in Planning Commission looking after Power and Energy Division. Evolving an integrated energy policy covering commercial and non-commercial sources of energy, analysing issues pertaining to the energy security of the country, suggesting policies to meet lifeline requirement of poorer and vulnerable household are some of the important functions of the Division.

Prior to joining Planning Commission, Dr. Prasad served as Joint Secretary, Ministry of Social Justice and Empowerment where he was responsible for implementation of various programmes and formulations of policies relating to Social Defence, work relating to Resettlement and Rehabilitation (R&R) Sub-Group of Narmada Control Authority, implementation of the Central Sector Scheme of Special Central Assistance, etc.

Before joining Government of India, Dr. Prasad held senior administrative positions in Government of Bihar. In addition to various other assignments, he also worked as Secretary, Department of Energy, Secretary, Department of Institutional Finance and Programme Implementation in the State Government, and Director L.N. Mishra Institute of Economic Development and Social Change.

Dr. Prasad has done B. Tech. in Electrical Engineering from IIT Kanpur, and Masters and Ph.D. in Management from Yale University, USA. He was adjudged to be the best outgoing student of Electrical Engineering and awarded Gold Medal by IIT, Kanpur. He has been recipient of Yale University Fellowship throughout his study at Yale University.

Dr. Prasad has been appointed on the Board of NPCIL w.e.f. 17th June 2011.

T. S. Bhattacharya
Director

T.S. Bhattacharya is M.Sc. in Nuclear Physics, Associate of Saha Institute of Nuclear Physics and a Post Graduate in Management Studies. In his career spanning over three decades, he has held critical and challenging assignments in the banking sector and executed them with excellence. He was appointed Managing Director, State Bank of India on 28th February 2005. He has also held several important portfolios in the banking sector.

He was the Head, International Merchant Banking and the International Correspondent Departments at the Corporate Office and worked at SBI Office, Singapore and headed the Representative Offices of SBI at Jakarta, Indonesia.

Shri Bhattacharya had been on the Board of NPCIL from 8th May 2008 to 7th May 2011.

Nalini Bhat

V. M. Kaul

Nalini Bhat
Director

Dr. Nalini Bhat, Adviser, Ministry of Environment and Forests, Government of India, New Delhi, is a post-graduate in Physics and a Ph.D in Environmental Sciences. She had received her training in Asian Institute of Technology (AIT), Bangkok and International Institute for Applied System Analysts (IIASA), Vienna, Austria. She has to her credit national and international publications, relating to environmental matters. She is working in the Ministry of environment and Forests for more than 20 years. Dr. Bhat has handled assignments in the areas relating to environmental impact assessment and pollution control and setting up of environmental standards, air quality management and source apportionment studies, among others.

Dr. Bhat was appointed as a Director on the Board of NPCIL from 15th July 2010.

V.M. Kaul
Director

V.M. Kaul, a Mechanical Engineering graduate from IIT, Delhi with a MBA degree is Director (Personnel) on the Board of Power Grid Corporation of India Ltd. (a Navratna PSU and designated as Central Transmission Utility). He has had multidisciplinary experience of over 37 years in Human Resources, Joint Ventures, Contract Management, Project Management and Quality Assurance & Inspection. He has been associated with the power sector for over 30 years.

He has extensively contributed in Human Resource Planning, Policy formulation and implementation, Performance Management and Compensation Management, Industrial Relations, Recruiting talent, Managing teams and CSR Projects. Shri Kaul has headed various other functions in POWERGRID (Corporate Planning, Joint Ventures and Business Development). Before joining POWERGRID, Shri Kaul had worked in NTPC Ltd. and Engineers India Limited. He is also a part-time Director of Powerlinks Transmission Limited. Shri Kaul is a Member of All India Management Association and the Institution of Engineers.

Shri Kaul was appointed as a Director on the Board of NPCIL from 15th July 2010.

PERMANENT INVITEES

Umesh Chandra

Sudhinder Thakur

Umesh Chandra
Senior Executive Director

Shri Umesh Chandra is Senior Executive Director, Safety and Knowledge Management in Nuclear Power Corporation of India Ltd. His areas of responsibilities include Reactor Safety & Analysis of Design, Health, Safety & Environment of nuclear power plants in operation and construction, Software Quality Assurance of C&I Systems, IT Systems, Training Simulators and Knowledge Management.

Before joining NPCIL in 2001, he worked in Reactor Control Division, BARC for 30 years. At BARC, his major contributions were towards creation and fostering of technology and teams for development of computer based Control and Instrumentation Systems for nuclear power plants. These systems are operating in 14 Nuclear Power Plants (NPPs). At NPCIL, he has established R&D activities and infrastructure including an R&D Centre at Tarapur Site and a computer based C&I systems lab at Mumbai. He has been responsible for design and engineering of Control and Instrumentation of 540 MW PHWRs, TAPS-3&4 at Tarapur.

He has also been responsible for establishment of qualification methodology for Digital Systems in NPPs. He has contributed in preparation of C&I related safety guides for Atomic Energy Regulatory Board (AERB). He is also a part-time Director on the Board of ECIL, Hyderabad. Shri Umesh Chandra is a Distinguished Scientist and is a graduate of IIT, Kanpur.

Sudhinder Thakur
Executive Director

Sudhinder Thakur, Distinguished Scientist, Executive Director (Corporate Planning & Corporate Communication), obtained a degree of B.E. in Mechanical Engineering from Delhi University in 1970. He joined 14th batch of BARC Training School in 1970. Upon completion of his one-year training, he joined the Power Projects Engineering Division of the Department of Atomic Energy in 1971. He worked on nuclear power reactors from RAPP-2 onwards for efficient delivery of equipment. He specialised in heavy water pumps and has significantly contributed in bringing the technology to India and also indigenisation of critical components of heavy water pumps.

He was designated as Consular Science with the Embassy of India in France (Technical Liaison Mission of Department of Atomic Energy) from 1989 to 1993. Subsequently, he worked on Turbine Generator Sets, Boiler Feed Pumps and Condensers for Tarapur-3&4 project.

Shri Thakur was closely involved with interaction of DAE / NPCIL with Government agencies and other experts in the fields of energy / electricity.

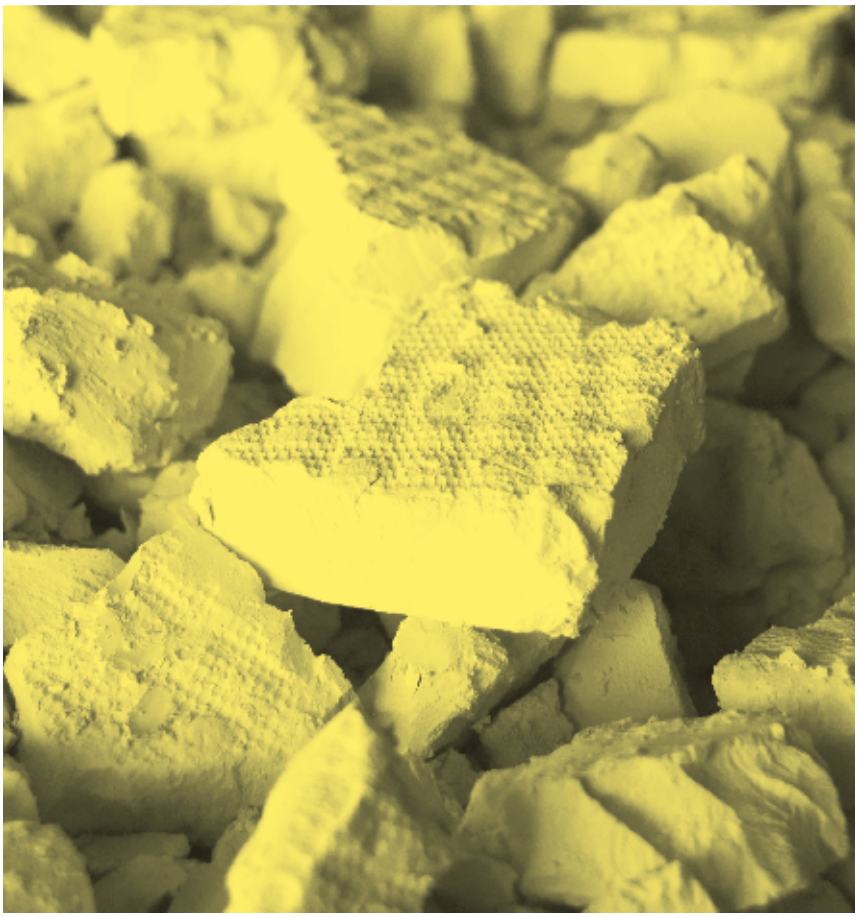
Shri Thakur has served NPCIL Board for more than three years and ceased to be a Permanent Invitee to the Board consequent on his superannuation on 31st December 2010.

He is presently Distinguished Scientist & Fellow, NPCIL.

Srikar R. Pai
Company Secretary

WHAT IS NUCLEAR ENERGY?

Nuclear energy is produced by controlled nuclear reactions. In a typical nuclear reactor, the energy released from continuous splitting of atoms of the fuel is harnessed as heat in either gas or water, and is used to produce steam. The steam drives the turbines that produce electricity. Control rods are used to ensure a controlled rate of the nuclear reactions.



The
KEY RAW MATERIAL

Uranium represents the key element to generate nuclear energy. Natural Uranium is found in Earth's crust across various geographies and consists of about 0.7% **U-235** and rest **U-238**.

U-235 is used for generation of nuclear power. U-238 gets converted to Plutonium 239 which after reprocessing of spent fuel can be used for power generation. Thus the fuel produces power and can be reprocessed for more power.

DEMYSTIFYING NUCLEAR ENERGY

20% Low fuel cost

In a nuclear power plant fuel costs accounts for only 15-20% of total generation cost

60 Years of plant life

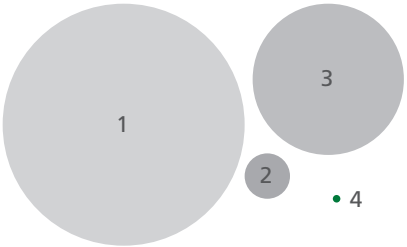
Nuclear plants have a life of about 60 years

Energy generated from a nuclear power plant is not expensive

The cost of electricity depends upon investments in plant construction, technology implementation, fuel, and plant operations. While the costs of nuclear power plant construction are high, the fuel costs and the operating costs are low. The fuel accounts for 15-20% of the total generation cost. The nuclear option is lesser impacted by escalation in fuel costs and its transportation and can better withstand market fluctuations in fuel price. Further the transportation cost of fuel is insignificant and leakages or risks during transportation of fuel are absent. Nuclear plants operate much longer, 60 years plant life has become common. Low fuelling costs and long life makes nuclear power competitive option.

Nuclear power is safer than conventional energy sources

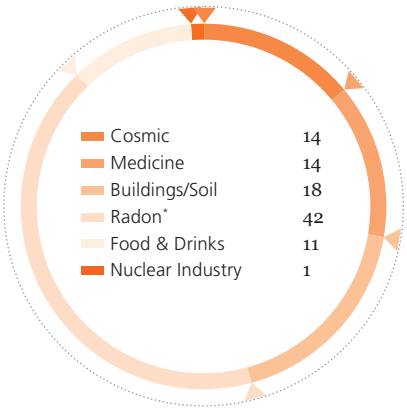
Nuclear reactions also produce ionising radiations along with power. The entire gamut of safety in nuclear power is directed at ensuring the occupational workers, population at large and environment is not subjected to harmful effects of radiations. Safety is thus accorded highest priority in all stages of development of nuclear power. While multiple barriers to release of radioactivity are provided in design of the power reactors, the operation is performed by qualified and licensed operators in accordance with well laid down and approved procedures. The level of safety is also continuously improved through learning from global operational feed back and peer review by international experts. No wonder, on a life cycle basis, nuclear energy is much safer than other power generation options.



1 Coal	6400 Workers
2 Natural gas	1200 Workers and Public
3 Hydro power	4000 Public
4 Nuclear power	47 Workers

COMPARISON OF ACCIDENT STATISTICS IN PRIMARY ENERGY PRODUCTION (1970-92)

The above is in addition to indirect casualties and health risks due to burning of fossil fuels.



SOURCES OF RADIATION (%)

Source: World Nuclear Association

* A radioactive gas emitted by volcanic rocks and uranium ore present in earth's crust

A nuclear power plant does not emit any greenhouse gas during electricity generation

Nuclear power generation does not burn fossil fuels, such as coal, oil and gas, and hence does not release smoke or carbon dioxide.

The waste is carefully transported in specially-designed casks by trucks, railway and cargo ships. Till date, there have been no leaks or cracks in the transportation of nuclear waste.

Radiation is a way of life. Human beings are exposed to natural radiation – from sun and outer space. Naturally occurring radioactive materials are present in earth, buildings, food and drinks consumed. Nuclear radiation is almost negligible compared to the radiation we are exposed to.

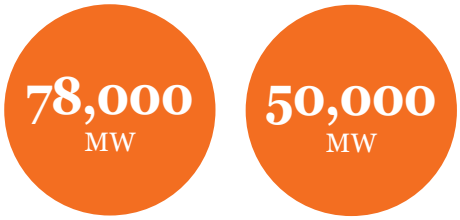
THE RIGHT QUESTIONS. THE RIGHT ANSWERS.

WHY NUCLEAR ENERGY IS **ESSENTIAL** IN ENERGY MIX?

Reason 1

EXPONENTIAL DEMAND

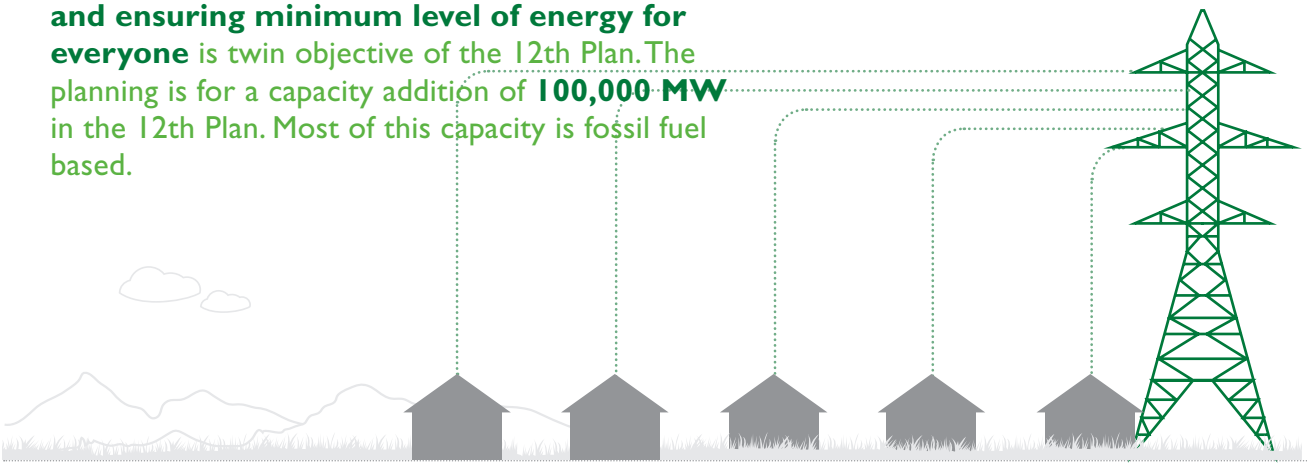
The 11th Plan target of capacity addition of 78,000 MW has been revised to 26,000 MW at the Mid Term Appraisal stage and **the actual addition is expected to be around 50,000 MW**.



11th Plan target of capacity addition

Expected actual addition

Availability of energy for economic growth and ensuring minimum level of energy for everyone is twin objective of the 12th Plan. The planning is for a capacity addition of **100,000 MW** in the 12th Plan. Most of this capacity is fossil fuel based.



India *Global*

PER CAPITA ELECTRICITY CONSUMPTION

While we are world's fourth largest electricity producer, national average of per capita electricity consumption about 724 kWh (utility) is one third of the global average. There are large variations in energy availability amongst different states and also between urban rural divide of the country.

Reason 2

SUPPLY CONSTRAINTS

The overall power generation in India increased by 5.5% from 771 Billion Units to 811 Billion Units in 2010-11. The target for 2011-12 is 855 Billion Units which is again 5.4 % increase over 2010-11. **Even with higher Energy efficiency for the projected GDP growth the generation needs to be increased 7-8% per year.**

- Hydro power accounts for 13% of India's power generation. The option to significantly increase hydro is limited by the monsoons, water levels in dams and transmission capacity generation being far off from the load centres and environmental concerns of large hydro dams.
- Thermal power (coal, liquid fuel and gas) accounts for about 83% of India's power generation. Fossil fuel in India is being exhausted at a fast pace and the gap between domestic supply and demand of coal is already 142 MMT in 2011. A large capacity is already constrained due to non availability of coal and price fluctuations due to market conditions and realignment of national policies amongst coal exporting countries.
- Renewable energy (biomass, wind energy and solar energy) sources are clean; they are expensive to build, weather dependent, intermittent sources. These are quite significant for the energy mix but are currently far from commercially deployable stage.
- It is in context of these supply side constraints that all sources, however small, need to be deployed for meeting the national needs.

Nuclear power remains an essential option to contribute in the energy mix. Resulting out of improvement in fuel supply, **the sector grew remarkably by 41% during 2010-11.**

Reason 3

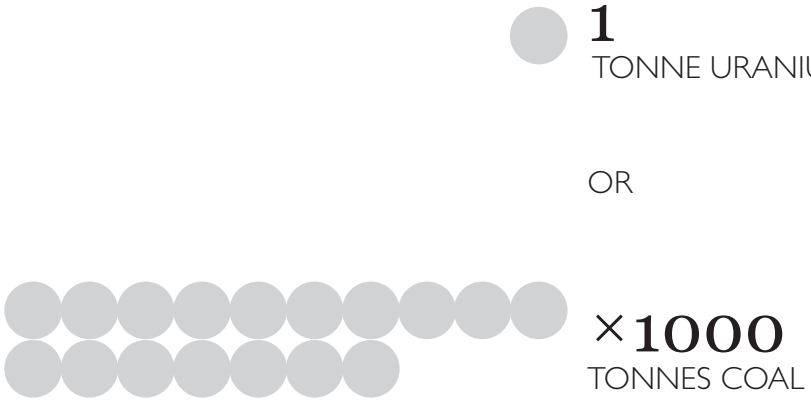
NATURAL COROLLARY

WHY IS NUCLEAR ENERGY A **SUSTAINABLE** OPTION ?

Reason 1

PRESERVATION OF FOSSIL FUELS

One tonne of Uranium produces the same amount of energy as **17,000 tonnes of coal.** Using Uranium (which has no other major application) as a power source will thus save the exhausting fossil fuels that can be used to meet future developmental needs, such as transportation, industry, residential heating and cooking.



Uranium is available in abundance on earth's crust. **Known Uranium resources can supply electricity for the next 250 years across the globe.**

Recycling of Uranium and Plutonium through a closed fuel cycle can further support nuclear power capacity in addition to reducing the amount of waste.

In India we have large resources of Thorium. **The potential of electricity generation from thorium through sequential execution of three stage programme is enormous.**

Reason 2

LONG LASTING RESERVE

SAFETY IS PARAMOUNT
IN A NUCLEAR POWER PLANT.
HOW IS IT **ENSURED**?

Safety is a matter of utmost priority and continuous review in nuclear business.

NPCIL ensures that safety is maintained across all stages of a nuclear power project - design, construction, commissioning, operation and maintenance of Nuclear Power Plants.

Reactor Safety Analysis and the Probabilistic Safety Assessment are carried out for operating projects and ongoing construction projects to meet the regulatory requirements and safety standards. Systematic safety assessments, surveillance, testing and inspection, advanced safety analysis, which includes thermal hydraulic analyses, computational fluid dynamics, process studies, fire hazard analyses and highly complex severe accident analyses are regularly conducted. NPCIL has successfully maintained all the safety parameters and there has not been any nuclear power plant accident with radiological impacts in India.

SAFETY ASSESSMENT

POST FUKUSHIMA

On 11th March 2011, the Northeast coast of Japan was hit by one of the biggest natural calamities ever observed – an earthquake of magnitude 9 Richter scale, followed by tsunami of about 14 meters height. The Fukushima Dai-ichi nuclear plant was severely impacted by this natural catastrophe of unprecedented magnitude. The accident resulted in large scale evacuation of population in 20 kms evacuation zone. There has been no death or casualty in Japan attributed to radiation exposure. The robustness of nuclear power technology has been adequately demonstrated under such adverse and extreme natural calamities. However the loss of assets and damage to the environment, misery to the evacuees has been large.

The safety assessment, world over, post the Fukushima incident has been reviewed. This is a work-in-progress as the full assessment will take a long time.

While most regions in India are not subjected to such severe earthquakes and tsunamis, NPCIL has very quickly assessed first order safety of our plants in operation and under construction. This was essentially with a view to quickly establish if there are any immediate concerns on the safety of plants in operation. Resulting out of these studies, while there is no immediate safety concerns, actions for further enhancing the safety have been identified and will be implemented progressively in our plants.

In this connection, recommendation of the high level committee appointed by the Government of India and other international organisations for further enhancing the safety of nuclear power will also be taken up for implementation.

Decisions of the Government of India to invite OSART mission of the International Atomic Energy Agency for a transparent international peer review of our plants reflect our confidence in robustness of safety in nuclear plants in India.

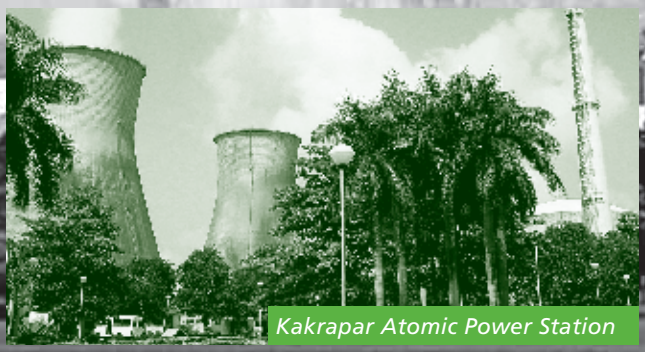
Tarapur Atomic Power Station -1&2

Tarapur Atomic Power Station -3&4

Kaiga Plant Site

Madras Atomic Power Station

Narora Atomic Power Station

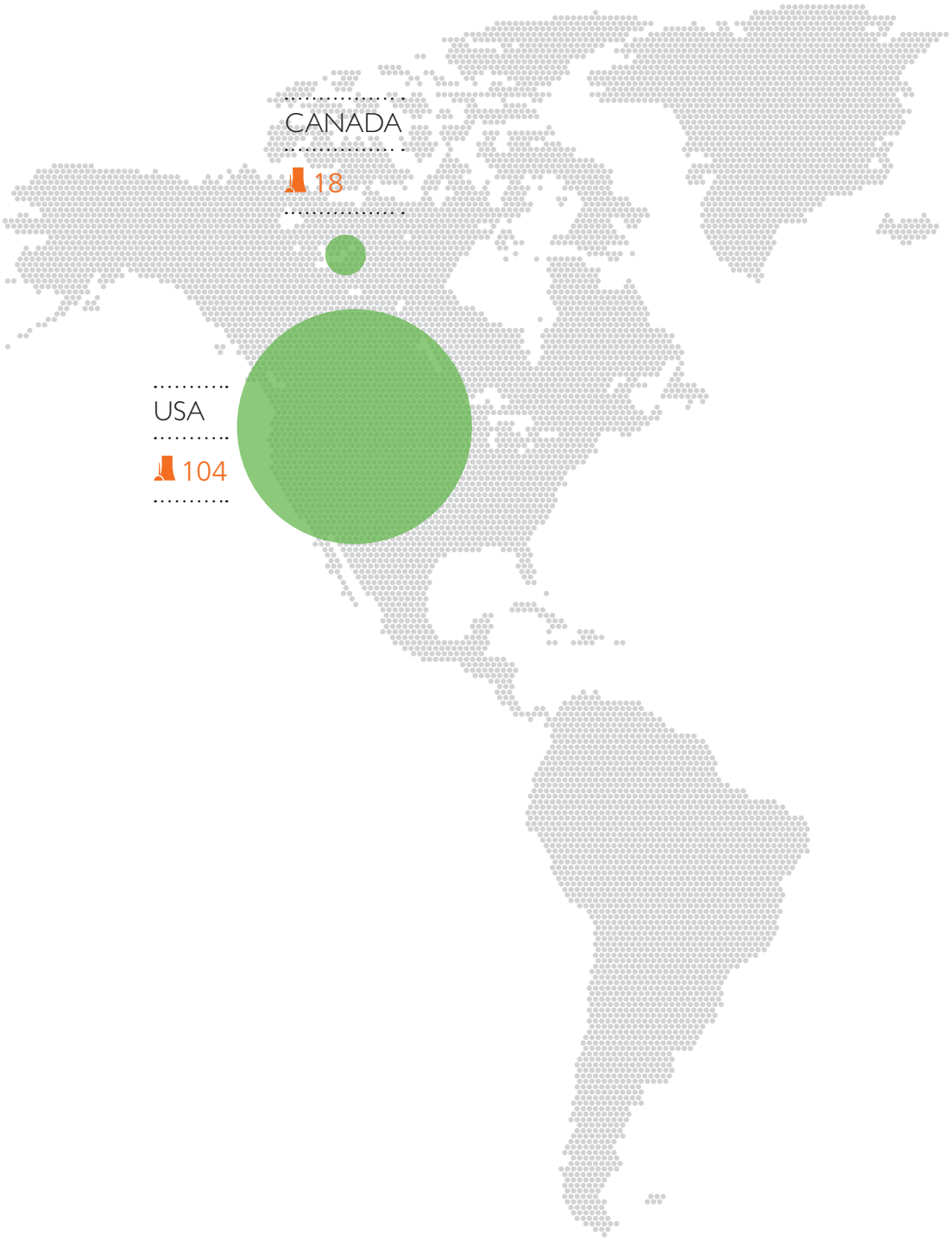


Kakrapar Atomic Power Station

WHERE DO WE STAND IN THE NUCLEAR FAMILY?

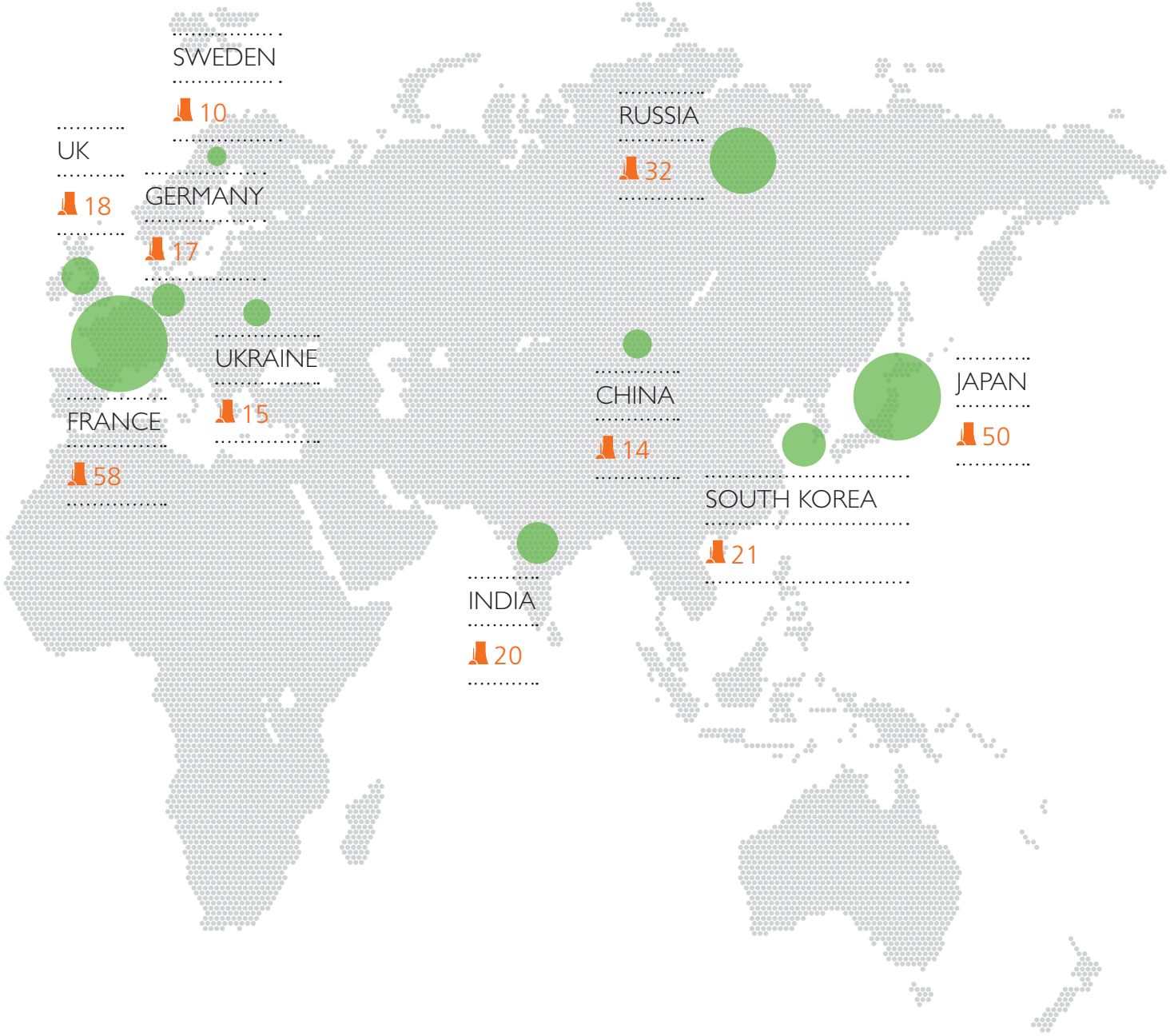
Rawatbhata Rajasthan Site

In 2010, the world's total nuclear power generated stood at 2,630 billion kWh (across a total number of 440 operable reactors) in a fraternity of 30 countries, with a total capacity of 377,000 MW. Some of the major countries in terms of number of reactors are as follows:



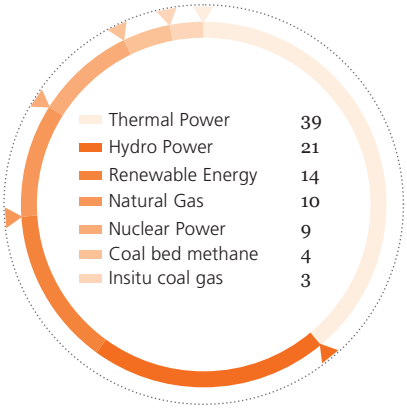
NUMBER OF REACTORS IN OPERATION

Map for representation only. Not to scale.

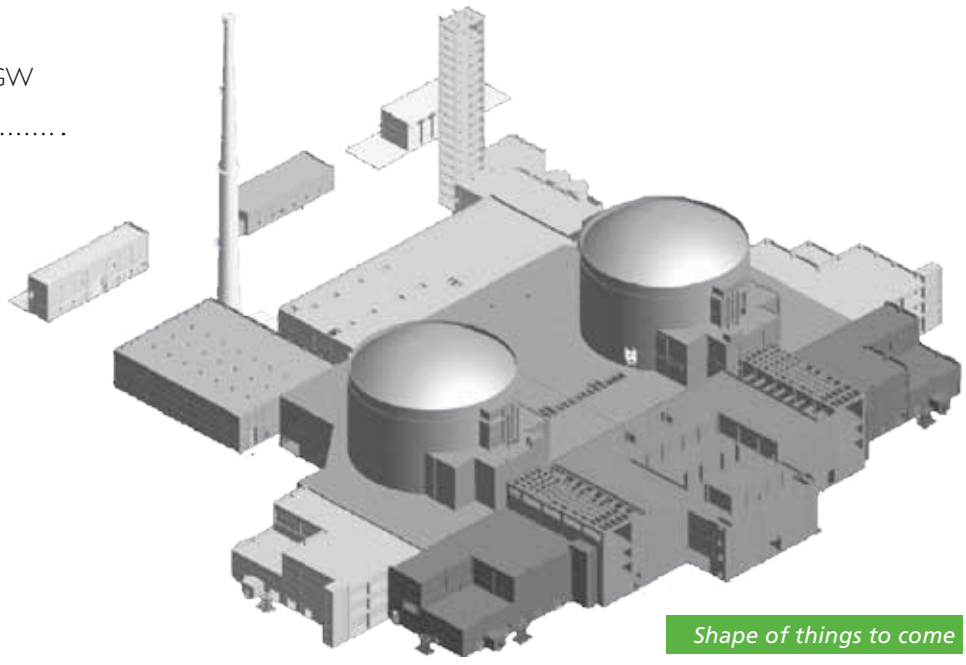

SWEDEN
10
UK
18
GERMANY
17
UKRAINE
15
FRANCE
58
RUSSIA
32
CHINA
14
JAPAN
50
SOUTH KOREA
21
INDIA
20

NUCLEAR ENERGY IN INDIA IS MATURE

NPCIL is currently constructing single larger sized units of 700 MW and 1000 MW. Some of the units planned include Light Water Reactors of more than 1000 MW. More sites are also approved by the Government of India. With the ongoing capacity expansions, the NPP sites would go up to 13 from the existing 7 soon. By 2032, nuclear power is expected to contribute 9% of the total energy requirement of the country.



FUTURE FORECAST OF INDIA'S POWER GENERATION (%)
(Total installed capacity of 700 GW by 2032)



Shape of things to come

THE JAITAPUR NUCLEAR POWER PROJECT

The Jaitapur Nuclear Power Project (JNPP) is proposed to be set up in technical collaboration with Areva, France. Two units are planned in the first phase and the project will have finally six units of 1,650 MW. Government of India accorded the 'in principle' approval of the site and land is in NPCIL possession. All the safety guidelines of International Atomic Energy Agency and Atomic Energy Regulatory Board are strictly adhered to. The land acquired in Jaitapur is predominantly barren and several geographical and environmental assessments are carried out to ensure the safety of ecology and local population.

- Jaitapur falls in Zone III according to the seismic zoning map of the Government of India. Further, based on the studies carried out by various Government institutions, there is no active fault up to 30 km radius from JNPP site. The site is also 72 feet above the sea level.
- A detailed Environmental Impact Assessment was completed earlier.
- Ministry of Environment and Forest, Government of India, has accorded Environmental Clearance to JNPP on 26th November 2006.
- MoEF has accorded Coastal Regulation Zone clearance to JNPP on 3rd December 2010.
- The project will augment electricity generation of 36-39 MU/day in an environment-friendly way.
- The project will bring out development of areas around the plant location.
- The project will generate direct and indirect employment.
- Community development in surrounding areas, in education, health and infrastructure.

Possibilities of
EMPLOYMENT GENERATION

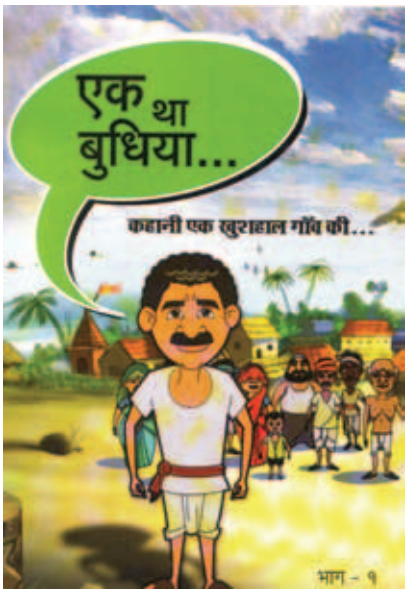
For construction, operation and maintenance, **700 to 1,000** people need to be employed.

Construction phase requires involvement of skilled, semi-skilled and unskilled workforce, that may go up from **6,000 to 8,000 persons** at peak stage.

Indirect employment is also expected to be generated through various business set ups, such as boarding and lodging, transport, catering, communication and other services.

Handing over of the Environmental Clearance for JNPP

GENERATING AWARENESS AND TRANSPARENCY



The role of public perception and media together with political will is critical for the development of nuclear energy. NPCIL plays an instrumental role in disseminating scientific knowledge and awareness about safety, waste management, environment and economics of nuclear power.

The organisation's representatives participate in discussions and debates across various forums to enlighten media and the general public about the benefits of nuclear energy. All public communications are done in a very structured manner. The target audiences include:

- General public (especially people near the power plant site)
- Students and teachers
- Authorities of local, state and central government
- Press and media
- The decision-makers

NPCIL's public awareness initiatives comprise the following:

- Organising pan-India exhibitions, including permanent exhibition camps for schools, colleges and people in general
- Organising seminars, workshops, press conferences, debates and discussions and lectures on nuclear power
- Allowing tour of the power stations to the interested target audiences to enhance understanding of operations
- Implementing an innovative approach to communicate through mass media

A COMMITMENT TO SOCIETY

During 2010-11, NPCIL set up a new Directorate and also an Advisory Council to focus on the Rehabilitation and Resettlement (R&R) activities of project impacted areas.

The organisation has developed its R&R package on the basis of the central and state governments' policies. As part of the R&R package, NPCIL is focussed on the overall development of the villages around its plants. NPCIL has tied up with NGOs to drive community development initiatives such as improving the health of people, providing education and developing rural infrastructure.

NPCIL has also constructed multiple fully equipped modern schools in villages, which are then operated and maintained by the state governments. In addition, effort is to reinforce roads, community centres, health centres and medical facilities as part of community initiatives.

NPCIL also focuses on the Rehabilitation and Resettlement of the villagers. It not only provides the villagers with adequate compensation for land acquisition, but also assists in providing them with skills for employment opportunities and in creating self help groups. These initiatives have increased during the year at Jaitapur, and are planned to be taken up aggressively in and around units at Rajasthan, Maharashtra and Gujarat. So far, the year 2010-11 saw the highest investments in CSR and R&R, which are expected to grow four-fold in the next year.

Key highlights of the **CSR AND R&R PROGRAMME**

Invested ₹ 6 crore in 2010-11

Increased spending on CSR and R&R from 1% of profits to 2% of profits

INDIA'S THREE-STAGE NUCLEAR POWER PROGRAMME

The three stage nuclear power programme, envisioned by Dr. Homi Bhabha, has been designed to facilitate India's nuclear power fuel requirement to **shift from uranium towards thorium.**

Stage **1**

Includes setting up Pressurised Heavy Water Reactors (PHWRs) using natural uranium. NPCIL commenced the first stage on 16th December 1973 with the commercial operation of RAPS-1. This stage has reached commercial maturity.

As of 31st March 2011, we have 18 PHWRs totalling 4,460 MW capacity and 4 PHWRs of 2,800 MW capacity in construction.

Stage **2**

This includes setting up Fast Breeder Reactors (FBRs), which uses plutonium, obtained by reprocessing spent fuel of first stage. This has been commercially launched with the construction of 500 MW Prototype Fast Breeder Reactor (PFBR) at Kalpakkam, Tamil Nadu.

Stage **3**

This includes using Uranium 233 - Thorium 232, obtained by reprocessing the spent fuel of the second stage. They have been developed at pilot scale and the technology development has been adopted.

The PHWR Programme

1970s	1980s	1990s	2000s
Technology demonstration at India's first PHWRs, RAPS 1&2. These are the prototypes of the Douglas Point Reactor, which have been set up with Canadian collaboration	Indigenisation with the setting up of Madras Atomic Power Station 1&2 and standardisation with the setting up of Narora Atomic Power Station 1&2	Consolidation with the setting up of Kakrapar Atomic Power Station 1&2	Commercialisation with the setting up of Kaiga Generating Station 1-4; Rajasthan Atomic Power Station 3-6; and Tarapur Atomic Power Station 3&4

RENOVATION AND MODERNISATION

Renovation and Modernisation of operating plants is an ongoing activity at NPCIL. The extent of R&M to be undertaken are dependent on the technologies implemented, the availability of latest analytical tools and the safety analysis conducted at the NPPs. R&M activities lead to safe, reliable and optimal plant operation. TAPS-1&2, RAPS-2, MAPS-1&2 and NAPS-1&2 have undergone extensive R&M and safety upgrades.

Repair of leak in Calandria Vault of KAPS–1

After few years of initial operations, Calandria Vault of KAPS-1 had experienced light-water leakage. The leak location identification and repair was challenging as all the work had to be conducted remotely due to high-radiation fields inside the vault. The automatic welding machines and the technologies used were highly specialised.

En-masse Coolant Channel Replacement (EMCCR)

EMCCR has been completed at RAPS-2, MAPS-1&2, KAPS-1 and NAPS-1&2.

The pressure tubes in EMCCR are made of Zirconium- 2.5% Nb, which have a longer life as compared to Zircalloy 2 material earlier used for these reactors.

Feeder replacement

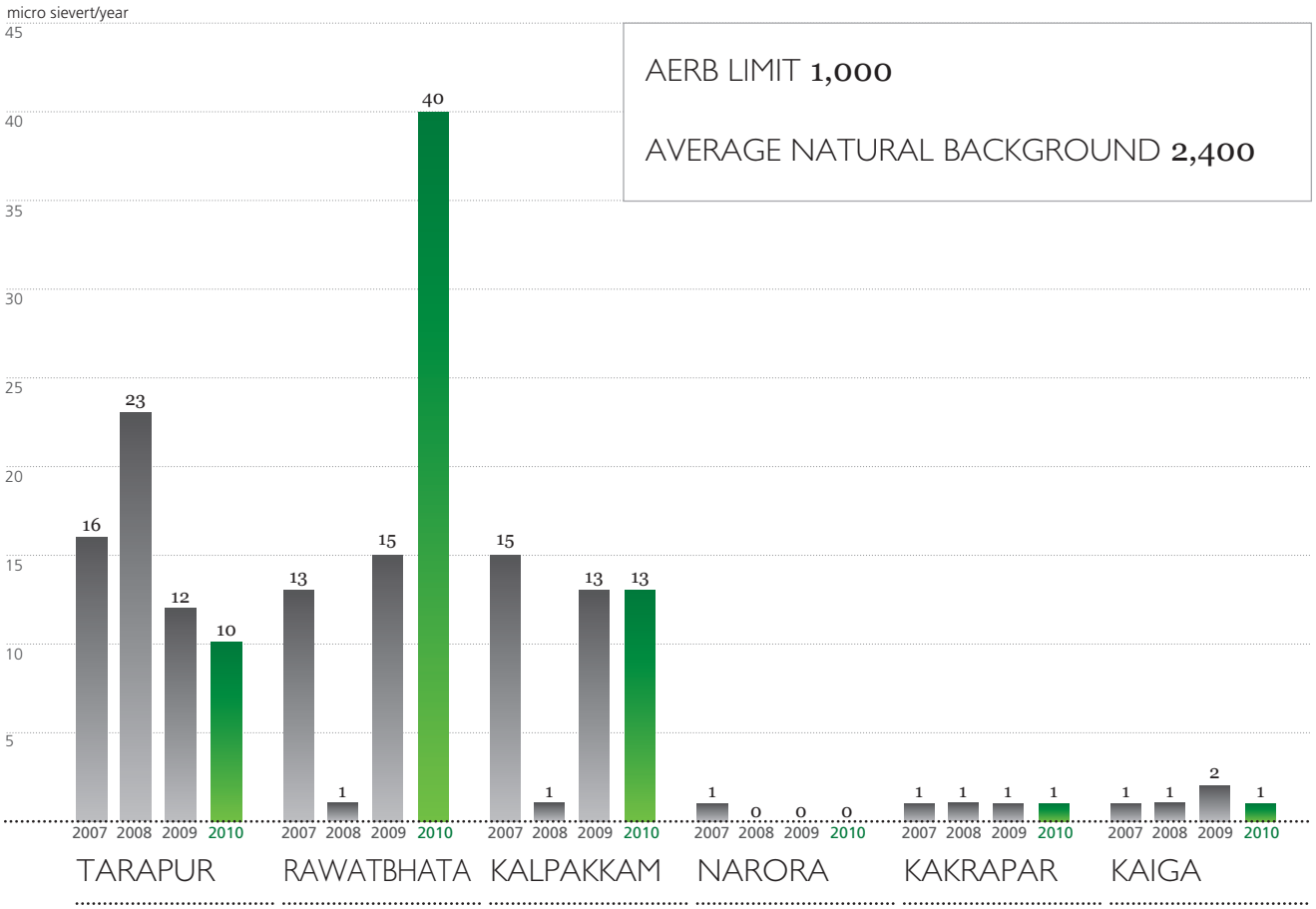
Heat Transport system feeders, which direct the coolant flow into the pressure tubes of the reactor, are inspected as per the surveillance programme at all the stations. These feeders were replaced at NAPS-2, KAPS-1, RAPS-2, MAPS-1 and NAPS-1.

NUCLEAR RADIATION

The occupational exposures received by the employees during the process of nuclear power generation and waste disposal at the NPPs, are maintained at levels much below the AERB's specified levels. Committed to the motto of 'Safety First', NPCIL maintain the highest quality of in-plant safety.

NPCIL follow the 'As Low As Reasonably Achievable' (ALARA) principle to minimise the individual exposure and maintain discharge of extremely small radioactivity through authorised air and water routes. The average radiation exposure to the public is much below the regulatory limit stipulated by AERB, and is much lower than naturally occurring radiation. Independent Environmental Survey Laboratories under Bhabha Atomic Research Centre undertake regular assessments of the impact of radioactive discharges from NPPs.

ENVIRONMENTAL DOSE AT EXCLUSION ZONE



HUMAN APPROACH

Human approach encompasses the human resource policy as well as our relationship with host communities.

NPCIL wishes to be known as a 'people builder'. It constantly strives to create a team of young and experienced people with a vision to shape the future through knowledge and enthusiasm.

The human resources team consists of technically qualified engineers. It selects fresh graduates from various engineering institutes. Every year NPCIL inducts a young team of about 100 fresh engineers. They are trained at four Nuclear Training Centres. The Bhabha Atomic Research Centre (BARC) Training School also imparts training to young graduate engineers and is another stream for induction in NPCIL. The engineers after training are deployed across different plants/ directorates of NPCIL so that they learn to manage a nuclear power project.

NPCIL has a Corporate Human Asset Review and Management System in place that measures employee competence by maintaining a comprehensive employee profile. It records the past work experience of all the employees. This helps in undertaking competence mapping, and filling the gaps by suitable training and deploying the employees in job roles suited to their talent, skill sets and performance. The Company has a developed in-house software system for performance appraisal. The incentives/awards are decided based on the reviews of a Performance Linked Incentive System.

NPCIL has laid out a defined hierarchy of the employees and follows promotional norms of the Department of Atomic Energy suitably modified to input NPCIL specific needs. In addition, for very senior positions there is also Government intervention in decision making. The positions of control engineers and above are manned by graduate engineers, who are qualified and licensed by Atomic Energy Regulatory Board (AERB).

NPCIL also considers the after work activities of the employees and their families in the form of staff clubs and celebration of special occasions.

NPCIL is equipped with full scale simulators where training to the station personnel is given for power plant operation and on emergency situation to handle emergencies. In instructor room, computers work in real time for simulated training on specific events. Post the Fukushima incident, **committees were formed to revise and ensure optimum safety of the plant and employees.**

Teaching aids for activity based learning, provided by MAPS

Laying of foundation stone of Anganwadi at Kottaimedu near MAPS

Medical camp at Kudankulam Nuclear Power Project

Healthcare

With the objective of 'Health for all', NPCIL's stations possess well-equipped and well managed hospitals, with medical personnel providing a range of services to its employees and the rural population. A number of medical camps and eye camps are regularly organised in rural areas. Health vans move around the villages to render urgent medical attention.

Education

With the objective of 'Universal Education', NPCIL promotes literacy and education at local schools and colleges. A number of schools have been constructed and renovated. NPCIL has distributed sports goods, computers, school bags, notebooks, stationery and other gadgets to the students.

Infrastructure development

NPCIL enhances rural employment opportunities directly and indirectly: directly through local recruitment in the plants and indirectly by driving the local economy. Construction of plants in rural areas helps upgrade the living standards of the local population, develops good roads, sets up telephone exchanges and other infrastructural facilities. NPCIL's community welfare activities help in building roads, panchayats and community halls, providing piped water, bore wells, hand pumps and setting up of water huts. NPCIL also distributes high-yielding varieties of seeds to local farmers.

Black-headed ibis

Environment

NPCIL undertakes various green initiatives in and around the NPPs. Plantation of trees on stretches of land around our plants and near residential complexes is a part of green initiatives. The thick green belt attracts a variety of local and migratory birds, which helps protect the ecology. NPCIL conducts various campaigns on the local environment.

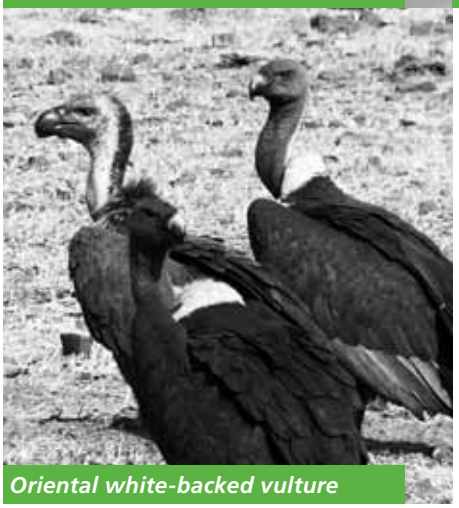
All the NPPs have an Environment Survey Laboratory (ESL), operated by the Health Physics Division of BARC. The ESL monitors the environment and the radiation exposure to the public through the use of sophisticated radio chemical analysis and other highly sensitive instruments. In association with the World Wildlife Fund (WWF), the Kaiga plant participates in releasing fish seedlings and the Narora plant undertakes surveys of the Ganga dolphins.

IN THE COMMUNITY OF BIRDS

Black-necked stork

Spot-billed pelican

Indian skimmer



Oriental white-backed vulture

Darter

NPCIL's study of **VARIOUS THREATENED BIRD SPECIES**

NAPS
Indian Skimmer and **Black-necked Stork**

RAPS
Oriental White-backed Vulture

KAPS
Black headed Ibis and **Darter**

TAPS
Pallid Harrier and **Painted Stork**

KGS
Nilgiri Wood Pigeon, Ceylon Frog Mouth, Malabar Grey Hornbill

KKNPP
Spot-billed Pelican and **Spotted Green Shank**

MAPS
Painted Stork

Painted stork

NPCIL's Plants are home to a large variety of birds, which are attracted by the green and serene environment. The Environment Stewardship Programme (ESP) is integral to NPCIL's long-term nuclear energy strategy and implementation.

With the aim of improving and conserving the habitat of avifauna, the ESP focuses on the scientific study of bio-diversity both within and around Exclusion Zones (EZs) of the plants. Training has been imparted to local volunteers and campaigns have been organised to enhance green awareness at the Plants, which are situated in the vicinity of India's bio-geographic zones. The EZs (radius around the centre of NPPs) have water bodies like rivers, lakes and reservoirs. The EZ is guarded by the Central Industrial Security Force.

NPCIL is an institutional member of Bombay Natural History Society (BNHS) and Indian Bird Conservation Network (IBCN). The long-term MoU signed between NPCIL and BNHS would help NPCIL implement the ESP. Regular workshops are conducted to educate people in environment conservation and avifauna. Multiple workshops have been organised, which were attended by State Forest Wildlife Department and various NGOs such as WWF, MCBT, Hadoti Naturalists Society and Nature Club Surat, among others.

NPCIL has created an eco-system in the EZ of KAPS, which has more than 2,500 plants of 63 species. The EZ at NAPS attracts more than 10,000 birds every year. NPCIL has also signed a long term MoU with Nature Club, Surat in order to set up butterfly gardens in its premises. The project would create a pesticide-free green environment, which would attract butterflies, insects, moths and birds. Each station has their individual nature club named after a threatened bird of the area. These clubs conduct a number of nature activities like nature watch, public awareness campaigns, studies and surveys. NPCIL has planned the construction of a pool for endangered species of Gangetic turtles at NAPS.

BUILDING GLOBAL COOPERATION

In 2008, the Nuclear Suppliers Group ended the international embargo for nuclear power for India, which increased global cooperation in the nuclear business. It increased the possibilities of setting up large capacity reactors and enabled overseas trade in nuclear material.

NPCIL has begun collaborating with global nuclear vendors to build LWRs in India. We are currently constructing two units at KKNPP, each of 1000 MW in cooperation with Russian Federation.

NPCIL has already signed a number of international MOUs with:

- AREVA, France
- General Electric Hitachi, United States of America
- Westinghouse Electric Company, United States of America

These collaborations are expected to help us upgrade our technologies, further enhance our technical capabilities, construct larger unit sizes and help us become a global solutions provider of nuclear power. We are looking at offering technical services to NPPs outside India, and are looking at forging strategic alliances and joint ventures with a number of global nuclear power solution providers in the years to come.

2 Units

Are currently undergoing construction at KKNPP

x

1,000 MW

Will be the capacity of each unit

Kudankulam Nuclear Power Project

AWARDS AND HONOURS

KGS

- KGS-1&2 won the national level National Safety Council of India (NSCI) **Suraksha Puraskar** (Bronze trophy & certificate) for 2009 from for excellent safety performance.

TMS

- TAPS-1&2 was appreciated by Ministry of Labour, Government of India for **NSCI award** for the year 2009.
- TAPS-3&4 received the National Safety Council - Maharashtra Chapter - **Maharashtra Safety Award-2009 for the Lowest Accident frequency rate**.
- TAPS-3&4 received the National Safety Council - Maharashtra Chapter - **Maharashtra Safety Award-2009 for the Longest Accident free period**.
- TAPS-3&4 received AERB's **Industrial Safety Award** for the year 2010.
- TAPS-3&4 received certification of appreciation from NSCI in recognition of appreciable achievement of **Occupational Safety and Health** during the assessment period of 3 years 2006-08.

RRS

- RAPS-1&2 received **Appreciation from NSCI Award 2009.**

NPCIL was honored with the **CHEMINOR Award** in the field of **Contracts and Materials Management** by the Indian Institute of Materials Management on 14th August 2010. NPCIL received the award for:

- **Implementing the best practices** in the administration of contracts for various power projects with transparency and proactive roles
- **Integrated Materials Management**
- Achieving **substantial cost benefits**

MAPS

- MAPS received the **Certificate of Appreciation** from National Safety Council Mumbai, for achievement in occupational health and safety for the year 2009.
- MAPS won the **AERB's Green Site Award** in Category-B for the year 2009.
- MAPS won the **AERB's Fire Safety Award** for the year 2010.
- MAPS was awarded Runners Up **Good Green Governance Award** for the year 2010 by leading environmental journal "Shrishti".

KAPS

- **Sarva Shreshtha Suraksha Puraskar 2009** from NSCI Safety Awards, in recognition of developing and implementing the highly effective Occupational Safety and Health Management Systems & Procedures and achieving outstanding performance in Occupational Safety and Health for the assessment years 2006 to 2008.
- Winner in **National Safety Awards** from Director General Factory Advice Service and Labour Institutes for the performance year 2008.

DIRECTORS' REPORT

Tarapur Atomic Power Station - 3&4

The revenue realisation has been maintained at a high level of **99%**

In 2010-11, as per the billing cycle, Electricity Generation has been 26469 Million kWh (MUs) as against 18798 MUs in 2009-10 showing an increase of **41%**

Dear Stakeholders,

Your Directors have immense pleasure in presenting the twenty-fourth Annual Report of the Company, together with the Audited Accounts for the year ended 31st March 2011.

PERFORMANCE HIGHLIGHTS

A summary of the Company's Financial Results is given below:

(₹ in crore)

Financial Results	As at 31st March 2011	As at 31st March 2010
Sale of Electrical Energy	6016	3807
Other Income	882	672
TOTAL INCOME	6898	4479
Operating & Maintenance Expenditure	3680	2629
Interest	662	441
Depreciation	868	721
TOTAL EXPENDITURE	5210	3791
Profit for the year	1688	688
Prior period adjustments	(1)	(214)
Profit Before Tax	1687	474
Provision for Taxation	311	58
Profit After Tax	1376	416
Add: Balance brought forward from previous year	1122	981
Balance available for Appropriations	2498	1397
a) Interim Dividend	150	150
b) Tax on Interim Dividend	25	25
c) Proposed Dividend	263	-
d) Tax on proposed Dividend	44	-
e) Transfer to General Reserve	500	100
f) Balance carried to Balance Sheet	1516	1122
Earning per Share in ₹ (Equity share having face value of ₹1000/- each)	136	41

The Company has achieved higher average capacity factor of about 71% as against 61% for the previous year. The use of imported fuel for reactors under safeguards (1840 MW) and improved domestic fuel availability for reactors fuelled by domestic uranium (2840 MW) resulted in higher capacity utilization. The year under report recorded the highest nuclear power generation since the inception of the Company. Electricity generation, as per the billing cycle, in 2010-11 has been 26469 Million kWh (MUs) as against 18798 MUs in 2009-10 showing an increase of 41%. The revenue realization has been maintained at a high level of 99%.

The Department of Atomic Energy (DAE) has issued revised tariff norms for determining tariff for sale of electricity by Atomic Power Stations, vide notification dated 8th December 2010. The tariffs, based on revised norms are effective from 1st July 2010 for all atomic power stations and are to remain effective for 5 years. However, the revised tariffs, as per new tariff norms, have not yet been notified. Pending such notification, the revenue for the year has been determined as per existing tariff / on provisional basis as per practice of the Corporation.

Renovation & Modernization activities viz. Enmasse Coolant Channel Replacement (EMCCR), Enmasse Feeder

Replacement (ENFR) together with upgrades have been completed at NAPS-2 and KAPS-1 and these reactors were synchronized to the grid during the year.

With the commissioning of Kaiga-4 (220 MW) during the year under report, the number of Nuclear Power Reactors in operation in the country has increased to 20 with a total installed capacity of 4780 MW including RAPS-1 (100 MW) owned by the Government and operated by NPCIL.

The revenue from sale of power generated from wind farm with an installed capacity of 10 MW at Kudankulam during the year was ₹ 6.42 crore as against ₹ 7.46 crore for the previous year.

The provision for taxation during the year is ₹ 311 crore as compared to ₹ 58 crore last year. The increase is on account of hike in book profit to ₹ 1376 crore as against ₹ 416 crore in the previous year. Presently, the Company is being subjected to Minimum Alternate Tax @ 19.93% including surcharge and cess on tax after availing tax holiday benefits available under provisions of the Income Tax Act, 1961.

The amount received towards interest on Research & Development Fund, Renovation & Modernization Fund and Decommissioning levy with interest thereon has not been considered as income of the Company. These funds are held by NPCIL on behalf of the DAE and the Decommissioning levy is collected from beneficiaries based on a statutory notification issued by the DAE. The Income Tax Tribunal has decided that the interest earned on these funds be treated as income of the Company. While an appeal has been filed in the Honorable High Court of Maharashtra, Mumbai, the Company has appropriated ₹ 27 crore from these funds towards the income tax, if finally, payable on these levies.

The Company has been able to regulate its operational efficiency and has been able to achieve a net profit of ₹ 1376 crore after tax.

The accumulated net deferred tax liability as on 31st March 2011 was ₹ 1893 crore on account of timing differences between book and tax profits. Since Income tax payable on income from generation of power is recoverable from the beneficiaries, the amount of deferred tax, so recognized, is recoverable on becoming a part of the current tax. Therefore, such deferred tax is considered as recoverable and netted from such deferred tax liability / expense.

CAPITAL

There was no addition to the paid up share capital during the year. The Company has not drawn any budgetary support from the Government of India since FY 2004-05. The total equity paid-up capital continued to be ₹ 10145 crore as on 31st March 2011 against the Authorized Capital of ₹ 15000 crore.

DIVIDEND

The Board has recommended a final dividend @ 30% of Profit After Tax (PAT) of the Company. This amounts to ₹ 412.90 crore, including the interim dividend of ₹ 150 crore.

RESOURCE MOBILISATION

As per the plan of allocation approved by the Government of India, the Company raised a sum of ₹ 3000 crore during the year for its various projects by resorting to market borrowing by availing term loans from Public Sector Banks. The Company has redeemed Bonds of ₹ 148 crore during the year, as per the terms of their issue.

OPERATING PERFORMANCE OF THE STATIONS

The performance of all operating stations was satisfactory during the year 2010-11 and these generated 26472 MUs of electricity (exclusive of infirm generation of 1 MU from Kaiga-4) recording the highest nuclear power generation since the incorporation of the Company. The overall Capacity Factor (i.e. Plant Load Factor) was 71% and the weighted average Availability Factor was 89%. In addition, Kudankulam Wind Farm generation during the year was 23 MUs.

MAJOR HIGHLIGHTS

- Kaiga-4 attained first criticality on 27th November 2010 was synchronized to the grid on 19th January 2011. The Unit commenced commercial operation on 20th January 2011.
- For the first time, NPCIL total operating power on a day crossed 4282 MW.
- Generation of over 100 MUs of electricity in a single day on 20th February 2011.

- After successful completion of Renovation & Modernization activities viz. EMCCR, EMFR together with upgrades, NAPS-2 and KAPS-1 were synchronized to the grid on 6th September 2010 and 12th January 2011 respectively. These activities were carried out with indigenously developed technology. India is one of the few countries in the world having expertise in Life Management of PHWRs.
- During the financial year, more than 90% Availability Factor was recorded by TAPS-2, TAPS-3, RAPS-2, RAPS-4, MAPS-1, NAPS-1, KAPS-1, KGS-1 and KGS-3.
- The uninterrupted continuous runs were as follows:

Reactor	No of days	From	To
TAPS-2	590	22.07.2009	03.03.2011
MAPS-2	432	25.01.2009	03.04.2010
KAPS-2	406	04.07.2009	14.08.2010
RAPS-3	404	26.06.2009	05.08.2010
MAPS-1	346	17.12.2009	28.12.2010

- Calandria vault water leakage at KAPS-1 reactor was successfully repaired using innovatively designed remote welding technique.
- KAPS-1&2 were placed under International Atomic Energy Agency (IAEA) Safeguards and operated at full power.

HIGHLIGHTS OF THE OPERATING PERFORMANCE OF THE STATIONS

The commercial generation, the yearly Capacity Factor (CF) and the annual Availability Factor (AF) are summarized in the Table.

Station	Unit No.	Capacity (MW)	Generation (MUs)	CF (%)	AF (%)
TAPS	1	160	1142	81	82
	2	160	1274	91	92
	3	540	3582	76	93
	4	540	3124	66	88
Station Total		1400	9122	74	90
RAPS	2	200	1720	98	94
	3	220	1564	81	85
	4	220	1807	94	96
	5	220	1753	91	89
	6	220	1060	55	59
Station Total		1080	7904	84	84
MAPS	1	220	1260	65	98
	2	220	979	51	85
Station Total		440	2239	58	92
NAPS	1	220	1228	64	94
	2	220	658	61	90
Station Total		440	1886	63	93
KAPS	1	220	370	89	92
	2	220	1076	56	86
Station Total		440	1446	62	86
KGS	1	220	1260	65	97
	2	220	988	51	77
	3	220	1334	69	96
	4	220	293	78	84
Station Total		880	3875	63	90
NPCIL TOTAL		**4680**	**26472**	**71**	**89**

Note:

NAPS-2 and KAPS-1 after capital maintenance were synchronized to the grid on 6th September 2010 and 12th January 2011.

KGS-4 commenced commercial operation on 20th January 2011.

FUEL AVAILABILITY

The use of imported fuel for reactors placed under IAEA Safeguards and increased supply from indigenous sources resulted in operation of reactors at higher capacity factors. The power level of three PHWRs (TAPS-3&4 and Kaiga-4) was raised during the year. Other PHWRs were operated at reduced power level of about 70% consistent with fuel availability.

COMPLETED PROJECTS

Kaiga Atomic Power Project-4 (220 MW PHWR)

Kaiga-4 attained first criticality on 27th November 2010 after the fuel was made available during the year 2010-11. The unit commenced commercial operation on 20th January 2011

ONGOING PROJECTS

Kudankulam Nuclear Power Project-1&2 (2x1000 MW VVERs)

The 2x1000 MW Kudankulam Project, located in Tirunelveli district of Tamil Nadu, is being implemented with technical cooperation from Russian Federation within the framework of the Inter-Governmental Agreement between India and the Russian Federation. All the equipment and the construction drawings are being supplied by the Russian Federation while civil construction, erection of equipment and commissioning of the systems are being executed by NPCIL. The construction of the project commenced on 31st March 2002 with the first pour of concrete.

The project has recorded a cumulative progress of 96% as of March 2011 (Unit-1: 98% and Unit-2: 93%) with cumulative expenditure of ₹ 13781 crore. The break-up of progress achieved is: Design & Engineering 99% and Procurement & Supplies 99%. The Construction & Erection activities for Unit-1 are complete and in respect of Unit-2, all the civil construction work is complete and erection works are in advanced stage of completion.

For Unit-1 of the project, significant milestones on the commissioning front were achieved during the year. These are completion of "Hydro Test (Strength Test) of Primary Circuit at 24.5 MPa of the Nuclear Steam Supply System and Secondary Circuit at 10.8 MPa" and "Strength and Leak Rate Test of Reactor Building Containment". The preliminary works for carrying out the 'hot run' test at designed parameters are completed.

Erection works for Unit-2 are closely following those of Unit-1. All the civil construction works have been completed and erection works are in advanced stage of completion. Trial assembly of the reactor pressure vessel and the reactor internals has been completed. The main fuel pool was fill-tested with de-mineralized water for carrying out the liner integrity checks. Turbine and generator erection has been completed and turbines are boxed up. Cabling works for loads in various buildings is in progress.

NEW PROJECTS UNDER CONSTRUCTION

Kakrapar Atomic Power Project-3&4 (KAPP-3&4)

The construction of KAPP-3&4 took off by laying the First Pour of Concrete on 22nd November 2010 after receiving regulatory clearances. KAPP-3&4 is the first twin reactor of 700 MW series being launched by NPCIL.

Since first pour of concrete, various project activities are being executed expeditiously. Works are being executed simultaneously for all main plant buildings. The infrastructure facilities both at Plant Site and Colony are being established in line with the project requirement.

KAPP-3&4 are slated for completion in the year 2016.

Rajasthan Atomic Power Project-7&8 (RAPP-7&8)

The excavation work for two indigenously designed 700 MW PHWRs at RAPP-7&8 has commenced on 19th August 2010 after receiving regulatory clearances from the Atomic Energy Regulatory Board. Earlier, the contract for Main Plant Civil Works was awarded.

The excavation of Reactor Buildings has been completed and the regulatory clearance for First Pour of Concrete for the unit has been received on 16th July 2011. The FPC was achieved on 18th July 2011.

The orders for all major long delivery items have been placed. The project is slated for completion in the year 2016.

Kudankulam Nuclear Power Project-3&4 (KKNPP-3&4)

The Kudankulam Project Unit-3&4 is an expansion of Unit-1&2, located in Tirunelveli district of Tamil Nadu, being implemented with cooperation from Russian Federation (RF) within the framework of the Inter-Governmental Agreement signed between RF and India in December 2008.

The Ministry of Environment & Forests (MoEF) has

Kakrapar Atomic Power Project-3&4

conveyed environmental clearance. The process for Coastal Regulation Zone clearance from MoEF is in progress. Siting consent has been obtained from AERB. The application for excavation consent has been made to AERB.

Techno-commercial discussions in respect of 2 x 1000 MW VVERs at KKNPP-3&4 with Atomstroyexport, Russian Federation are in the advanced stages of finalization.

A contract for the first priority design works for initial design activities has been signed with Atomstroyexport and the work is in progress. The various pre-project activities were also completed.

Jaitapur Nuclear Power Project (JNPP)

The land measuring 938 Ha was acquired and handed over to NPCIL by the District Administration, Ratnagiri, Maharashtra. Agreement for Rehabilitation of Project Affected Families of JNPP has been signed between NPCIL and Government of Maharashtra.

The Ministry of Environment & Forests, Government of India, has conveyed environment as well as CRZ clearance for 6 x 1650 units for JNPP.

The General Framework Agreement and Early Work Agreement have been signed between NPCIL and AREVA, France for implementation of EPR at Jaitapur Site.

Techno-commercial discussions with AREVA in respect of 2 x 1650 MW EPR units at Jaitapur Site are in advanced stage of conclusion.

Pre-project activities viz. Geo-technical investigations, Construction of property-cum-boundary wall of Plant Site and Master Plan for residential complex are in progress.

PROJECTS AT NEW SITES

In 2009, the Government of India has given 'In-principle' approval for full potential of Sites at Kudankulam and Jaitapur and also for five new sites; two for indigenous PHWRs and three for LWRs based on foreign cooperation. The details of the 'In-principle' approval / full potential are

	Location	Reactor Type	Capacity (MW)
1.	Haryana	Indigenous PHWRs	4 x 700
2.	Madhya Pradesh		2 x 700
3.	Kudankulam, Tamil Nadu	LWRs based on international cooperation	4 x 1000
4.	Jaitapur, Maharashtra		6 x 1650
5.	Mithi Virdi, Gujarat		6 x 1000
6.	Kovvada, Andhra Pradesh		6 x 1000
7.	Haripur, West Bengal		6 x 1000

Jaitapur and five sites located in Haryana, Madhya Pradesh, Gujarat, Andhra Pradesh and West Bengal as mentioned above are greenfield sites.

The pre-project activities at new sites are in progress. These include opening of the NPCIL offices in nearby towns, Environment Impact Assessment for MoEF clearance, design input for regulatory clearance, steps for obtaining siting consent from the regulator, public awareness programmes and actions for land acquisition to prepare the sites ready for project construction within shortest time.

The land acquisition applications for issuance of Section 4 notification under Land Acquisition Act, 1894 have been already submitted to the respective District Authorities in Haryana, Gujarat, Madhya Pradesh and Andhra Pradesh. In case of Haryana, the notification under section 4 was issued and the objections received under section 5A under the said Act were responded. The Section 6 notification was approved by Haryana Government on 25th July 2011.

NEW INITIATIVES AND BUSINESS DEVELOPMENT

NPCIL is taking various new business initiatives for public-public as well as public-private partnership to strengthen the Indian Nuclear Power capability and expanding power generation capacity.

NPCIL with L&T Ltd.

NPCIL and Larsen & Toubro Ltd. set up a Joint Venture Company in the FY 2009-10 under the name 'L&T Special Steel & Heavy Forgings Pvt. Limited' (LTSHF) as a subsidiary of L&T Ltd. with NPCIL having 26% shareholding.

This Public-Private Partnership will produce special steels and ultra heavy forgings including those required for Nuclear Power Plants. The construction work at site is in full swing at Hazira, District Gujarat. It is expected that trial production of forgings would commence in October 2011.

NPCIL accords utmost importance to nuclear, radiological, industrial, fire and environmental safety. Continuing with its policy of "Safety First", the occupational exposures of employees of the Company at various NPPs were maintained well below the values specified

JV with NTPC Ltd.

NPCIL and NTPC Limited have incorporated a Joint Venture Company under the name of 'Anushakti Vidhyut Nigam Limited' on 27th January 2011 to set up Nuclear Power Projects in the country. The JV Company is a subsidiary of NPCIL with 51% of share capital held by NPCIL.

JV with IOC Ltd.

A Joint Venture Agreement was signed in January 2011 between NPCIL and Indian Oil Corporation Limited (IOCL), a Government of India Enterprise, to form a joint venture company to set up Nuclear Power Projects in the country. The JVC under the name 'NPCIL - Indian Oil Nuclear Energy Corporation Limited' was incorporated on 6th April 2011 as a subsidiary of NPCIL.

JV with THDCIL

NPCIL and Tehri Hydro Development Corporation of India Ltd. (THDCIL), have signed an agreement for preparation of Detailed Project Report (DPR) of the Pumped Storage Scheme (PSS) having installed capacity of 700 MW at Malshej Ghat, near Mumbai. The survey and investigations have been completed and the DPR is submitted to the Government of Maharashtra. The JV partners are expecting formal award of the project by the Government of Maharashtra.

Joint Venture with other CPSUs

MOUs have been signed in the FY 2009-10 between NPCIL and National Aluminum Company Limited (NALCO) to form Joint Venture Company to work together for setting up Nuclear Power Plants. The discussions are in progress to form the JVC.

Renewable Energy Developments

In line with the national priority, NPCIL is also contemplating utilization of Solar Energy for specific applications such as operating vapour absorption machine for cooling, desalination and generation of electricity. Techno-economic viability of the use of Solar Energy for these applications is planned to be evaluated.

NPCIL has already made a beginning in utilization of Renewable Energy at KKNPP site where a 10 MW Wind Power Plant is already in operation since January 2007. NPCIL is considering the installation of additional Wind Farm at the same location.

ENGINEERING & PROCUREMENT

NPCIL is spearheading the efforts for capacity add-ons following indigenous route of proven PHWR technology which has been well adapted and mastered.

3-D modeling of the plant has been done for the first time in NPCIL so as to issue drawings after ascertaining virtual constructability. Bill of Materials (BOM) generated thereon also has high level of accuracy and thus it has been possible to arrive at the material requirement for the project more precisely. Better definition of scope of work contracts and minimizing changes during construction will result in improved cost and schedule performance.

Open bidding has been the guiding principle of NPCIL to encourage wide participation and competition among the bidders. Proprietary purchases have been further reduced and brought to the minimal. New General Conditions of Contract adopted by the Corporation have formed the basis of tendering process. Total transparency has been brought in tender notification, qualifying criteria of bidders and bids evaluation methodology.

Purchase Orders for long delivery items are already placed for ongoing projects. Manufacturing of critical equipment like Steam Generators, End Shields, Calandria, Reactor Headers, Coolant Channels, Reactivity devices, Primary Coolant Pumps & Motors, Fuelling Machine Heads and Fuelling Machine Column & Bridge for eight units have already begun. A strategic breakthrough was made into forging an alliance with BHEL & GEC Alstom for the supply of Turbine & Generator for 700 MW Units of KAPP-3&4. Purchase Order for Plant Water Package has already been placed and field works are in progress. Critical packages of Nuclear Piping, Common Services Piping, Balance of Turbine Island works and C&I packages are in different stages of awarding process.

The Engineering Directorate is also working on the export model for the single unit plant of 220 MW and 540 MW PHWR reactors.

CONTRACTS & MATERIALS MANAGEMENT

During the year, the focus has been to process the requirements of upcoming 700 MW projects viz. KAPP-3&4 and RAPP-7&8. Placement of purchase orders in respect of long delivery equipment / items were made in a timely manner to meet the project schedule.

NPCIL has innovatively implemented and successfully operated Integrated Materials Management and achieved substantial cost benefit.

REACTOR SAFETY AND ANALYSIS

The Directorate of Reactor Safety & Analysis (RSA) is responsible for carrying out the safety assessment for Nuclear Power Plants right from design, siting, commissioning and safe operation. It completed the Preliminary Safety Analysis Report (PSAR) of the 700 MW units meeting First Pour of Concrete requirements for KAPP-3&4 and RAPP-7&8 and performed comprehensive large break Loss of Coolant Accident (LOCA) analysis including identification of critical break, considering interleaved feeders configuration, 3D-neutron kinetics and limited boiling in the channels with several first of a kind features. The analysis demonstrated adequacy of safety systems and availability of large safety margins for KAPP-3&4.

An innovative decision making tool namely Symptom based Intervention Guidelines Management System (SIGMAS) has been implemented in RAPS-5&6 as an operation aid to handle emergency conditions. Safety Analysis for Hydrogen Management in Containment during Severe Accident along with SIGMAS was carried out. NPCIL participated in the IAEA Coordinated Research Project on benchmarking of severe accident analysis codes for Heavy Water Reactors.

First of its kind activities covering internal flood Probabilistic Safety Assessment (PSA), Fire PSA for KAPS-1&2 and Level-1 PSA for internal events has been completed for RAPS-2.

HEALTH, SAFETY AND ENVIRONMENT

Nuclear Power Plants (NPPs) of the Company have registered more than 335 reactor years of safe, reliable and accident-free operation.

NPCIL accords utmost importance to nuclear, radiological, industrial, fire and environmental safety, over-riding the demands of production or project schedules. Continuing with its policy of "Safety First" and striving for maintaining the highest standards of safety within NPPs, the occupational exposures of employees of the Company at various NPPs were maintained well below the values specified by the regulator, Atomic Energy Regulatory Board (AERB). Continuing with the emphasis on the principle of ALARA (As Low As Reasonably Achievable), the yearly

radiation dose around the NPPs, measured over the last many years, is an insignificantly small fraction of natural radiation dose and the stipulated regulatory limits.

For ensuring effective safety culture, different levels of reviews are in place to bring excellence in safety performance such as review by Directorate of Health, Safety & Environment, peer review by international agency, corporate review by a team of senior officers from stations & headquarters, Internal Review / Self Assessment by station and regulatory review by regulatory body. In line with the commitment of practicing the international safety standards, TAPS-1&2 was offered for peer review which was conducted by World Association of Nuclear Operators (WANO). During the year, the Corporate Review was carried out for TAPS-1&2, TAPS-3&4, RAPS-1&2, RAPS-3&4, NAPS, KAPS and KKNPP. The Internal Reviews / Self Assessments were undertaken by Stations for assessment and reinforcement of safety practices and safety culture.

Operational Health Physics functions at all NPPs were performed prioritizing the safety. The radiological safety aspects of PSAR of KAPS-3&4 (700 MW) and RAPS-7&8 (700 MW) were prepared. Various technical assignments for general plant requirements of JNPP were reviewed and finalized. Review of post closure safety assessment of Near Surface Disposal Facility (NSDF), KAPS was carried out.

The Environmental Management System (EMS) and Occupational Health and Safety Management System (OHSMS), as per ISO-14001:2004 and IS-18001:2007 respectively, were maintained at all the stations. An Environment Management Meet - 2010 was organized at NPCIL HQ focusing on environmental legislative compliances and effective maintenance of environmental management system.

Continual strengthening of Industrial and Fire Safety activities at stations and projects remained the main focus during 2010-11 as well. Strengthening of safety organization and manpower planning up to 2018 was carried out. A safety guide on Construction Safety Management was also brought out in this direction. Implementation of Behavior Based Safety (BBS) programmes was given thrust. Celebration of National Safety Day with numerous awareness programmes carried significant importance for safety propagation. Independent review cum exchange visits to projects, self assessment of stations and corporate reviews were taken up as review techniques, for strengthening Industrial and Fire Safety.

Nuclear Safety

Safety has always been NPCIL's continuous endeavor. In pursuit of safety improvements, it carries out comprehensive and systematic safety assessments by multi-tier multi-disciplinary review system during design, construction, commissioning and operation of NPPs. The assessments are well documented, subsequently updated (in the light of operating experience and significant new safety information) and reviewed at station level and corporate level and subsequently by the regulatory body. Verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of a nuclear installation continue to be in accordance with its design, applicable national safety requirements and operational limits and conditions.

Every event in an operating NPP is reviewed and lessons are learnt. The internationally reported events and their applicability to Indian NPPs are checked. Analysis of events is done to establish their root cause and accordingly the systems, procedures, aspects related to training and safety culture are further improved. These mechanisms have resulted in progressive improvements in the safety and reliability of units over the years. The inputs from operational experience are utilized for design improvements in the new reactors. Self assessment at sectional level, station level and corporate level are routinely organized to assess safety culture from an individual's perspective to the Company's goals on this issue. The targets are reviewed regularly to ensure that they continue to promote improvement. Peer reviews services by WANO are effectively utilized to gain safety assessment and insights on international level and avoid insular thinking on safety matters and broadening the range of "operational feedback".

Recently, after the nuclear incident at Japan's Fukushima NPP which was triggered by Tsunami, NPCIL proactively constituted four task forces, one each for different generations of reactor design, which have reviewed preparedness and recommended measures for the 'beyond design basis scenarios'. All Stations have reviewed the status at the station with reference to the recommendations forwarded by WANO in this regard. Detailed walk-down of all the plants have also been conducted by specially constituted teams for this purpose. In the same context, two additional task forces reviewed the plants under construction – the Kudankulam units and the 700 MW units.

QUALITY ASSURANCE

NPCIL, in all its endeavors, is committed towards upgradation and continuous improvement in Quality Management, Quality Assurance / Surveillance, Pre-service Inspection / In-service Inspection and interface with regulatory body. Quality Assurance / Surveillance activities have been carried out expeditiously for Projects and Stations. QA Directorate has ensured timely and effective QS coverage to meet the Projects and Stations schedules.

Review and revision of In-service inspection programme document of TAPS-1&2 and MAPS-1&2 were undertaken. Developmental activities related to NDE tooling required for performing In-service Inspection has been undertaken. As part of indigenization, manipulator based Eddy Current Testing System has been developed for Steam Generator tubes of LWR and PHWR.

Corporate QA reviews of Projects and Stations (including PSI / ISI audits) have been completed in a planned way. QA reviews have been conducted based on WANO guidelines.

Emphasis was given for training and certification of QA manpower. In-house NDE training has also been imparted to QA Engineers and Scientific Assistants. Strengthening of QA activities has been undertaken by effective implementation of ISO-9001, imparting training and certification.

Technical assistance and expediting of various Nuclear Power Plant components orders placed by PFBR Project (BHAVINI) and KKNPP have been provided by QA Directorate during the year.

NPCIL continued to provide QA consultancy services to BARC, BHAVINI, DRDO, ITER-India and various State Electricity Boards in the country.

HUMAN RESOURCE MANAGEMENT

Human resource is the most vital asset of the organization and its performance has been improving year after year due to investment in enhancement of knowledge through training and skill development. A detailed projection of human resource management is made in the Management & Discussion Analysis which is annexed as Annexure-B to the Report.

Implementation of Reservation Policies.

SC / ST / OBC reservation policies are being fully complied with and development of SC / ST personnel is being given paramount importance.

Reservation has also been provided to physically challenged as per rules / policy. Presently, 84 physically challenged persons are on rolls of NPCIL. The following represents the statistical information on reservation and related matters:

Strength of reserved categories as on 31st March 2011.

Group	Total No. of Employees	SC	ST	OBC
A	4065	310	69	401
B	4468	716	277	796
C	3301	747	346	927
TOTAL	**11834**	**1773**	**692**	**2124**

Promotions effected during the year 2010-11.

Group	Total No. of Promotions	SC	ST	OBC
A	601	45	12	62
B	590	111	37	123
C	580	160	38	133
TOTAL	**1771**	**316**	**87**	**318**

IMPLEMENTATION OF OFFICIAL LANGUAGE

NPCIL fully complies with the Government of India directives on implementation of Rajbhasha, "Hindi". NPCIL has been relentlessly making all efforts towards continuous improvements in the progressive use of official language among all its units, projects and HQs. NPCIL's efforts in propagation of official language have been receiving commendations and awards at various fora.

Awards and Recognitions for implementation of Official Language:

- NPCIL was awarded first prize for the year 2009-10 for best performance in the field of Official Language Implementation by a non-government Social and Literary Organization "Ashirvaad" working for propagation and promotion of Hindi language since 40 years in Mumbai, Maharashtra.

- NPCIL was awarded third prize for excellent performance in the field of Official Language Implementation by Town Official Language Implementation Committee, Mumbai for the year 2009-10 under the category of large Public Sector Undertakings (PSUs).

To encourage the officers / employees of NPCIL to do their official work in Hindi and allay their apprehensions regarding use of the language, 32 workshops were

organized during the year and 823 officers / employees were trained in these workshops.

During the period, total 96 Hindi monthly competitions were conducted to promote the use of official language which were attended by more than 2769 participants.

In continuation of the efforts, an "All India Hasya Kavi Sammelan" was organized on the occasion of Vishva Hindi Divas on 10th January 2011.

The Parliamentary Committee on Official Language carried out inspection of QA Office, Noida on 8th June 2010 and Tarapur Maharashtra Site on 4th January 2011 to evaluate NPCIL's endeavor in the field of Official Language Implementation. The Official Language related work being done at NPCIL was appreciated by the Committee during these inspections.

VIGILANCE

Vigilance is an important parameter of good corporate governance. The prime objective of Vigilance is to eradicate corruption and malpractices in the organization. The Vigilance Directorate has been playing an important role in imparting knowledge and enhancing awareness by sensitizing employees towards this direction. The focus is to encourage the system improvements to increase efficiency and productivity. The use of website developed by Vigilance Directorate hosts the guidelines issued by Chief Vigilance Commission (CVC) / NPCIL as a tool of communication for remaining vigilant.

- A book on 'Preventive Vigilance for Purchase Contracts' was published to enhance efficiency and effectiveness of scientific officers and managers in Contract Management.
- A number of System Improvements concerning Contract management, IT working, Finance and Personnel matters were implemented.
- To boost preventive vigilance and to spread vigilance awareness, 9 one day seminars were organized at Headquarters and Units. Experts from Central Vigilance Commission and other eminent speakers from outside organizations were invited to address the seminars.
- A documentary film titled 'Bhabha's Vision – Our Mission' containing vigilance message was produced in-house to motivate young scientific officers and other employees in the organization. Apart from the progress made by NPCIL, the film highlights the path shown by Dr. Bhabha with reference to Transparency, Integrity and Dedication towards peaceful use of nuclear energy.
- First-ever Hindi Song on Vigilance i.e. 'Satarkta Abhiyan' was written and composed through in-house efforts.
- Vigilance Awareness Period was observed in NPCIL Headquarters and all the Units during the period 25th October to 1st November 2010. CHETNA – annual edition of Vigilance Magazine was released during Vigilance Awareness Period.

Release of documentary film 'Bhabha's Vision – Our Mission' by Dr. S.K. Jain, CMD, NPCIL

- NPCIL hosted a meeting of Vigilance Study Circle, Mumbai Chapter in December, 2010.
- CVO and Vigilance Officers carried out 117 inspections including surprise inspections of on-going contract works. Two CTE type examinations were also conducted, apart from other investigations.

E-GOVERNANCE

NPCIL is committed to the fulfillment of the expectations of stakeholders through continued enhancement of effectiveness, efficiency and transparency in its functions. In order to meet the above objective, potential of Information Technology as an enabler in its pursuit to achieve operational excellence is being leveraged.

Over the years, NPCIL has employed Information Technology (IT) to automate work processes in order to build robust and transparent systems, improve efficiency, maintain records easing the day to day work of its around 12000 strong parivar. IT has endeavored to support automation of all the wings of NPCIL viz. HR, Finance, Purchase, Inventory, Operations and Maintenance.

Major IT endeavors include the following:

- Corporate Human Asset Review and Management System (CHARMS).
- Computerised Maintenance Management System (CMMS).
- Computerised Event Reporting System (CERS).
- Integrated Business Application (IBA).
- Annual Performance Assessment Report (e-APAR).

CORPORATE SOCIAL RESPONSIBILITY

NPCIL being responsible corporate citizen is committed for the philosophy of caring and sharing. NPCIL has always been well aware of the need to benefit society by enhancing the quality of lives of people in and around its power plants and surrounding areas. The organization continues to play an active role through a host of community development initiatives. The focus was on healthcare, education, infrastructure development and environment.

In order to strengthen further the benefits to society by enhancing the lives of people around its power plants and surrounding areas management began a strong initiative to constitute a dedicated group headed by an official in the rank of Executive Director. The group was entrusted with the responsibilities for Rehabilitation and Resettlements for new Projects as well as the policy formulation, planning, developing the system of implementation and monitoring the Projects and activities pertaining to Corporate Social Responsibilities (CSR) for operating nuclear power stations and projects of NPCIL as well as initial community development near new projects.

A comprehensive guideline on Corporate Social Responsibility in line with guidelines issued by Department of Public Enterprises has been put in place for clear direction for planning, implementation and monitoring of the same.

An Advisory Council with eminent members having wide experience has been formed as an Apex body to guide and advice on matters pertaining to CSR and R&R.

₹ 8 crore was sanctioned for implementation of CSR works by all the operating sites and projects during 2010-2011. Out of this, ₹ 6 crore was spent or committed to be spent against total 77 activities / projects.

In the past CSR activities were taken up based on the experience and the specific requirement of the surrounding areas around operating stations. More structured programme for sustainability and reaching the benefits to the community has been chalked out.

NPCIL continues to focus on three major key dimensions like health, education and infrastructural support for overall development of the villages around Nuclear Power Plants.

CORPORATE ENVIRONMENTAL RESPONSIBILITY

NPCIL, as a responsible public sector enterprise, is conscious about its Corporate Responsibility towards Environment. The 'Environment Safety' has been prominently included in its Mission Statement and is also reflected in the HSE Policy Statement. There is a functional group established at HQ for oversight and guidance on Environmental Safety. The stations and projects are pursuing the Environmental Goals and Objectives of NPCIL. Operating stations have also adopted Environment Management Systems, in line with ISO-14001, and are audited and certified periodically by the accredited agencies. The Environment Management Meets are organized to propagate the knowledge and requirements of Environmental Safety and share Good Practices in this regard.

CORPORATE COMMUNICATION

To enhance the information to stakeholders external and internal communication initiatives were augmented. Periodically, the achievements of NPCIL were highlighted through print and electronic media throughout the country. NPCIL website was strengthened by loading large public information material essentially to raise awareness on nuclear power, safety of nuclear power, radiation aspects and so on. Several publications in different languages on Jaitapur Nuclear Power Project (JNPP) are also released.

A Hall of Nuclear Power at Nehru Science Centre, Worli, Mumbai was also commissioned to share factual information on nuclear energy, nuclear power plants, health, radiation and safety among the visitors from various target groups. This hall of nuclear power comprises of interactive models, information kiosks, displays on all facets of nuclear power.

An information centre comprising of multimedia kiosks, back-lit and front-lit panels and other interactive exhibits have been commissioned at the corporate office in Mumbai, especially to share key information regarding NPCIL and nuclear power to the visitors and employees.

The Company organized several awareness campaigns on nuclear power and NPCIL including safety aspects, site selection process and pre-project activities. The awareness programmes were also conducted for the surrounding population, student and teacher community, revenue officers and journalists around the new green-field sites. The Company also organized scientific and technical displays at ten exhibitions showcasing the Company's achievements, capabilities and the benefits of nuclear power. In addition, exclusive exhibitions in Marathi language were organized in respect of JNPP at Mumbai and Ratnagiri region essentially to share the information on nuclear power, JNPP and allay the apprehensions of public.

THE RIGHT TO INFORMATION ACT, 2005

An elaborate mechanism exists with 7 Nos. of Assistant Public Information Officers, one at each site, one Central Public Information Officer and an Appellate Authority at Headquarters to deal with the requests received under the RTI Act.

CPIO's Office has been established with adequate manpower to carry out its functions. The mandatory information required under the Act [section 4(1)(b)] has been posted on NPCIL website and the information was updated as required.

Three Hundred and Eighty Two (382) requests were received during the year 2010-11 under RTI Act, 2005, which have been replied. Sixty two (62) numbers of first appeals were disposed off.

PARTICIPATION IN INTERNATIONAL ACTIVITIES

NPCIL continues to be a member of various international organizations viz. World Association of Nuclear Operators (WANO), CANDU Owners Group (COG) and World Association of Nuclear Association (WNA). NPCIL actively participated in various programmes of these organizations to enhance the safety and reliability of its nuclear power plants.

NPCIL also participates in various International Atomic Energy Agency (IAEA) and Nuclear Energy Agency (NEA) activities. NPCIL participated in preparation and presentation of National Report for International Convention on Nuclear Safety at IAEA, Vienna.

NPCIL is one of the first members of WANO and is currently member of two WANO regional centres at Tokyo and Moscow. All the nuclear power plants operating in over 30 countries of the world are its members. Dr. S.K. Jain, Chairman & Managing Director is on worldwide WANO governing board.

During the current year, NPCIL hosted WANO Peer Review of its plants which were carried out by teams consisting of experts from several countries representing global nuclear safety standards and found to be very useful in bringing in international perspective to our plants. Also, WANO organized Technical Support Missions for NPCIL to achieve next higher level of safety and reliability. Several persons from NPCIL participated in the important meetings, seminars and peer reviews organized by WANO and had the opportunity to discuss various issues related to improvement in plant performance with experts from other countries.

COG has installed a satellite server to replicate all the data available of main server of COG for easy and fast access to valuable data available on COG. The database has also been provided access to plant sites so that they remain connected with latest developments in safety of operating CANDU plants worldwide. NPCIL participants regularly participate in various programmes.

NPCIL also draws benefit from membership of WNA; especially it provides detailed worldwide report on all related issues of fuel like availability, utilization and forecast for future.

Recently NPCIL got significantly benefitted from above organizations in obtaining accurate and timely information on Fukushima accident in Japan.

DIRECTORS' RESPONSIBILITY STATEMENT

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

1. that in the preparation of the annual accounts, the applicable accounting standards have been followed, along with proper explanation relating to material departures;

2. that they have selected such accounting policies and applied them consistently and made judgments 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 and of the profit or loss of the Company for that period;

3. that they have 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;

4. that they had prepared the annual accounts on a going concern basis.

CONSERVATION OF ENERGY / TECHNOLOGY ABSORPTION / FOREIGN EXCHANGE EARNINGS AND OUTGO

Particulars as required under Section 217(1) (e) of the Companies Act, 1956 read with the Companies (Disclosure of Particulars in the Report of the Board of Directors) Rules, 1988, are given in Annexure-A to this report.

PARTICULARS OF EMPLOYEES

Pursuant to Section 217(2A) of the Companies Act, 1956 read with the Companies (Particulars of Employees) Rules, 1975 as amended, none of the employees of the Company were in receipt of remuneration in excess of limits prescribed under the said rules.

MANAGEMENT DISCUSSION AND ANALYSIS

Annexed as Annexure-B to this report.

CORPORATE GOVERNANCE

The Department of Public Enterprises (DPE) has laid down guidelines on Corporate Governance for CPSEs. The Department of Atomic Energy (DAE), the administrative ministry of NPCIL, has requested NPCIL to comply with the instructions. The guidelines are similar to the Corporate Governance Clause in the Standard Listing Agreement of Stock Exchanges.

The Board members and senior management have reaffirmed the compliance with the code of conduct.

A compliance report on Corporate Governance is given as Annexure-C.

The Company has obtained a certificate from M/s. Parikh & Associates, a firm of Practicing Company Secretaries regarding compliance of conditions of corporate governance as indicated in the DPE Guidelines. The Compliance Certificate is annexed to this report as Annexure-D.

STATUTORY AUDITORS

The Statutory Auditors of your Company are appointed by the Comptroller & Auditor General of India. M/s. Kalani & Co., Chartered Accountants, Jaipur were appointed as Statutory Auditors for the Financial Year 2010-11.

OBSERVATIONS OF THE STATUTORY AUDITORS

Comments of the management on the observations of the Statutory Auditors are given in Annexure-E to the report.

COMMENTS OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA

The accounts for the year ended 31st March 2011 were reviewed by the Comptroller and Auditor General (C&AG) of India. Comments of the C&AG on annual accounts have been given as Annexure to the report.

CHANGES IN THE BOARD OF DIRECTORS

- Dr. Srikumar Banerjee, who has been appointed as Chairman, Atomic Energy Commission and Secretary, DAE, has relinquished charge of the post of Director, BARC w.e.f. 19th May 2010 and consequently ceased to be Director of NPCIL.

- Shri H.L. Bajaj, Member (Technical), Appellate Tribunal of Electricity, who had been re-appointed as a part-time Director on 16th December 2008, ceased to be Director w.e.f. 19th May 2010 upon his attaining the age of 65 years.
- Dr. Nalini Bhat, Adviser (IA), Ministry of Environment & Forests has been appointed as a part-time Director on the Board w.e.f. 15th July 2010 vice Dr. G.K. Pandey.
- Shri V.M. Kaul, Director (Personnel), Power Grid Corporation of India Ltd. has been appointed as a part-time Director on the Board w.e.f. 15th July 2010 vice Shri Anand Mohan.
- Shri Chandan Roy, Director (Operations), NTPC Ltd., who had been appointed as a part-time Director w.e.f. 8th October 2004 ceased to be Director w.e.f. 1st August 2010 consequent on his superannuation.
- Dr. R.K. Sinha, Director, Bhabha Atomic Research Centre has been appointed as a part-time director on the Board of NPCIL w.e.f. 15th September 2010.
- Shri T.S. Bhattacharya, retired Managing Director of the State Bank of India, who had been appointed as a part-time Director w.e.f. 8th May 2008 for a period of 3 years, ceased to be Director w.e.f. 8th May 2011 on completion of his term.
- Shri Rakesh Nath, Member (Technical), Appellate Tribunal for Electricity, has been appointed as a part-time Director w.e.f. 26th April 2011.
- Dr. Arbind Prasad, Senior Adviser (Power & Energy), Planning Commission, has been appointed as a part-time Director on the Board w.e.f. 17th June 2011 vice Shri S.P. Sethi.
- Shri J.K. Ghai, Director (Finance), NPCIL who had been appointed as a whole-time Director since 10th February 2006, ceased to be Director on completion of his term on 31st July 2011.

The Board welcomes appointment of Dr. Nalini Bhat, Shri V.M. Kaul, Dr. R.K. Sinha, Shri Rakesh Nath and Dr. Arbind Prasad and places on record its sincere appreciation of the valuable services rendered by Dr. Srikumar Banerjee, Shri H.L. Bajaj, Shri Chandan Roy, Shri T.S. Bhattacharya and Shri J.K. Ghai during their association with the Company.

APPRECIATION

The Board would like to express its gratitude to the Department of Atomic Energy, Ministry of Power, Ministry of Programme Implementation & Statistics, Central Electricity Authority, Planning Commission, Ministry of Environment & Forests, other Ministries, Departments of the Government of India, State Governments for their cooperation, banks, financial institutions and other investors who have continued to repose their confidence in the Company.

The Board would also like to place on record its appreciation of the services rendered by the auditors for their service and valuable advice.

The Board wishes to express its special appreciation of the hard work put in by each and every employee of the Company and the cooperation extended by the Employees' Union, Supervisors' and Officers' Associations.

For and on behalf of the Board of Directors

(S.K. JAIN)
Chairman & Managing Director
Place: Mumbai
Date : 6th August 2011

Annexure 'A' to the Directors' Report

Information under section 217(1)(e) of the Companies Act, 1956 read with Companies (Disclosure of Particulars in the Report of the Board of Directors) Rules, 1988 and forming part of the Directors' Report for the year ended 31st March 2011.

CONSERVATION OF ENERGY

A. Energy Conservation measures taken:

Conservation of energy and optimization of resources have been given high priority in all the operating Nuclear Power Stations (NPPs) of NPCIL. A headquarter instruction exists to guide all the stations to take necessary measures for the conservation of energy. The following energy saving measures were continued to be taken by the Company.

Energy Conservation Committees which were formed in all the operating NPPs of NPCIL meet periodically to review the situations and suggest measures for energy conservation.

Continuous efforts at each station are put in to reduce steam, light water and compressed air leaks, consumption of various gases viz. hydrogen, nitrogen, carbon dioxide, helium, etc. and the same is closely monitored. During station operation, number of running equipment has been optimized. In some of the stations, particularly in northern region, the benefit of winter season is fully utilized to operate the units with optimal number of equipment without any loss of plant efficiency. To reduce the heat losses from hot piping and equipment, thermal imaging is carried out in all the stations and remedial measures like repair / replacement of insulation with better material is done. Equipment modifications and process modifications in the operating stations were done which resulted in a substantial gain in consumption of energy.

Continuous trend monitoring of heavy water and light water collections during reactor operation has helped stations in taking appropriate remedial measures resulting in reduction in consumption of energy.

During plant shutdown, minimum number of equipment are kept operating for energy conservation.

Replacement of tube lights/lamps with solar power lamps and energy efficient lamps, proper maintenance of the vehicles to achieve fuel efficiency and various other energy conservation measures are taken up on priority. In off hours lights are optimized in offices, plant area, canteen and maintenance shops.

14th December 2010 was celebrated as Energy Conservation Day at all our stations to create awareness towards energy conservation among officers, employees and their families.

B. Additional investments and proposals for reduction of consumption of energy:

In all stations use of solar energy has been initiated.

Energy saving lamps are being replaced in place of conventional lighting fixtures in almost all the stations.

All the stations have targets of their own for next fiscal to bring down energy consumption in terms of reduction in auxiliary consumption, replacement of old equipment and lighting fixtures with energy efficient ones, replacement of conventional fan regulators with electronic regulators, installation of solar powered lamps and reduction in consumption of consumables.

Hydrogen Recombiner Test Facility in construction stage

C. Impact of measures at A and B above for reduction of energy consumption:

During the financial year, NAPS-2 and KAPS-1 were re-commissioned after EMCCR and KGS-4 was commissioned for the first time. Hence, because of additional requirements for commissioning of these units, the consumption of high speed diesel, industrial gases, DM water and TG lub oil was higher as compared to previous year. However, the various measures taken by the Stations for conservation of energy resulted in reduction of Station Auxiliary consumption.

FOREIGN EXCHANGE USED / EARNED

(₹ in crore)

		As at 31st March 2011	As at 31st March 2010
1.	Foreign Exchange Outgo		
a)	Value of Import based on CIF basis	762	738
b)	Expenditure		
	- Project Related Payments	70	97
	- Interest and Agency Fees	-	-
	- Others	5	6
2.	Foreign Exchange Earned	0.04	0.10

FORM-B

A. RESEARCH & DEVELOPMENT/TECHNOLOGY DEVELOPMENT (R&D/TD)

1. Specific areas in which R&D/TD is carried out:

R&D / TD activities in the Company are oriented towards addressing the specific requirements emanating from its operating stations, projects under construction and the supporting groups within NPCIL. These efforts are focused more towards continued enhancement of nuclear safety, improvement in plant performance parameters, reduction in operational costs, reduction in project gestation period and costs and reduction in Person-Sievert (man-rem) expenditure. A greater thrust is also being imparted to indigenization of hitherto imported components and equipment and broadening the vendor base to facilitate the expansion of nuclear programme.

The efforts are mostly application-oriented design & development specifically addressing the Control & Instrumentation (C&I) requirements emanating from power plants under construction and from operating stations to support the existing C&I electronics systems. The design and development efforts in R&D-ES are concentrated towards electronics and computer based controls and instrumentation systems for 700 MW projects.

Specific areas of development in R&D-ES are standardization of Hardware Modules, Software building blocks, Human Machine Interface, Generic Embedded Software, development of computer based C&I systems, interaction with academic and research institutions to identify future needs for modernization of C&I, upgradation of computer based systems in operating stations, etc.

2. Benefits derived as a result of the above R&D / TD:

The establishment of in-house development and testing facilities related to Nuclear Systems has benefitted the Company in the following areas:

- Performance verification of first of a kind systems related equipment for 700 MW projects such as Containment Spray System, Passive Decay Heat Removal System.
- Test facilities for nuclear safety studies are established / being established.

Construction activities of Integral Test Facility at Tarapur (ITFT) and Hydrogen Recombiner Test

Facility (HRTF) have progressed significantly.

- Techniques developed for repair / rehabilitation / refurbishment of nuclear power plant systems and components.
- Development of Tele-operated manipulators / tools / gadgets for inspection and maintenance tasks in nuclear power plants.
- Establishment of facility for aging studies and life management of components.
- Indigenisation of equipment/components. Significant progress has been achieved in indigenous development of Self-Powered Neutron Detectors (SPNDs) with requisite confidence to develop a wide range of such detectors within grasp.

The establishment and maintenance of in-house R&D-ES laboratories and facilities enabled the Company in the following areas:

- 'Development and Testing of System Software' and 'Finalization of Hardware' for several Computer Based Systems including safety and safety-related systems. The validated software was installed and commissioned on the corresponding hardware panels of the eleven systems at Kaiga-3, Kaiga-4, RAPS-5 and RAPS-6 and these systems are working satisfactorily.
- Upgradation of Electronics and Computer Based C&I Systems in KGS-1, KGS-2, RAPS-3 and RAPS-4.
- Development and testing of MCA based Stack Monitoring System and IR based Annulus Gas Monitoring System and setting up Radiation Monitors Calibration Test Facility at TAPS R&D Centre.
- Standardization of hardware and software for computer based systems for new plants which will result in cost savings.

EXPENDITURE ON R&D/TD

a.	Capital	₹ 12 crore
b.	Recurring	₹ 4 crore
c.	Total	₹ 16 crore
d.	Total R&D expenditure as % of total turnover	0.27 %

B. TECHNOLOGY ABSORPTION, ADAPTATION & INNOVATION

The Company's self-reliance in the areas of design, construction, commissioning and operation of Pressurized Heavy Water Reactors (PHWRs) is near total. Continued efforts are made to upgrade and update the Company's knowledge-base and to adapt and absorb new technologies that are being evolved. Boiling Water Reactors (BWRs) are also operated by the Company meeting international standards on both safety and performance. Assimilation of technology with respect to the construction of Pressurized Water Reactors (PWR) and Fast Breeder Reactor (FBR) is also underway. Innovative techniques have been introduced in reactor design to upgrade 540 MW PHWR to 700 MW by permitting limited boiling in reactor coolant channels with minimum changes in nuclear components. This has led to relative ease in review and acceptance by regulatory body of new systems and concepts for 700 MW reactors. It is significant to note that 700 MW design has essentially conceptualized and incorporated the passive systems and hook-up schemes which have become relevant post-Fukushima. R&D activities had included testing and verification of such a new system. The role of erstwhile R&D Nuclear Systems Group has been expanded and this group is now known as Technology Development Group. Role of R&D-Electronics Systems Group is redefined to put greater thrust on development of all safety related C&I systems with the goals of higher reliability, availability and cost reduction and to fulfill all requirements of AERB.

Annexure – B to Directors' Report

MANAGEMENT DISCUSSION AND ANALYSIS

Madras Atomic Power Station

India's energy requirement, considering **8%** growth in GDP, will be **3880 BUs** by 2031-32 needing an installed capacity of **778 GW**

The projected nuclear power capacity by the year 2032 is at **63 GW**

ECONOMIC ENVIRONMENT

The Indian economy has emerged with remarkable rapidity from the slowdown caused by the global financial crisis of 2007-09. GDP grew by 8.6% in FY 2010-11 from 6.8% in FY 2008-09 and 8.0% in FY 2009-10. Growth is strong in 2010-11 with a rebound in agriculture and continued momentum in manufacturing sector.

INDUSTRY OVERVIEW

India is the world's 5th largest energy consumer in the world and is expected to become the 3rd largest energy consumer by 2020 (after USA and China).

India's Power Sector

The Eleventh Five Year Plan (2007-12) originally envisaged a capacity addition of 78700 MW. The revised Mid Term Appraisal (MTA) target for total capacity addition is now 62,374 MW, which is lower than the original target but is nevertheless about three times the capacity actually added in the Tenth Plan.

The revised targets of capacity addition during Eleventh Plan, source-wise, are as under:

(in MW)

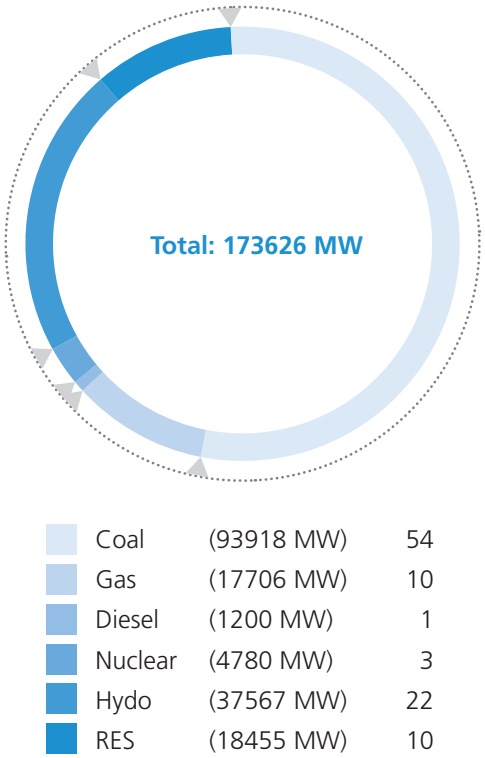
Sector	Hydro	Thermal	Nuclear	Total
Central	2,922	14,920	3,380	21,222 (34%)
State	2,854	18,501	-	21,355 (34%)
Private	2,461	17,336	-	19,797 (32%)
Total	8,237	50,757	3,380	62,374 (100%)
	13.21%	81.37%	5.42%	

At the time of independence, the Generation Installed Electric Power Capacity in India was only about 1.5 Giga Watt (GW). The power sector has registered significant progress since the process of planned development of the economy in 1950. The installed electric power capacity of the country as of 31st March 2011 stood at a total of 174 GW excluding captive generating capacities.

The Generation Installed Capacity Mix as on 31st March 2011 is as under:

Source	Capacity (MW)	% Share
THERMAL	112824	64.98
COAL	93918	54.09
GAS	17706	10.19
DIESEL	1200	0.70
NUCLEAR	4780	2.80
HYDRO (Renewable)	37567	21.61
RES (MNRE)	18455	10.61
TOTAL	**173626**	**100.00**

All India total installed capacity (MW) (%)



Electricity generation from the power utilities in the country increased from a mere 5.1 Billion Kilowatt hours (BkWh) in 1947 to 811 BkWh in 2010-11. The total electricity generation in the country during 2010-11 was 811 Billion Units (BUs) registering a year-to-year growth of around 5.5%.

The break-up of generation during 2010-11 is as under:

Category	Target 2010-11 (BU)	Actual 2010-11* (BU)	% of Target	Actual Last Year 2009-10 (BU)	Growth (%)
Thermal	690.9	664.9	96.24	640.5	3.81
Nuclear	22.0	26.3	119.48	18.6	41.04
Hydro	111.4	114.3	102.64	103.9	10.01
Bhutan Import	6.5	5.6	85.68	5.4	4.69
Total	**830.8**	**811.1**	**97.63**	**768.4**	**5.55**

** Generation excludes generation from plants up to 25 MW Capacity.*

The electricity supply is, however, insufficient to meet the demand. The country's prevailing energy deficit is 8.5% and the peak capacity shortage is 10.3%. The per capita consumption of electricity increased from 15 kWh in 1950 to about 700 kWh. The Integrated Energy Policy of the Government of India forecasts that the growth of per capita electricity consumption in India is expected to rise about four times from 700 kWh to 2500 kWh by 2032.

To meet the increasing energy requirements, the Integrated Policy projects the need for an installed capacity of about 778 GW by the year 2032 for a growth rate of 8%, of which nuclear power is envisaged to be about 63 GW by 2032 representing around 9% of the total installed capacity of the country.

Nuclear Scenario Post Fukushima Incident

An earthquake of magnitude 9.00 Richter scale hit north-east Japan on 11th March 2011 followed by tsunami of 14 to 15 meter high at Fukushima Reactor site beyond the design basis.

This earthquake affected nuclear power plants at four sites (Onagawa 1, 2 and 3; Fukushima Dai-ichi 1, 2, 3, 4, 5 and 6; Fukushima Dai-ini 1, 2, 3 and 4; and Tokai 2). All the operating units at the time of earthquake were automatically shut down. However, at Fukushima Dai-ichi, the offsite power loss during earthquake was followed with loss of onsite power as the diesel generators for units - 1, 2, 3 & 4 were inundated by tsunami which followed. The decay heat could not be removed leading to extensive damage to the reactors and uncontrolled release of radioactivity followed.

With the timely execution of emergency plan, no significant health effects to the workers and public have been reported.

NPCIL has been closely monitoring the evolution of the event at Fukushima and getting information from International Agencies like International Atomic Energy Agency (IAEA), World Association of Nuclear Operators (WANO), Japan Atomic Industrial Forum (JAIF) and NPCIL representative posted at WANO Tokyo Centre.

The safety review of Indian NPPs post Fukushima incident -

i) Considering the severity of the incident, proactive action of constituting four task forces – one each for different generations of designs of reactors – was taken. Indian Nuclear Power Plants consist of two Boiling Water Reactors and eighteen Pressurized Heavy Water Reactors, with three types of designs. Additional task forces reviewed the plants under construction, namely VVERs at Kudankulam and 700 MW PHWRs at KAPP-3&4 and RAPP-7&8.

   The review and re-evaluation by the task forces as mentioned above re-affirm adequate provisions to handle station blackout situation and maintaining continuous cooling of reactor core for decay heat removal in the event of extreme external natural events. Notwithstanding the above, NPCIL has decided to reinforce the existing systems.

ii) Atomic Energy Regulatory Board has also constituted a high level specialist committee for safety review of existing plants and its recommendations would be implemented by NPCIL.

iii) Ministry of Environment & Forests, Government of India, has constituted a committee to assess impact of tsunami and how it can be mitigated.

Global Nuclear Power Scenario

Commercial nuclear power generation in the world is a mature, established technology, having accumulated over

forty years of successful operation. There are 440 nuclear power reactors in the world with an installed capacity of about 375 GW having 14436 reactor-years of cumulative experience. Nuclear power accounts for around 14% of world's electricity generation.

Post Fukushima incident, the initial apprehensions about nuclear power have subsided and world over there is a clear reconfirmation of the inherent safety of nuclear power.

With initial exaggerated concerns having given way to a sober return of confidence based on facts rather than misconceptions, the world community has reposed its faith in nuclear power, as several countries are in the forefront to implement their own nuclear power programmes.

Environmental Impacts of Nuclear Power

While SPM, CO_2, SOx and NOx, emissions and waste disposal are dominant in the context of generating energy from fossil fuels, safety of environment against radiation is a specific concern unique to nuclear power. Environmental risks that are taken care of at various stages of the nuclear fuel cycle are – mining (accidents, release of radon gas and radioactive dust from Uranium mines and mills), radioactive seepage from waste and land degradation, processing (accidents), transport (accidents, risk of proliferation), and electricity generation (risk of catastrophic accidents, low and high level radioactive wastes).

Additionally, decommissioning of nuclear plants entails the disposal of radioactive wastes. Significant technological development has been made in the area of radioactive waste disposal and decommissioning. There is time in India for commercial deployment of these back-end activities. They are yet to be proven at large enough scale to satisfactorily resolve economic issues. The global data suggests that of all the conventional energy options, nuclear energy has posed the least risks in terms of mortality per billion megawatt hours of generation.

Role of Nuclear Power and Potential in India

India's nuclear power programme evolved in three stages to utilize modest uranium and large thorium reserves in the country for electricity generation. The first stage is based on Pressurised Heavy Water Reactors (PHWRs), using natural uranium as fuel. This stage yields plutonium, which forms the basis of development of the second stage, using plutonium along with thorium in Fast Breeder Reactors (FBRs). This stage yields more plutonium and an isotope of uranium. In the third stage, advanced power reactors based on Uranium-Thorium cycle are envisaged for deployment.

The Integrated Energy Policy (2006) of the country recognizes that nuclear energy offers the most potent means to long-term energy security. India has to successfully realize the three-stage development programme and thereby tap its vast thorium resources to become truly energy independent beyond 2050. The commercial deployment of thorium requires a significant capacity of FBRs and development of technologies for thorium utilization. This requires time and therefore capacity addition through import of large capacity Light Water Reactors (LWRs) with fuel assumes importance. As per the said policy, country's energy requirement, considering 8% growth in GDP, will be 3880 BUs by 2031-32 needing an installed capacity of 778 GW. The projected nuclear power capacity by the year 2032 is at 63 GW.

Nuclear energy has significant potential and, in the long run, the rapid depletion of India's fossil resources makes the country's nuclear fuel resources (natural uranium plus large thorium reserves) an important future energy source. In the short-term, nuclear power already enjoys a locational advantage in regions that are far from India's coal bearing areas. Nuclear power is a clean, compact, reliable, safe, environmentally benign, devoid of Green House Gas (GHG) emissions and economically viable source of power generation.

The present share of nuclear power in the country's power scenario is 2.8% which needs to be raised to about 8% in the next two decades and gradually to 25% by 2050. This would necessitate augmentation of capacity and capability in several areas of nuclear power technology encompassing Sites for nuclear power plants, industrial infrastructure, capability and capacity in manufacture and supply of exacting-standard equipment and supplies, human resource development and so on.

COMPANY OVERVIEW

Role of NPCIL

With the formation of Nuclear Power Corporation of India Limited in 1987 as a Central Public Sector Enterprise under the aegis of Department of Atomic Energy in India, the nuclear power generation moved to the commercial domain.

NPCIL has attained maturity in the first stage of nuclear power programme. Today, NPCIL is unique in having comprehensive capacity in the various facets of nuclear technology viz. site selection, design, construction, commissioning, operation & maintenance and life extension of nuclear power plants.

Nuclear Power Plant Operations

Given the mandate of expanding the nuclear power base within the country, as per the plans and schemes of the Government of India, NPCIL owns and operates a fleet of 19 nuclear power reactors, in addition to operating the Rajasthan Atomic Power Station Unit-1 on behalf of DAE. A very high availability factor, one of the yardsticks for measuring operational efficiency of a nuclear power plant, sets apart the nuclear power reactors of NPCIL. The overall availability factor of operating stations for the year 2010-11 was 89%.

The year 2010-11 recorded the highest nuclear power generation since the inception of the Company. The generation and capacity factor during the year under report were 26472 MU and 71% respectively as against 18803 MU and 61% respectively last year. This is an increase in generation by 41% over the last year resulting from improved fuel availability from both indigenous and imported sources.

2010-11 recorded the highest nuclear power generation since inception. The generation and capacity factor during the year under report were **26472 MU** and **71%** respectively as against **18803 MU** and **61%** respectively last year

There are 10 reactors under IAEA Safeguards using imported fuel. They are TAPS-1&2, RAPS-1&2, RAPS-3&4, RAPS-5&6 and KAPS-1&2. The total capacity under safeguards stands at 1940 MW.

TAPS-2 of the first pair of commercial nuclear power reactors in the country registered 590 days of continuous run, which is a record in the operation of Indian nuclear power reactors. Eight reactors viz. KAPS-1 (372 days), RAPS-4 (373 days), RAPS-3 (404 days), KAPS-2 (406 days), MAPS-2 (432 days), KGS-1 (487 days), KGS-2 (529 days) and TAPS-2 (590 days) have so far recorded continuous run of more than a year. Earlier, KAPS-1 became the first Indian nuclear power reactor operating uninterrupted for more than a year (372 days), fulfilling the long cherished target of operating a nuclear power plant continuously without any outage from one mandatory shutdown to another.

Capacity Addition

NPCIL added a capacity of 220 MW by completion of Kaiga-4 during the year, increasing its capacity base from 4460 MW to 4680 MW. Kaiga-4 became the 20th nuclear power reactor of the country. Kaiga-4 is the last unit in 220 MW size series. Ongoing and future PHWR projects are of 700 MW unit size.

Renovation and Modernization

Enmasse Coolant Channel Replacement (EMCCR) and Enmasse Feeder Replacement (EMFR) together with upgrades have been carried out at NAPS-2 and KAPS-1 and were synchronized to grid.

Status of Ongoing Projects

The work on Kudankulam (KKNPP) Unit-1 is nearing completion. KKNPP-2 is under an advanced stage of construction. These units are expected to commence operations in the year 2011 and 2012.

The work on two other ongoing projects, KAPP-3&4 and RAPP-7&8 comprising of indigenous 700 MW PHWRs are progressing. These projects are expected to be completed by 2017 with a capacity addition of 2800 MW.

New Projects

Steps in respect of implementation of bio-diversity conservation plan as advised by the Ministry of Environment & Forests, Government of India are initiated for Jaitapur site. In respect of KKNPP-3&4, the site has been made ready in all respects to take up execution works. The CRZ clearance is awaited.

Capacity Addition through International Cooperation

Early Work Agreements (EWAs) have been signed with AREVA, France in respect of JNPP-1&2 (2 x 1650 MW) and Atomstroyexport, Russian Federation for KKNPP-3&4 (2 x 1000 MW) for expeditious project implementation.

Pre-Project Activities at New Sites

Pre-project activities including geo-technical studies, the process of obtaining environmental clearance, land acquisition and so on, at four new green field sites viz. Gorakhpur in Haryana and Chutka in Madhya Pradesh for indigenous 700 MW PHWRs and Kovvada in Andhra Pradesh and Mithi Virdi in Gujarat for setting up 1000 MW plus LWRs based on international cooperation have been commenced.

Export of Nuclear Reactors

NPCIL is open for export of 220 MW and 540 MW PHWRs known as small and medium size reactors, bearing the stamp of Indian ingenuity, which could prove to be optimal power solutions for countries where medium size electricity grids are in operation and are keen on expanding their power base.

MOU Performance

The expected MOU rating for the year 2010-11 is "Very Good". With the availability of imported fuel for reactors under IAEA safeguards and improved fuel supply from indigenous sources, NPCIL surpassed the generation target in the year 2010-11.

Power Tariffs

The tariffs of electricity generated from atomic power stations are finalized and notified by DAE in consultation with Central Electricity Authority. Atomic power stations have been following single part tariff structure taking into account the stipulated norms for technical and financial parameters. The pricing is based on the Return on Equity method. The average tariff of NPCIL stations during the year was ₹ 2.49 paise/kWh (as against ₹ 2.30 paise/kWh for 2009-10). The variation is due to fuel adjustment charges.

Challenges

Nuclear Power is inherently a high technology enterprise and that is the fundamental reason for not many countries having it. Its dual use capability, of its being used for producing devices capable of mass destruction, has also led restrictions in its extensive development.

Although the inevitability of nuclear option is now universally accepted, there exist some associated challenges. These emerge mainly from the public perception of risks associated with nuclear power, which are disproportionately higher than the actual risks. These include safety, radio-active waste management, costs and other perceived risks like effects on health, security and proliferation.

The most important challenge that has emerged at present is to address the perception of the public, policy makers, planners and other strata of the society about safety of nuclear power, in the wake of Fukushima incident in Japan. However, recognizing this aspect, NPCIL has taken several additional measures in the Public Awareness, with a multi-pronged approach for effective enhancement of public perception about nuclear power. This comprises structured public awareness and communication campaigns, outreach activities to disseminate authentic information about safety, radiation and other related aspects of nuclear power in a transparent manner to various groups.

The availability of infrastructure for supply-chain and project execution, sites, human resource and investments are the other key challenges in implementation of the programme. Ensuring a smooth supply-chain and projects execution, capacity and capability enhancement of Indian industry, adequacy and appropriateness of the human resource and appropriate partnerships for investment for the power programme are the key focus areas. NPCIL has identified and initiated anticipatory actions in this regard. Although challenges ahead are many, the outlook for nuclear power remains positive.

OUTLOOK

Globally, fossil fuels will remain the dominant source of energy till 2030. As fossil fuel resources are not renewable, the worldwide energy mix of today will prove to be unsustainable. Therefore, industry experts are supporting increased adoption of nuclear and renewable energy as well as increased use of energy efficiency techniques.

The country's nuclear power programme ahead to realize rapid nuclear power capacity addition provides robust outlook for NPCIL. With the improved fuel availability from domestic international sources (for reactors under safeguards in accordance with the Separation Plan) and the construction of two reactors under advanced stages of completion, the generation is expected to increase progressively in future.

NPCIL plans to launch by 2012 additional in-house designed 4 x 700 MW PHWRs (Four have already been launched) and 10 LWRs having capacity of 10000 MW with International Cooperation. As per the long term plan of the Company, by 2032, LWRs upto the capacity of 40000 MW is expected to be launched. To conclude, at present, NPCIL is poised for meeting national expectations of rapid nuclear power capacity addition in the country.

HUMAN RESOURCE MANAGEMENT

NPCIL Parivar consists of 11834 strong and dedicated workforce with 3414 Engineers and Scientists, 5784 technical employees, 381 non-technical executives and staff and 2255 Auxiliary support staff such as paramedical service, fire service, etc., who spearhead the activities of the organization. NPCIL's workforce includes 1091 women employees.

The group-wise staff strength consists of 4065 in Group A, 3301 in Group B and 4468 in Group C categories of employees.

All HR initiatives are directed towards achievement of organizational goal of attracting, motivating and retaining the precious asset i.e. Human Resource. These measures included developing strategic and incremental packages from time to time for effective Human Resource Management to meet the aspirations of the employees.

The implementation of the Sixth Pay Commission in all the areas which are in line with the Government orders has paved way to improvise the existing working conditions, facilities and benefits. It has created significant impact in reduction of attrition rate in NPCIL.

Optimization of manpower continued to be an important strategy towards best utilization of human resource. Accordingly, staffing has been done strictly in accordance with the optimized manpower models for Projects, Stations and Headquarters, including multi-unit Sites.

Training and Development initiatives covered competency development for fresh as well as experienced manpower across hierarchy. Besides, well developed internal training programmes, customized management development programmes with the involvement of professional training institutes and experts were organized for higher levels. 2426 man-days of training was imparted during the year. 34 employees were also sponsored for acquiring higher education in Technology, Management, etc. Students of reputed colleges were imparted practical training in different engineering and management disciplines to meet their curriculum requirements.

During the year, as a part of annual induction programme of young blood to the Organisation, 110 posts in Scientific category for NPCIL Batch-18, 80 direct recruits in Scientific categories and 47 posts in the non-technical categories (Group - A & B) were filled through centralized recruitment process. In the career progression front, 856 employees in Scientific and Technical categories, 162 (82 executives and 80 non-executives (HQs) in non-technical categories were elevated to next higher grade. Design and development of online portal for inviting online applications for non-technical executive posts were undertaken. Existing system of Annual Confidential Report (ACR) was modified to electronic Annual Performance Assessment Report system (eAPAR).

Employee Relations

Harmonious Employee Relations prevailed in all the Stations, Projects and Headquarters. Regular meetings were held with the recognized Unions at Station/Project levels and with the Joint Consultative Council at the apex level to discuss and resolve the various employees' related issues. The harmonious employee relations are a result of sound and constructive participative approach adopted by Management in decision making in matters affecting the general welfare and service conditions and conflict resolutions based on mutual understanding, which resulted in increased production and productivity.

A structured mechanism for redressal of grievances is in operation which is sensitive and attentive to employee grievances at all levels. The pension grievances registered in CPENGRAMS, a website of Department of Pension and Pensioner's Welfare were attended immediately.

Achievement by Stations

TAPS-1&2, KAPS, RAPS-3&4 and TAPS-3&4 qualified as Excellent Performing Stations during the year and a reward of ₹ 2,000/- was sanctioned to each employee of the above Stations.

MAPS and RAPS-3&4 achieved longest continuous run of 432 days and 404 days respectively and the employees of the stations have been sanctioned a special reward of ₹ 4,000/- each.

Continuous run of Industrial Accident Free Period was achieved by RAPS-1&2 and Kaiga-3&4 and the employees were given a memento.

Employee Participation

Successful negotiations and participation of Employees' Unions have led to finalisation of NPCIL Performance Linked Incentive Scheme in NPCIL.

Decentralised Certification of Standing Orders with regard to NPCIL and its Units have been taken up and the Standing Orders in respect of Headquarters and TAPS-1&2 have been duly got certified during the year.

Industrial Dispute raised by NAPS Union on new Allotment policy was mutually settled.

Other Welfare Measures

Enhancement of insurance coverage and premium thereof was carried under NPCIL (Employees Group Savings Linked Insurance) Scheme and one more option to the left over employees to become members of the Scheme was extended and a total of 11,419 employees have become members under the revised coverage.

Grant of payment of ex-gratia has been effected to the families of 24 deceased employees.

FINANCIAL REVIEW

Results of Operations

(Profit and Loss Statement Analysis)

Total Income

The total income comprises of income from sale of electricity, consultancy services and interest earned on investments of temporary surplus in term deposits with banks and bonds. The total income for FY 2010-11 is ₹ 6898 crore as against ₹ 4479 crore in the previous year registering an increase of 54%.

Sale of Electricity

The Company's bulk customers are electricity utilities owned by State Governments and Union Territories. Revenue on sale of electrical energy is recognized net of levies.

Income from sale of electricity for the FY 2010-11 was ₹ 6016 crore which constituted 87% of the total income. The income from sale of electricity has increased by 58% over the previous year's income of ₹ 3807 crore. Electricity generation, as per the billing cycle, in 2010-11 has been 26469 MUs as against 18798 MUs in 2009-10 showing an increase of 41%. The revenue realization has been maintained at a high level of 99%.

Other Income

The Company's other income in the FY 2010-11 was ₹ 882 crore as compared to ₹ 672 crore in the FY 2009-10 indicating an increase of 31%. The average yield on investment is around 8.80% during the year under report.

Total Expenditure

Total expenditure of the Company consisting of Operating & Maintenance Expenditure, Interest and Depreciation was ₹ 5210 crore as against ₹ 3791 crore in the previous year registering an increase of 37%.

Expenditure related to operations

The expenditure incurred on fuel & heavy water, operation & maintenance, employees' remuneration, administration and other expenses for the FY 2010-11 was ₹ 3680 crore which is around 40% more than the expenditure of ₹ 2629 crore incurred during the previous year. The fuel charges and heavy water charges were ₹ 1670 crore and ₹ 622 crore as against ₹ 972 crore and ₹ 446 crore for the previous year. This increase is mainly on account of increase in level of operations. It is noteworthy that the year 2010-11 recorded the highest electricity generation since the formation of the Company.

The total income for 2010-11 is **₹ 6898** crore as against **₹ 4479 crore** in 2009-10 - an increase of **54%**

Income from sale of electricity for 2010-11 was **₹ 6016 crore**, an increase of **58%** over **₹ 3807 crore** in 2009-10

Interest Charges

Interest charges (excluding Interest During Construction period) consist of interest amount on long term borrowings. The average interest cost is around 7.74% for the year 2010-11. Interest charges stood at ₹ 662 crore for the FY 2010-11 as compared to ₹ 441 crore in the previous year.

Depreciation

As per the accounting policy of the Company, depreciation is provided on straight line method on the capitalized cost at the rates specified in Schedule XIV of the Companies Act, 1956 except for computers and peripherals where depreciation is charged @ 19% and for software where depreciation is charged @ 20%. Cost of computers and peripherals are depreciated on straight line method over a period of 5 years to the extent of 95% and software to the extent of cent percent. With the capitalization of Unit-4 at Kaiga, Renovation & Modernization actions in NAPS-2 and KAPS-1 namely EMCCR, depreciation was higher at ₹ 868 crore in FY 2010-11 compared to ₹ 721 crore in the previous year registering an increase of 20%.

Profit Before Tax, Provisions and Prior Period Adjustments

The profit of the Company before tax, provisions and prior period adjustments for the FY 2010-11 was ₹ 1688 crore as compared to ₹ 688 crore in the previous year.

Prior Period Adjustments

Prior period items are incomes or expenses which arise in the current period as a result of 'errors' or 'omissions' in the financial statements prepared in earlier years. Effects of changes in estimates are not treated as omission or error. For the FY 2010-11, prior period adjustments amount to ₹ 1 crore.

Provision for Taxation

An amount of ₹ 311 crore has been provided towards current Income-tax under Minimum Alternate Tax provisions and Wealth Tax.

Profit after Tax

Inspite of the factors affecting operational revenue, the Company has earned a Profit After Tax of ₹ 1376 crore during FY 2010-11 as compared to ₹ 416 crore in FY 2009-10. The surge in profits is due to higher capacity utilization resulting in increased generation of electricity.

Financial condition

(Balance Sheet Analysis)

Networth

The networth of the Company at the end of FY 2010-11 increased to ₹ 22162 crore from ₹ 21268 crore in the previous year, registering an increase of 4% mainly due to retained earnings. Correspondingly, the Book Value per share also increased to ₹ 2184 from ₹ 2096.

Loan Funds

The loans as on 31st March 2011 were ₹ 17909 crore in comparison to ₹ 15462 crore as on 31st March 2010, registering a growth of 16%. A summary of the loans outstanding is given below:

(₹ in crore)

Details	As at 31st March 2011	As at 31st March 2010
Secured Loans		
Bonds	2854	3001
Term Loans from Banks	9186	6186
Sub-Total	12040	9187
Unsecured Loans		
Loans from Government of India	5870	6275
SUB-TOTAL	5870	6275
TOTAL	17910	15462

As per the plan of allocation approved by the Government of India, the Company raised a sum of ₹ 3000 crore during the year for its various projects viz. RAPS-7&8, KKNPP-1&2 and KAPP-3&4 by availing term loans from Public Sector Banks as mentioned under:

(₹ in crore)

State Bank of India	1250
Bank of India	1500
Dena Bank	250

The Company has redeemed Bonds amounting to ₹ 148 crore during the year.

During the year 2010-11, the Company availed ₹ 34 crore of Unsecured Loan (Russian Credit) from Government of India. The Company has repaid ₹ 450 crore to the Department of Atomic Energy, Government of India, as per the Inter Governmental Agreement towards the loan (Russian Credit) availed from the former. Balance of Unsecured Loan (including Russian Credit) has been reduced by ₹ 405 crore during the year 2010-11. Reduction

is due to the repayment to DAE and reduction in Foreign Exchange Rate Variation. The final balance of Unsecured Loan as on 31st March 2011 is ₹ 5870 crore.

DAE loan (Russian Credit) represents funds provided by DAE to deposit with Controller of Aid Accounts & Audit (CAA&A) for repayment of credit extended by Government of Russian Federation to Government of India, after repayment in terms of various contracts entered into with M/s. Atomstroyexport to set up two units of 1000 MW each at Kudankulam, with an understanding that exchange fluctuation on repayment of the credit by Government of India shall be on account of the Corporation.

Fixed Assets

The Company's gross block increased from ₹ 19231 crore in FY 2009-10 to ₹ 21337 crore representing a growth of 11%. This is mainly on account of capitalization of Kaiga Unit-4 and Renovation & Modernization activities carried out in NAPS-2 and KAPS-1.

Investments

The investments consist mainly of power bonds, equity participation in joint venture viz. M/s. L&T Special Steels & Heavy Forgings Pvt. Ltd. to produce special steels and ultra heavy forgings and Bharatiya Nabhikiya Vidyut Nigam Ltd., a Company under the same management, NPCIL Employees' Group Leave Encashment Scheme with LIC of India, SBI Life Insurance Co. Ltd. and NPCIL Employees' Gratuity Schemes with LIC of India and SBI Life Insurance Co. Ltd.

During the year, the Company has not made any non-trade investments.

Total investments stood at ₹ 2290 crore as on 31st March 2011 as against ₹ 2413 crore as on 31st March 2010.

Working Capital

Current Assets after netting off current liability i.e. net working capital stood at ₹ 9632 crore as on 31st March 2011 as against ₹ 7084 crore as on 31st March 2010.

Credit Rating

The Company's Bonds have been accredited with a 'AAA' rating indicating highest safety from both CRISIL and CARE since FY 2001-02 onwards.

Risk Management

Enterprise Risk Management Policy has been formed for identification of key risk areas and formulate appropriate risk mitigation plans for taking corrective action in a time bound manner.

Internal Control System and their adequacy

The Company has adequate internal control system commensurate with the nature and size of business which meets the objectives of efficient use and safeguarding of resources, compliance with statutes, policies and procedures and maintaining accuracy of recording of transaction and reporting the same promptly. The scope of internal audit involves examination and evaluation of the adequacy and effectiveness of the system of internal accounting, system and procedures and other operational areas. Independent firms of Chartered Accountants who are appointed with the approval of the Audit Committee carry out the internal audit. The observations raised out of the audit are subject to periodic review and compliance monitoring by Audit Committee.

Financials at a Glance

The financial performance of NPCIL for the last 10 years along with the key financial ratios is summarized as "Performance at a Glance".

The Profit After Tax was **₹ 1376 crore** in 2010-11 compared to **₹ 416 crore** in 2009-10

The networth at the end of 2010-11 stood at **₹ 22162 crore** increasing **4%** from **₹ 21268 crore** in 2009-10. Book Value per share increased to **₹ 2184** from **₹ 2096**

PERFORMANCE AT A GLANCE

For the Year	2010-11	2009-10	2008-09	2007-08
Sales and Other Income	6898	4,479	3,782	4,266
Total Expenditure	3680	2,629	2,190	1,874
Interest	661	441	489	455
Depreciation	868	721	706	734
Profit for the Year	1689	688	397	1,203
Profit Before Tax	1688	474	481	1,205
Profit After Tax	1376	416	441	1,079
Dividend	413	150	132	324
At the End of Year				
Gross Block	21,337	19,231	16,759	16,595
Net Block	13,658	12,427	10,718	11,221
Total Fixed Assets	29,587	28,539	28,078	25,067
Investments	2,290	2,413	2,733	2,993
Current Assets	13,052	9,333	6,908	7,153
Current Liabilities	3,420	2,249	1,238	1,043
Net Current Assets	9,632	7,084	5,669	6,110
Total Assets	41,894	38,448	36,663	34,269
Inventories	392	389	378	361
Sundry Debtors	1,144	503	507	429
Share Capital	10,145	10,145	10,145	10,145
Reserves	12,017	11,122	10,881	10,595
Networth	22,162	21,268	21,027	20,740
Capital Reserve & Other Funds	1,822	1,718	1,617	1,446
Borrowings	17,909	15,462	14,019	12,083
Total Liabilities	41,894	38,448	36,663	34,269
Total No. of shares (FV-₹1000/-)	101,453,327	101,453,327	101,453,327	101,453,327
Generation (MUs)	26,469	18,798	14,921	16,964
Capacity Factor (%)	71	61	50	54

KEY RATIOS

For the Year	2010-11	2009-10	2008-09	2007-08
Liquidity				
Current Ratio	3.82	4.15	5.58	6.86
Quick Ratio	3.70	3.98	5.27	6.51
Solvency				
Debt to Equity	0.81	0.73	0.67	0.58
Debt to Asset	0.43	0.40	0.38	0.35
Interest Cover	3.05	2.63	1.99	3.61
Profitability				
Return on Sales	20%	9%	12%	25%
Return on Equity	6%	2%	2%	5%
Return on Assets	3%	1%	1%	3%
Gross Profit Margin	47%	41%	42%	56%
Net Profit Margin	34%	25%	23%	39%
Efficiency				
Fixed Asset Turnover	23%	16%	13%	17%
Total Asset Turnover	16%	12%	10%	12%
Debtors Turnover Ratio	6.03	8.90	7.47	9.94
Average Collection Period (days)	61	41	49	37
Earnings per share (FV ₹ 1000/-)	136	44	44	106
Book Value per share (₹)	2185	2096	2073	2044
Dividend per share (₹)	40.70	14.79	13.05	31.89

(₹ in crore)

2006-07	2005-06	2004-05	2003-04	2002-03	2001-02
4,654	4,186	3,967	5,501	4,840	4,620
1,915	1,793	1,563	1,649	2,390	2,298
343	235	279	342	355	414
664	361	283	457	472	496
1,733	1,797	1,843	3,054	1,622	1,412
1,726	1,776	1,838	2,970	1,614	1,662
1,571	1,713	1,705	2,604	1,509	1,549
471	514	342	521	269	102
15,060	12,662	9,197	8,945	8,473	8,223
10,454	8,739	5,673	5,727	5,815	6,039
24,229	21,875	18,410	14,797	11,884	10,205
2,936	3,094	3,023	2,647	15	340
7,389	4,405	5,804	7,189	7,165	4,806
1,358	1,269	1,276	1,363	1,079	888
6,031	3,136	4,528	5,825	6,086	3,918
33,196	28,105	25,960	23,270	17,985	14,463
356	268	216	229	216	229
585	373	496	880	3,203	2,484
10,145	10,145	10,145	9,245	8,032	6,383
9,895	8,867	7,743	6,426	4,410	3,205
20,040	19,012	17,889	15,672	12,442	9,587
1,396	1,313	1,224	1,313	1,305	1,055
11,761	7,780	6,848	6,286	4,238	3,822
33,196	28,105	25,960	23,270	17,985	14,463
101,453,327	101,453,327	101,453,327	89,321,727	76,971,727	58,109,127
18,785	17,354	16,709	17785	19242	19,199
63	74	76	81	90	85

2006-07	2005-06	2004-05	2003-04	2002-03	2001-02
5.44	3.47	4.55	5.27	6.64	5.41
5.18	3.26	4.38	5.10	6.44	5.15
0.59	0.41	0.38	0.40	0.34	0.40
0.35	0.28	0.26	0.27	0.24	0.26
5.08	5.78	5.81	9.62	6.49	5.43
34%	41%	43%	47%	31%	34%
8%	9%	10%	17%	12%	16%
5%	6%	7%	11%	8%	11%
59%	57%	61%	70%	51%	50%
45%	49%	53%	62%	41%	40%
19%	19%	22%	37%	41%	45%
14%	15%	15%	24%	27%	32%
7.95	11.23	7.99	6.25	1.51	1.86
46	32	46	58	242	196
155	169	180	315	227	282
1975	1874	1763	1755	1616	1650
46.45	50.70	36.00	63.00	40.50	18.50

Annexure – C to Directors' Report

CORPORATE GOVERNANCE

Rajasthan Atomic Power Station - 5&6

The management of the Company believes that strong and sound corporate governance is an important instrument of protection of stakeholders and good corporate governance practices would enable it to face the challenges of growth effectively and successfully

1. COMPANY'S PHILOSOPHY ON CORPORATE GOVERNANCE

The NPCIL's business philosophy appreciates the need of upholding the highest standard of corporate governance in its operations. The management of the Company believes that strong and sound corporate governance is an important instrument of protection of stakeholders and good corporate governance practices would enable it to face the challenges of growth effectively and successfully.

2. BOARD OF DIRECTORS

Composition of the Board

The Board comprises of six whole time directors, including Chairman & Managing Director and six Non-Executive Directors as on 31st March 2011 out of which 4 are Independent Directors.

All directors, including non-executive directors, are professionals and have wide experience in their respective fields. A brief resume of all the directors is given in this annual report elsewhere.

The Board functions either as a full Board or through committees constituted by it. The Board of Directors and its committees meet at regular intervals. A table showing present composition of the Board and attendance of the members of the Board at Board meetings held during the year is given below.

YEAR 2010-11

Five meetings of the Board of Directors were held during the year on 7th May 2010, 26th July 2010, 23rd September 2010, 25th November 2010 and 24th February 2011. The maximum time gap between any two consecutive Board Meetings did not exceed three months. The attendance of directors was as follows:

Name of Board Member	Board meetings attended during the year	Attendance at last AGM (27th August 2010)	No. of other Directorships	No. of Committees on which Chairman/ Member apart from NPCIL
Chairman & Managing Director				
Dr. S.K. Jain	Five	Yes	(One) CMD, Bharatiya Nabhikiya Vidyut Nigam Ltd. (BHAVINI)	Nil
Executive Non-Independent Directors (Whole Time Directors)				
Shri S.A. Bhardwaj	Four	Yes	(One) Anushakti Vidhyut Nigam Ltd.	Nil
Shri J.K. Ghai	Five	Yes	(Two) 1. L&T Special Steels and Heavy Forgings Private Ltd. 2. Anushakti Vidhyut Nigam Ltd.	Chairman, Audit Committee of L&T Special Steels and Heavy Forgings Private Ltd.
Shri G. Nageswara Rao	Five	Yes	Nil	Nil
Shri K.C. Purohit	Four	Yes	Nil	Nil
Shri S.B. Agarkar	Five	Yes	Nil	Nil
Non-executive Non-Independent Directors (Government Directors)				
Shri A.P. Joshi	Four	Yes	(One) BHAVINI	Nil

Name of Board Member	Board meetings attended during the year	Attendance at last AGM (27th August 2010)	No. of other Directorships	No. of Committees on which Chairman/ Member apart from NPCIL
Shri V.R. Sadasivam	Four	Yes	(Four) 1. BHAVINI 2. Electronics Corporation of India Ltd. (ECIL) 3. Indian Rare Earths Ltd. (IREL) 4. Uranium Corporation of India Ltd. (UCIL)	(Four) As Member, Audit Committee
Non-executive Independent Directors				
Dr. S. Banerjee (ceased to be Director w.e.f. 19.05.2010)	Nil	Not Applicable	Nil	Nil
Dr. R.K. Sinha (appointed w.e.f. 15.09.2010)	Nil	Not Applicable	(One) BHAVINI	Nil
Shri H.L. Bajaj (ceased to be Director w.e.f. 19.05.2010)	One	Not Applicable	Nil	Nil
Shri Chandan Roy (ceased to be Director w.e.f. 01.08.2010)	One	Not Applicable	(Six) 1. NTPC Ltd. 2. Ratnagiri Gas & Power Pvt. Ltd. 3. NTPC Vidyut Vyapar Nigam Ltd. 4. West Bengal Power Development Corporation Ltd. 5. Nabi Nagar Power Generating Co. Pvt. Ltd. 6. Bhartiya Rail Bijlee Co. Ltd.	(Two) Chairman, Audit Committee of 1. NTPC Vidyut Vyapar Nigam Ltd. 2. Bhartiya Rail Bijlee Co. Ltd.
Dr. Nalini Bhat (appointed w.e.f. 15.07.2010)	Two	Yes	Nil	Nil
Shri V.M. Kaul (appointed w.e.f. 15.07.2010)	Three	Yes	(Two) 1. Power Grid Corporation of India Ltd. 2. Powerlinks Transmission Ltd.	(One) As Member of Audit Committee of Powerlinks Transmission Ltd.

Name of Board Member	Board meetings attended during the year	Attendance at last AGM (27th August 2010)	No. of other Directorships	No. of Committees on which Chairman/ Member apart from NPCIL
Shri T.S. Bhattacharya (ceased to be Director w.e.f. 08.05.2011)	Three	Not attended (being out of country)	(Nine) 1. IDFC Securities Ltd. 2. Speciality Restaurant Ltd. 3. Sayaji Hotels Ltd. 4. Amartex Ltd. 5. Surya Roshani Ltd. 6. Bhutan National Bank 7. AGS Transact Technologies Ltd. 8. Jindal Stainless Ltd. 9. Abhijeet Power Ltd.	(Two) As Chairman of Audit Committee of 1. Jindal Stainless Ltd. 2. Abhijeet Power Ltd. (One) As Member of Audit Committee 1. IDFC Securities Ltd.

Notes:

1. For the purpose of reckoning chairmanship / membership of the Committees, only Audit Committee and the Shareholders' Grievance Committee have been considered.
2. None of the above non-executive directors has any material pecuniary relationship or transactions with the Company, its management, which in the judgment of the Board may affect independence of judgment of the director.
3. None of the Directors are related to each other.
4. All the Directors have made necessary disclosures about their Committee positions they occupy in other companies.

The following two non-executive independent Directors have been appointed on the Board after 31st March 2011:

1. Shri Rakesh Nath, Member (Technical), Appellate Tribunal for Electricity, w.e.f. 26th April 2011.

2. Dr. Arbind Prasad, Senior Adviser (Power & Energy), Planning Commission, w.e.f. 17th June 2011.

Further Shri J.K. Ghai, Director (Finance), NPCIL, who had been appointed as a Whole Time Director since 10th February 2006, ceased to be Director on completion of his term on 31st July 2011.

Shri Umesh Chandra, Sr. Executive Director (Safety, Knowledge Management) is Permanent Invitee to the meetings of Board of Directors.

Shri Sudhinder Thakur, Executive Director was Permanent Invitee for the meetings till 31st December 2010.

The Company has a process to provide the information to the Board as required under Annexure IV of the Guidelines on Corporate Governance for Central Public Sector Enterprises (CPSEs), 2010 (Guidelines) issued by the Department of Public Enterprises (DPE) which was followed.

Compliance of all laws, rules and regulations is ongoing process. The steps would be taken to review the same periodically.

Code of Conduct

The Board of Directors has laid down Code of Conduct for the Board members and Senior Management Personnel of the Company. A copy of the Code is available on the website of the Company.

All the members of the Board and Senior Management Personnel have affirmed compliance of respective Code of Conduct during the financial year ended on 31st March 2011.

The following are the sub-committees of the Board:

1. Board Sub-Committee on Contracts & Purchases.
2. Board Sub-Committee on Resource Mobilisation.
3. Audit Committee.
4. Bonds Allotment / Transfer Committee.
5. Shares Allotment / Transfer Committee.
6. Investors' Grievance Redressal Committee.

3. AUDIT COMMITTEE

Composition

As on 31st March 2011, the Audit Committee consisted of three members, out of which two are Non-Executive Independent Directors. The members of Audit Committee are experienced and have fair knowledge of project finance, accounts and corporate laws. The Director (Finance) and General Manager (F&A) are the Permanent Invitees at the meetings and the Statutory Auditors attend as Special Invitees. The Internal Auditors are also invited, on rotation basis (unit-wise), at Audit Committee meetings for participation in discussions.

Number of meetings held and the dates on which they were held

Four meetings of the Audit Committee were held during the year 2010-11. The meetings were held on 5th May 2010, 9th July 2010, 11th November 2010 and 10th March 2011. The maximum time gap between any two audit committee meetings did not exceed four months except for the meeting held on 11th November 2010 for ensuring the presence of members. The composition of the Audit Committee is given below:

Name of the Member	Category	Number of meetings attended
Shri T.S. Bhattacharya, Former MD of SBI (ceased to be member on 7th May 2011)	Chairman	Three
Shri V.M. Kaul, Director (Personnel), PGCIL (adopted as member w.e.f. 23rd September 2010)	Member	Two
Shri V.R. Sadasivam, Jt. Secretary (Finance), DAE	Member	Four
Shri H.L. Bajaj, Member (Tech.), Appellate Tribunal for Electricity (was nominated as member w.e.f. 26th February 2010 and ceased to be member w.e.f. 19th May 2010)	Member	One
Shri Chandan Roy, Director (Operations), NTPC Ltd. (nominated as Member w.e.f. 9th July 2010 ceased to be Member on 1st August 2010)	Member	-

Quorum consisted of only one Independent Director as against two in two Audit Committee Meetings held on 5th May 2010 and 9th July 2010.

Shri Rakesh Nath has been adopted as Member and Chairman of the Audit Committee on 10th May 2011.

The following are the Permanent Invitees to the meetings of the Audit Committee:

1. Shri J.K. Ghai, Director (Finance), NPCIL
2. Shri V. Nagabhushana Rao, GM (F&A), NPCIL

Chairman of the Audit Committee was not present at the last Annual General Meeting held on 27th August 2010, being out of country. However, Shri V.R. Sadasivam, Member, Audit Committee represented Chairman at the AGM.

Role of Audit Committee

The terms of reference of the Committee are spelt out in Section 292A of the Companies Act, 1956 and Guidelines on Corporate Governance for CPSEs 2010.

The role of the audit committee shall include the following:

1. Oversight of the Company's financial reporting process and the disclosure of its financial information to ensure that the financial statement is correct, sufficient and credible.

2. Recommending the fixation of audit fee of external auditors and also approval for payment for any other services.

3. Reviewing, with the management, the annual financial statements before submission to the Board for approval, with particular reference to:
   a. Matters required to be included in the Director's Responsibility Statement to be included in the Board's report in terms of clause (2AA) of section 217 of the Companies Act, 1956.
   b. Changes, if any, in accounting policies and practices and reasons for the same.
   c. Major accounting entries involving estimates based on the exercise of judgment by management.
   d. Significant adjustments made in the financial statements arising out of audit findings.
   e. Compliance with listing and other legal requirements relating to financial statements.
   f. Disclosure of any related party transactions
   g. Qualifications in the draft audit report.

4. Reviewing, with the management, the financial statements before submission to the Board for approval.

5. Reviewing, with the management, performance of internal auditors, adequacy of the internal control systems.

6. Reviewing the adequacy of internal audit function, if any, including the structure of the internal audit department, staffing and seniority of the official heading the department, reporting structure, coverage and frequency of internal audit.

7. Discussion with internal auditors and / or statutory auditors any significant findings and any follow up thereon.

8. Reviewing the findings of any internal investigations by the internal auditors / auditors / agencies into matters where there is suspected fraud or irregularity or a failure of internal control systems of a material nature and reporting the matter to the Board.

9. Discussion with statutory auditors before the audit commences, about the nature and scope of audit as well as post-audit discussion to ascertain any area of concern.

10. Looking into the reasons for substantial defaults in the payment to the depositors, debenture holders, shareholders (in case of non payment of declared dividends) and creditors.

11. Reviewing the follow up action on the audit observations of the C&AG audit.

12. Reviewing the functioning of whistle blower mechanism.

13. To review the follow up action taken on the recommendations of Committee on Public Undertakings (COPU) of the Parliament.

14. Provide an open avenue of communication between the independent auditor, internal auditor and the Board of Directors.

15. Review all related party transactions in the Company. For this purpose, the Audit Committee may designate a member who shall be responsible for reviewing related party transactions.

Explanation: The term "related party transactions" shall have the same meaning as contained in the Accounting Standard 18, issued by the Institute of Chartered Accountants of India.

16. Review with the independent auditor the coordination of audit efforts to assure completeness of coverage, reduction of redundant efforts, and the effective use of all audit resources.

17. Consider and review the following with the independent auditor and the management:
    - The adequacy of internal controls including computerized information system controls and security, and
    - Related findings and recommendations of the independent auditor and internal auditor, together with the management responses.

18. Consider and review the following with the management, internal auditor and the independent auditor:
    - Significant findings during the year, including the status of previous audit recommendations
    - Any difficulties encountered during audit work including any restrictions on the scope of activities or access to required information,

Explanation: If the Company has set up an Audit Committee pursuant to provision of the Companies Act, the said Audit Committee shall have such additional functions/features as contained in these guidelines.

19. Carrying out any other function as is mentioned in the terms of reference of the Audit Committee.

Powers of Audit Committee

(i) To investigate any activity within its terms of reference.

(ii) To seek information on and from any employee.

(iii) To obtain outside legal or other professional advice, subject to the approval of the Board of Directors.

(iv) To secure attendance of outsiders with relevant expertise, if it considers necessary.

(v) To protect whistle blowers.

The Company Secretary acts as the Secretary of the Audit Committee.

4. REMUNERATION COMMITTEE

The Company follows Government of India pattern of pay scales and Dearness Allowance for its employees. The perks available to the employees are broadly based on the pattern followed by the Government of India for its employees or as available to the employees of other PSEs of the Government of India. The same principle is applicable in case of remuneration and perquisites of whole time directors. Non-official part-time independent Directors are paid only sitting fees at the rate approved by the Government for attending the Board Meetings as well as Sub-Committee Meetings. Shri T.S. Bhattacharya, Director was the only eligible director for sitting fees during the year as aforesaid. Hence, no remuneration committee has been constituted. However, the formation of Remuneration Committee under the guidelines on corporate governance will be reviewed.

Details of remuneration paid to the Chairman & Managing Director and other Directors are given below:

(In Rupees)

Sl. No.	Name of Director	All elements of remuneration of the Directors i.e. Salary, Bonus, LTC, Employers' PF Contribution, Pension Contribution, wherever applicable, benefits, etc.
1.	Dr. S.K. Jain, CMD	1908100
2.	Shri S.A. Bhardwaj	1938367
3.	Shri J.K. Ghai	1876149
4.	Shri G. Nageswara Rao	1900055
5.	Shri K.C. Purohit	1906709
6.	Shri S.B. Agarkar	2138133
	TOTAL	11667513

In the case of Shri T.S. Bhattacharya, sitting fees of ₹ 5000/- paid for attending each Meeting of Board and Board Sub-Committee. Shri Bhattacharya has attended 3 meetings of the Board and 3 meetings of Audit Committee.

5. BOARD SUB-COMMITTEE ON CONTRACTS & PURCHASES

This Sub-Committee is entrusted with the responsibility of implementing the decisions of the Board relating to Contracts & Purchases for the Company. The Committee is having powers of financial sanction upto ₹ 100 crore. The Committee is also having powers to approve contract on public/ limited tender basis upto ₹ 300 crore and for single tender/nomination, the limit is ₹ 100 crore. The Committee meets from time to time depending upon the requirements of the business.

Composition of the Committee

1.	Dr. S.K. Jain, CMD	Chairman
2.	Shri S.A. Bhardwaj, Director (Technical)	Member
3.	Shri J.K. Ghai, Director (Finance)	Member
4.	Shri A.P. Joshi, Additional Secretary, DAE	Member
5.	Shri V.R. Sadasivam, Joint Secretary (Finance), DAE	Member

Shri A. Sridharan, Executive Director (C&MM) and Shri V. Nagabhushana Rao, General Manger (F&A) are permanent invitees to the Committee.

6. BOARD SUB-COMMITTEE ON RESOURCE MOBILISATION

This Sub-Committee considers the requirements of funds raising from the market for the Ongoing Projects of the Company as per the approval received from the Government of India and decides various modalities for the same. This Committee has also been assigned the additional responsibility of considering disposal of Bonds in the market received from the SEBs against the outstanding dues in accordance with the recommendations of the Ahluwalia Committee.

Composition

1.	Dr. S.K. Jain, CMD	Chairman
2.	Shri J.K. Ghai, Director (Finance)	Member
3.	Shri A.P. Joshi, Additional Secretary, DAE	Member
4.	Shri V.R. Sadasivam, Joint Secretary (Finance), DAE	Member

Shri V. Nagabhushana Rao, GM(F&A) is Permanent Invitee to the Committee.

7. SHARES ALLOTMENT/TRANSFER COMMITTEE

This Committee considers the allotment and transfer of shares and issuance of share certificates and other matters incidental thereto.

Composition

1.	Dr. S.K. Jain, CMD, NPCIL	Chairman
2.	Shri J.K. Ghai, Director (Finance), NPCIL	Member
3.	Shri A.P. Joshi, Additional Secretary, DAE	Member
4.	Shri V.R. Sadasivam, Joint Secretary (Finance), DAE	Member

8. BONDS ALLOTMENT/TRANSFER COMMITTEE

The Committee considers the allotment of Bonds to the applicants and subsequent transfers of holdings, issuance of bond certificates and other matters incidental thereto.

Composition

1.	Dr. S.K. Jain, CMD	Chairman
2.	Shri J.K. Ghai, Director (Finance)	Member

9. INVESTORS' GRIEVANCE REDRESSAL COMMITTEE

Composition

1.	Shri A.P. Joshi, Additional Secretary, DAE	Chairman
2.	Shri J.K. Ghai, Director (Finance)	Member

The Committee is vested with the following powers:

a) To look into/monitor investors' complaints like transfer of bonds/debentures/securities, non-receipt of interest, redemption proceeds, etc.

b) To investigate any activity within its terms of reference.

c) To seek information from any employee.

d) To obtain outside legal or other professional advice.

e) To secure attendance of outsiders with relevant expertise, if it considers necessary.

f) To advise on the matters relating to rendering of services to the Investors.

The Company Secretary acts as the Secretary to the Committee and also as Compliance Officer to liaise with the regulatory authorities.

One meeting of the Committee was held during the year on 28th March 2011. The following were present at the meeting:

1.	Shri A.P. Joshi	Chairman
2.	Shri J.K. Ghai	Member

Name, address, telephone no. of Compliance Officer:

Shri Srikar R. Pai, Company Secretary,
16th Floor, Centre-1,
World Trade Centre,
Cuffe Parade, Mumbai-400 005.

Tel. Nos.(O) 022-22180281 (Fax) 022-2218 5464.

Subsidiary Company

As on date, the Company has two subsidiary companies viz.

1. ANUSHAKTI VIDHYUT NIGAM LIMITED (incorporated on 27th January 2011)

2. NPCIL - INDIAN OIL NUCLEAR ENERGY CORPORATION LIMITED (incorporated on 6th April 2011)

None of the above subsidiaries are covered within the criteria laid down in the Guidelines.

Details of the bondholders' grievances received during the year:

Queries received from the bondholders were replied to promptly. As on 31st March 2011, no complaints were pending.

10. DISCLOSURES

1. During the year, there were no transactions of material nature with the directors or their relatives or the management that had potential conflict with the interest of the Company.

2. A statement of related party transactions during the year as per AS18 is given in notes forming part of the Annual Accounts of the Company for the year 2010-11. *As such no statement was placed before the Audit Committee.*

3. There were no instances of non-compliance on any matter related to any guidelines issued by the Government during the last three years.

4. The Company has complied with the 'Corporate Governance Guidelines for CPSEs' issued by the Department of Public Enterprises as directed by the DAE and quarterly compliance reports have been regularly submitted to the DAE.

5. In NPCIL, risk management is a part of management system based on a Safety conscious approach. A policy on Risk Management has been approved by Board of Directors in its meeting held on 28th November 2009 and is being implemented in accordance with the Guidelines on Corporate Governance.

6. The Company being PSU, Central Vigilance Commission Guidelines are applicable, which provide adequate safeguard against victimization of employees. No person has been denied access to the Audit Committee.

7. CEO / CFO Certificate was placed before the Board at its meeting held on 9th May 2011 and is being provided in the Annual Report.

11. MEANS OF COMMUNICATION

1. Half yearly financial results of the Company for the half year ended on 30th September 2010 were published in all editions of The Economics Times (English) and financial results for the year ended 31st March 2011 were published in all editions of The Economics Times (English) and The Navbharat Times (Hindi) Delhi edition.

2. The Company's website (http://www.npcil.nic.in) provides a variety of information on the Company like profile, organisation, plant performance statistics, financial performance, FAQ, reference articles, etc. The hit-rate of the web site is significant.

3. The Company participates in important exhibitions as an exercise towards public awareness on nuclear power and informative booklets/pamphlets are distributed to the visitors.

4. Matters of interest to employees are circulated internally in the form of Notices, Office Orders and Instructions.

5. Management's Discussion & Analysis forms part of the Annual Report.

12. GENERAL SHAREHOLDERS INFORMATION

The total share holding of the Company is by the Government of India through its nominees.

General Body Meetings

The last three Annual General Meetings were held as under:

Financial year	Date & Time	Venue
2009-10	27th August 2010 2.00 p.m.	Registered Office, 16th Floor, Centre-1, World Trade Centre, Cuffe Parade, Mumbai-400 005.
2008-09	12th August 2009 2.00 p.m.	same as above
2007-08	22nd August 2008 2.00 p.m.	same as above

Special resolutions were passed in the Annual General Meeting held on 22nd August 2008 for alteration of the Articles of Association.

Postal Ballot

At the ensuing Annual General Meeting, there is no resolution proposed to be passed by Postal Ballot. However, the Company will extend the facility of voting by postal ballot, as and when decisions of shareholders/investors will be sought (on matters of critical nature and notified by the Government of India).

Annual General Meeting

24th Annual General Meeting for the financial year 2010-11 will be held on 7th September 2011 at the Registered Office of the Company in Mumbai.

Market Price Data

The shares of the Company are not listed on any Stock Exchange. However, bonds issued by the Company are listed with the National Stock Exchange of India since December 1996. The Bonds are traded on the Wholesale Debt Market Segment of the NSE. Trading of the bonds does occasionally take place, however, market value of the bonds does not fluctuate much; therefore, information relating to market price movements of bonds, being of no significance, is not given.

FINANCIAL CALENDAR

From April 2011 to March 2012

Key Financial reporting dates for the financial year:

- Financial Results for the half year ending 30th September 2011 will be published on or before 31st October 2011;
- Financial Results for the year ending 31st March 2012 will be published on or before 30th May 2012.

The Financial Results will be simultaneously hosted on the website (www.npcil.nic.in) of the Company.

Since 100% shares are owned by the Government of India, information regarding date of payment of Dividend and book closure is not given here.

Distribution of Bonds Holding

The bonds are issued by private placement. The bonds are mostly held by the Banks, Financial Institutions and Employees Gratuity / Provident / Death Relief Funds of various organisations.

Dematerialisation

The Company has entered into agreements with the National Securities Depository Ltd. (NSDL) and Central Depository Services Ltd. (CDSL) for dematerialisation facility. All bonds issued so far are admitted to depository systems of the NSDL and CDSL.

Registrars and Transfer Agent appointed for servicing of the Bonds issued by the Company

TSR Darashaw Limited,
6-10, Haji Moosa Patravala Industrial Estate,
20, Dr. E. Moses Road, Mahalaxmi,
Mumbai - 400 011.

Telephone No. 022-66568484,

Fax 022-66568494

Email: csg-unit@tsrdarashaw.com

Plant Locations:

The details of the plant locations of the Company are available elsewhere in the report.

Address for Correspondence

1. **Registered Office**

   16th Floor, Centre-1,
   World Trade Centre, Cuffe Parade, Colaba,
   Mumbai - 400 005.

2. **Corporate Office**

   Nabhikiya Urja Bhavan, Anushaktinagar,
   Mumbai - 400 094.

Based on the affirmation received from Board Members and Senior Management Personnel, declaration regarding compliance of Code of Conduct made by Chairman & Managing Director is given below:

All the members of the Board and Senior Management Personnel have affirmed compliance of Code of Conduct for the Financial Year ended on 31st March 2011.

(S.K. Jain)
Chairman & Managing Director

Annexure – D to Directors' Report

CERTIFICATE OF THE PRACTISING COMPANY SECRETARY ON CORPORATE GOVERNANCE

To

The Members of

Nuclear Power Corporation of India Limited
World Trade Centre
Mumbai – 400 005.

We have examined the compliance of the conditions of corporate governance by Nuclear Power Corporation of India Limited, for the year ended on 31st March 2011, as stipulated in the guidelines on Corporate Governance for Central Public Sector Enterprises, 2010, which were forwarded by the Department of Atomic Energy (DAE), the Administrative Ministry of NPCIL, for compliance with the instructions contained therein.

The Corporate Governance requirements specified in the said guidelines on Corporate Governance for Central Public Sector Enterprises are mandatory. The compliance of the conditions of Corporate Governance is the responsibility of the management. Our examination was limited to a review of the procedures and implementation thereof, adopted by the Company for ensuring the compliance with the conditions of the Corporate Governance. It is neither an audit nor an expression of opinion on the financial statements of the Company.

In our opinion and to the best of our information and according to the explanation given to us and the representations made by the management, we certify that the Company has, subject to the statements made in the report in italics, generally complied with the conditions of Corporate Governance to the extent possible as stipulated in the said guidelines on Corporate Governance for Central Public Sector Enterprises, 2010.

We further state that such compliance is neither an assurance as to the future viability of the Company nor the efficiency or effectiveness with which the management has conducted the affairs of the Company.

For Parikh & Associates
Practising Company Secretaries

Place: Mumbai
Date : 6th August 2011

P. N. Parikh
FCS: 327 CP: 1228

Annexure – E to Directors' Report

MANAGEMENT REPLY TO THE STATUTORY AUDITORS' REPORT ON THE ANNUAL ACCOUNTS FOR THE YEAR 2010-11

Statutory Auditors' observations	Clarification by the Management
Balances in respect of Department of Atomic Energy (DAE) and its undertaking, Loan from DAE- Govt. of India (Russian Credit) and some other parties at certain units/offices are subject to confirmation, reconciliation and consequential adjustments thereof.	With DAE, reconciliation of DDR heads and settlement thereof is done on monthly basis. Periodical reconciliation for fuel and heavy water is done with DAE. Letters have also been issued to obtain the balance confirmation in respect of balances with other public bodies.

CEO/CFO CERTIFICATION

It is certified that:

(a) We have reviewed financial statements and the cash flow statement for the year ended 31st March 2011 and that to the best of our knowledge and belief:

  (i) these statements do not contain any materially untrue statement or omit any material fact or statements that might be misleading;

  (ii) these statements together present a true and fair view of the Company's affairs and are in compliance with existing accounting standards, applicable laws and regulations

(b) There are to the best of our knowledge and belief, no transactions entered into by the Company during the year which are fraudulent, illegal or violative of the Company's code of conduct.

(c) We accept responsibility for establishing and maintaining internal controls and that we have evaluated the effectiveness of the internal control system of the Company and we have disclosed to the auditors and the Audit Committee, deficiencies in the design or operation of internal controls, if any, of which we are aware and the steps we have taken or propose to take to rectify these deficiencies.

(d) We have indicated to the auditors and the Audit Committee

  (i) significant changes in internal control during the year;

  (ii) significant changes in accounting policies during the year and that the same have been disclosed in the notes to the financial statements; and

  (iii) instances of significant deviations in the Company's internal control system.

For and on behalf of
Nuclear Power Corporation of India Ltd.

Place: Mumbai
Date : 9th May 2011

(J.K. Ghai)
Director (Finance)

(S.K. Jain)
Chairman & Managing Director

AUDITORS' REPORT

To The Members of

NUCLEAR POWER CORPORATION OF INDIA LIMITED

1. We have audited the attached Balance Sheet of Nuclear Power Corporation of India Limited (herein after referred to as "Corporation") as at 31st March 2011, the Profit & Loss Account and also the Cash Flow Statement of the Corporation for the year ended on that date annexed thereto, in which, are incorporated the accounts of Power Stations, Projects and offices audited by us and also by the Branch Auditors specifically appointed by the Comptroller & Auditor General of India and whose reports have been considered in preparation of this report. These financial statements are the responsibility of the Corporation's Management. Our responsibility is to express an opinion on these financial statements based on our audit.

2. Except in the matter stated in paragraph 7(a) below, we conducted our audit in accordance with Auditing Standards generally accepted in India. Those Standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the Management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

3. The Corporation is also governed by The Atomic Energy Act, 1962, the provisions of said Act have prevailed wherever they have been inconsistent with the provisions of the Companies Act, 1956.

4. As required by the Companies (Auditor's Report) order, 2003 (as amended by Notification No. GSR 766(E) dated 25.11.2004) issued by the Government of India in terms of Sub-Section (4A) of Section 227 of the Companies Act, 1956 (hereinafter referred to as 'Order') and on the basis of such checks as we considered appropriate and according to information and explanations given to us, we enclose in the Annexure, a statement on the matters specified in paragraph 4 and 5 of the said order.

5. Further to our comments in Annexure referred to in paragraph 4 above, we report that:

   a) As mentioned in Note 2.39 and 2.40 of Schedule-16, the information as required by para 4D (a) and para 4D (c) of Part ll of Schedule Vl to the Companies Act, 1956 has not been disclosed being confidential in nature.

   b) In view of technical reasons, we have relied on the Management's representation / Technical Staff certification affirming future economic benefit, serviceable and good condition in respect of Capital goods & Stores and Non-Moving/Slow Moving Stores & Spares.

   c) Balances in respect of Department of Atomic Energy (DAE) and its undertakings, Loan from DAE – Government of India (Russian Credit) and some other parties at certain units/offices are subject to confirmation, reconciliation and consequential adjustments thereof.

6. Without qualifying our report, attention is drawn to Note No. 2.13 of Schedule 16 that the Department of Atomic Energy (DAE) has issued revised tariff norms for determining tariff for sale of electricity by Atomic Power Stations to the Electricity Undertakings, vide notification no. 1./2(20)/2005-Power/Vol-III/11689 dated 8th December 2010. The revised tariff is due to be effective from 1st July 2010 for all atomic power stations. Pending notification under the revised tariff norms, the Corporation has accounted for the sales revenue as per existing practice.

7. Further to above, we report that:

   a) We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our audit; except information and details in respect of usage, expenditure and dues pertaining to Heavy water and Fuel Charges, which as explained to us being sensitive and confidential in nature, are not made available for verification, due to secrecy attached as per the Atomic Energy Act, 1962. Accordingly we are unable to express our opinion on the same.

   b) In our opinion, proper books of accounts as required by the law have been kept by the Corporation so far as appears from our examination of such books and proper returns adequate for the purpose of our audit have been received from power stations and projects not visited by us. The Branch Auditor's reports have been forwarded to us and have been appropriately dealt with in framing this report.

   c) The Balance Sheet, Profit and Loss Account and the Cash Flow Statement dealt with by this report are in agreement with the books of accounts and the audited returns received from the power stations and projects.

   d) In our opinion, the Balance Sheet, Profit and Loss Account and Cash Flow Statement dealt with by this report comply with the Accounting Standards referred to in sub-section (3C) of Section 211 of the Companies Act, 1956.

e) Being a Government Company, pursuant to Notification No. G.S.R. 829 (E) dated 21.10.2003 issued by the Department of Company Affairs, Government of India, provisions of clause (g) of sub section (1) of Section 274 of the Companies Act, 1956, are not applicable to the corporation.

f) Subject to matters contained in paragraph 5, 7(a) above and consequential impact of paragraph 5(c) on the value of Assets, Liabilities, the quantum of income and expenditure and their effect on the profit for the year (which is not ascertainable), in our opinion and to the best of information and according to explanations given to us, the said accounts read together with Significant Accounting Policies and Notes on Accounts in Schedule-16, give the information as required by the Companies Act, 1956, in the manner so required and give a true and fair view in conformity with Accounting Principles generally accepted in India:

   i. in the case of Balance Sheet, of the state of affairs of the corporation as at 31st March 2011;

   ii. in the case of Profit and Loss account, of the Profit of the corporation for the year ended on that date; and

   iii. in the case of Cash Flow Statement, of the Cash Flows of the corporation for the year ended on that date.

For KALANI & COMPANY
Chartered Accountants
FRN-000722C

(VIKAS GUPTA)
Partner
M.No. 077076

Place: Mumbai
Dated: 10th May 2011

ANNEXURE TO THE AUDITORS' REPORT

Statement referred to in paragraph (4) of our report of even date on the Accounts of the Nuclear Power Corporation of India Limited for the year ended 31st March 2011

(i) (a) The Corporation has generally maintained proper records showing full particulars including quantitative details and situation of fixed assets.

(b) All the fixed assets have not been physically verified by the management during the year but there is a regular program of verification which, in our opinion, is reasonable having regard to the size of the Corporation and nature of its assets. As informed to us no material discrepancies have been reported on such physical verification.

(c) During the year, the Corporation has not disposed off substantial part of its fixed assets, hence the going concern status of the corporation is not affected.

(ii) (a) The inventory has been physically verified by the management at reasonable intervals. Necessary certificates have been obtained by the corporation in respect of material lying with the third parties.

(b) The procedures for physical verification of inventories followed by the management are reasonable and adequate in relation to the size of the Corporation and the nature of its business.

(c) The Corporation is maintaining proper records of inventory. No material discrepancies were reported to be noticed on verification between physical stocks and book records at various units of the Corporation.

(iii) The Corporation has not granted or taken any loans secured or unsecured to/from companies, firms or other parties covered in the register maintained u/s 301 of the Companies Act, 1956. Accordingly provisions of clause 4(iii) (a) to (g) of the Order are not applicable to the Corporation.

(iv) In our opinion and according to the information and explanations given, there are adequate internal control systems commensurate with the size of the Corporation and nature of its business for the purchase of inventories, fixed assets, equipment and other assets and with regard to sale of electricity and rendering of services. Further on the basis of examination of books and records of the Corporation and according to the information and explanations given to us, neither we have observed nor reported by the branch auditors for any continuing failure to correct major weaknesses in the Internal controls systems.

(v) (a) As informed by the management, there are no contracts and arrangements referred to in Section 301 of the Companies Act, 1956 that needs to be entered into the register required to be maintained under the said Section 301.

(b) In view of the clause (v) (a) above, clause (v) (b) is not applicable.

(vi) In our opinion and according to the information and explanations given to us, the Corporation has not accepted any deposits in terms of Section 58A and 58AA or any other relevant provisions of the Companies Act, 1956. According to information and explanations given to us, no order has been passed by the Company Law Board or The National Company Law Tribunal or Reserve Bank of India or any Court or any other Tribunal.

(vii) In our opinion, the Corporation has an Internal Audit system commensurate with its size and nature of its business.

(viii) The Central Government has prescribed the maintenance of cost records by the Corporation under clause (d) of sub-section (1) of Section 209 of the Companies Act, 1956 and prima facie the prescribed accounts and records have been made and maintained by the units of the Corporation.

(ix) (a) The Corporation is generally regular in depositing with appropriate authorities the undisputed Statutory dues including Provident Fund, Investor Education and Protection Fund, Income Tax, Sales tax, Customs duty, Wealth tax, Excise duty, Cess, Service Tax and other statutory dues applicable to it.

Provident Fund dues in respect of employees on deputation from Department of Atomic Energy (DAE), Government of India (GOI) are credited to the DAE's account in the books of the Corporation and intimated to DAE. As informed, Provision of Employees State Insurance Act, 1948 are not applicable to the Corporation.

According to the information and explanations given to us, no undisputed amounts payable in respect of aforesaid dues were in arrears as at 31st March 2011, for a period of more than six months from the date they became payable.

(b) The disputed Statutory dues, as detailed below, have not been deposited on account of matters pending before appellate authorities:-

Statute	Nature of Dues/ Matter of Dispute	Amount (₹ crore)	Forums where the dispute is pending
Income Tax Act, 1961	Additions to Returned Income by AO		CIT (Appeals) Mumbai
	AY 2008-09	5.32	
	AY 2007-08	26.28	
	TOTAL	31.60	
Income Tax Act, 1961 (Withholding tax)	A Y 2007-08	50.58	ITAT, Mumbai
	A Y 2006-07	58.55	
	TOTAL	109.13	
Water (Prevention and Control of Pollution) Cess Act, 1977	Water Cess payable to Maharashtra Pollution Control Board	20.79	Cess Appellate Committee of Maharashtra Pollution Control Board
Water (Prevention and Control of Pollution) Cess Act, 1977	Water Cess for the period 1.4.1984 to 12.3.2003 payable to Rajasthan State Pollution Control Board	5.68	Rajasthan High Court

(x) The Corporation has neither accumulated losses as at 31st March 2011 nor has incurred any cash losses during the financial year covered under audit and in the immediately preceding financial year.

(xi) In our opinion and according to the information and explanations given, the Corporation has not defaulted in repayment of dues to a financial institutions, banks or bond holders.

(xii) According to the information and explanations given to us, the Corporation has not granted any loans and advances on the basis of security by way of pledge of shares, debentures and other securities.

(xiii) The Corporation is not a chit fund or a nidhi/mutual benefit/society. Therefore, the provisions of clause 4 (xiii) of the Order are not applicable to the Corporation.

(xiv) According to the information and explanations given to us, the Corporation is not dealing in or trading in the shares, securities, debentures and other investments. Accordingly, the provisions of clause 4(xiv) of the Order are not applicable to the Corporation.

(xv) According to the information and explanations given to us, the Corporation has not given any guarantee for loans taken by others, from Banks or Financial Institutions.

(xvi) In our opinion the term loans have been generally applied for the purpose for which they were raised. However, Term Loan of ₹ 902.82 crore remained unutilized at the end of the year.

(xvii) According to the information and explanations given and based on overall examination of Balance Sheet of the Corporation, we report that funds raised on short-term basis have not been utilized for long-term investment.

(xviii) According to the information and explanations given, the Corporation has not made any preferential allotment of shares during the year.

(xix) Securities have been created by the Corporation in respect of bonds issued.

(xx) The Corporation has not raised any money by way of public issue during the year.

(xxi) According to the information and explanations given, no fraud on or by the Corporation has been noticed or reported during the year.

For KALANI & COMPANY
Chartered Accountants
FRN-000722C

(VIKAS GUPTA)
Partner
M.No. 077076

Place: Mumbai
Dated: 10th May 2011

COMMENTS OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA

UNDER SECTION 619(4) OF THE COMPANIES ACT, 1956 ON THE ACCOUNTS OF NUCLEAR POWER CORPORATION OF INDIA LIMITED FOR THE YEAR ENDED 31 MARCH 2011.

The preparation of financial statements of Nuclear Power Corporation of India Limited for the year ended 31 March 2011 in accordance with the financial reporting framework prescribed under the Companies Act, 1956 is the responsibility of the management of the Company. The statutory auditor appointed by the Comptroller and Auditor General of India under Section 619(2) of the Companies Act, 1956 is responsible for expressing opinion on these financial statements under section 227 of the Companies Act, 1956 based on independent audit in accordance with the auditing and assurance standards prescribed by their professional body the Institute of Chartered Accountants of India. This is stated to have been done by them vide their Audit Report dated 10 May 2011.

I, on behalf of the Comptroller and Auditor General of India, have conducted a supplementary audit under Section 619(3)(b) of the Companies Act, 1956 of the financial statements of Nuclear Power Corporation of India Limited for the year ended 31 March 2011. This supplementary audit has been carried out independently without access to working papers of the Statutory Auditors and is limited to the primarily to the enquiries of the statutory auditor and Company personnel and a selective examination of some of the accounting records. On the basis of my audit nothing significant has come to my knowledge which would give rise to any comment upon or supplement to Statutory Auditors' report under Section619(4) of the Companies Act, 1956

For and on the behalf of the
Comptroller and Auditor General of India

(ALKA R. BHARDWAJ)
Principal Director of Commercial Audit and
Ex-officio Member, Audit Board-1, Mumbai.

Place: Mumbai
Dated: 5th July 2011

BALANCE SHEET
AS AT 31ST MARCH 2011

(₹ in Lac)

		Schedule No.		As at 31st March 2011	As at 31st March 2010
I.	**SOURCES OF FUNDS**				
1.	**Shareholder's Funds**				
	a) Share Capital	1		**1014533.27**	1014533.27
	b) Reserves and Surplus	2		**1383926.38**	1284062.60
2.	**Loan Funds**				
	a) Secured Loans	3	**1203962.00**		918720.00
	b) Unsecured Loans	4	**586977.18**		627470.17
				1790939.18	1546190.17
3.	**Deferred Tax Liability**		**189296.13**		184628.67
	Less : Deferred Tax Recoverable		**189296.13**	**0.00**	184628.67
	TOTAL			**4189398.83**	3844786.04
II.	**APPLICATION OF FUNDS**				
1.	**Fixed Assets**	5			
	a) Gross Block		**2133660.75**		1923057.97
	Less : Depreciation		**767869.31**		680362.92
	Net Block		**1365791.44**		1242695.05
	b) Capital Work in Progress	6	**1592868.88**		1611243.65
				2958660.32	2853938.70
2.	**Investments**	7		**228960.90**	241277.81
3.	**Heavy Water Lease charges Recoverable**				
	(Refer Note no 2.28 of Sch.16)			**38570.24**	41209.94
4.	**Current Assets, Loans and Advances**	8			
	a) Inventories		**39243.89**		38877.10
	b) Sundry Debtors		**114443.71**		50348.96
	c) Cash and Bank Balances		**1006864.07**		721072.20
	d) Other Current Assets		**62646.27**		64137.83
	e) Loans and Advances		**81977.10**		58845.37
			1305175.04		933281.46
	Less: Current Liabilities and Provisions	9			
	a) Liabilities		**255172.37**		180949.71
	b) Provisions		**86795.30**		43972.16
			341967.67		224921.87
	Net Current Assets			**963207.37**	708359.59
	"Significant Accounting Policies & Notes on Accounts"	16			
	Schedules 1 to 16 form integral part of Accounts				
	TOTAL			**4189398.83**	3844786.04

As per our report of even date attached

For KALANI & COMPANY
Chartered Accountants
FRN. 000722C

(VIKAS GUPTA)
Partner
M. No. 077076

Place : Mumbai
Date : 10th May 2011

For and on behalf of
NUCLEAR POWER CORPORATION OF INDIA LIMITED

(SRIKAR R. PAI)	**(J.K. GHAI)**	**(S.K. JAIN)**
Company Secretary	Director (Finance)	Chairman and Managing Director

PROFIT AND LOSS ACCOUNT

FOR THE YEAR ENDED 31ST MARCH 2011

(₹ in Lac)

	Schedule No.			For the year ended 31st March 2011	For the Year ended 31st March 2010
INCOME					
Sales :					
Electrical Energy				601582.89	380681.76
Other Income	10			88168.45	67252.97
TOTAL INCOME				689751.34	447934.73
EXPENDITURE					
Fuel & Heavy Water	11			229109.40	141767.09
Operation and Maintenance Expenses	12			33418.18	30685.69
Employee's Remunaration and Benefits	13			76769.41	66182.99
Administration and Other Expenses	14			28664.54	24270.75
Interest					
On Bonds & Term Loan			82846.86		48578.27
On Foreign Loans			22752.19		21645.01
			105599.05		70223.28
Less : Transferred to Expenditure During Construction Period (Sch. 6A)			39450.10		26120.25
				66148.95	44103.03
Depreciation				86765.18	72107.60
TOTAL EXPENDITURE				520875.66	379117.15
PROFIT FOR THE YEAR				168875.68	68817.58
Prior Period Adjustments (Net)	15			110.70	21411.85
PROFIT BEFORE TAX				168764.98	47405.73
Provision for :					
Income Tax					
Current Tax		30974.00			5706.00
Earlier Year Tax		0.00	30974.00		0.00
					5706.00
Wealth Tax					
Current Tax		105.00			42.00
Earlier Year Tax		53.41	158.41		16.40
					58.40
Provision for Deferred Tax		4667.46			5962.98
Less : Deferred Tax Recoverable		4667.46	0.00	31132.41	5962.98
PROFIT AFTER TAX				137632.57	41641.33
Balance brought forward from previous year				112156.73	98064.65
Balance available for Appropriations				249789.30	139705.98
APPROPRIATIONS :					
Interim Dividend paid				15000.00	15000.00
Tax on Interim Dividend paid				2491.31	2549.25
Proposed Dividend for the year				26290.00	0.00
Tax on Proposed Dividend				4366.44	0.00
Transfer to General Reserve				50000.00	10000.00
Balance carried to Balance Sheet				151641.55	112156.73
"Significant Accounting Policies & Notes on Accounts"	16				
Schedules 1 to 16 form integral part of Accounts					
TOTAL				249789.30	139705.98
EARNING PER SHARE (EPS) - BASIC & DILUTED, (FV of ₹ 1000 each) (Amount in ₹)				135.66	41.04

As per our report of even date attached

For KALANI & COMPANY
Chartered Accountants
FRN. 000722C

(VIKAS GUPTA)
Partner
M. No. 077076

Place : Mumbai
Date : 10th May 2011

For and on behalf of
NUCLEAR POWER CORPORATION OF INDIA LIMITED

(SRIKAR R. PAI)	**(J.K. GHAI)**	**(S.K. JAIN)**
Company Secretary	Director (Finance)	Chairman and Managing Director

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 1	As at 31st March 2011	As at 31st March 2010
SHARE CAPITAL		
Authorised		
150,000,000 Equity Shares of ₹ 1000/- each	1500000.00	1500000.00
Issued,Subscribed and Paid up	1014533.27	1014533.27
101,453,327 Equity Shares of ₹ 1,000/- fully paid		
Of the above, 96,68,611 Equity Shares allotted as fully paid up without payment being received in cash.		
TOTAL	1014533.27	1014533.27

(₹ in Lac)

SCHEDULE - 2		As at 31st March 2011	As at 31st March 2010
RESERVES AND SURPLUS			
Capital Reserve			
Balance as per last Balance Sheet	56031.71		48504.75
Add : Transferred from Renovation & Modernisation Fund	3200.00		6843.49
Add : Transferred from Research & Development Fund	1162.99		820.03
Less : Depreciation on R&D Assets for current year	179.17		136.56
		60215.53	56031.71
General Reserve			
Balance as per last Balance Sheet	920075.00		910075.00
Add : Transferred from Profit and Loss Account	50000.00		10000.00
		970075.00	920075.00
Bond Redemption Reserve			
Balance as per last Balance Sheet	80000.00		80000.00
		80000.00	80000.00
Decommissioning Fund			
Balance as per last Balance Sheet	83076.26		75011.51
Add : Levy for the year	4709.54		3205.87
Add : Reversal of Income Tax	0.00		773.97
Add : Interest on Fund Investments	6430.63		5576.91
	94216.43		84568.26
Less : Payment of Income Tax	2194.00		1492.00
		92022.43	83076.26
Renovation and Modernisation Fund			
Balance as per last Balance Sheet	3191.94		8946.19
Add : Reversal of Income Tax	0.00		231.44
Add : Interest on Fund Investments	245.78		1031.80
	3437.72		10209.43
Less : Transferred to Capital Reserve	3200.00		6843.49
Less : Payment of Income Tax	49.00		174.00
		188.72	3191.94

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 2		As at 31st March 2011	As at 31st March 2010
RESERVES AND SURPLUS (contd)			
Research and Development Fund			
Balance as per last Balance Sheet		29530.96	29276.06
Add : Reversal of Income Tax		0.00	226.26
Add : Interest on Fund Investments		2319.20	1703.74
		31850.16	31206.06
Less : Transferred to Capital Reserve		1162.99	820.03
Less : Payment of Income Tax		457.00	291.00
Less : Transfer to P&L		447.02	564.07
		29783.15	29530.96
Surplus in Profit and Loss Account		151641.55	112156.73
TOTAL		1383926.38	1284062.60

(₹ in Lac)

SCHEDULE - 3				As at 31st March 2011	As at 31st March 2010
SECURED LOANS					
Category	Series	Class	Redemeeable on		
I		**Redeemable Secured Bonds of ₹ 1,00,000/- Each : Non-Cumulative Interest Scheme**			
B	XV	8.25% Tax-free with put & call option at par on 06-01-2008,2009,2010,2011,2012,2013,2014 & 2015 #	06-01-2016	4542.00	6000.00
B	XIX	5.30% Tax-free with put & call option at par on 31-12-2007,2008,2009,2010&2011 #	31-12-2012	2500.00	3300.00
A	XX	6.15% Taxable - ₹ 5500 Lac. Each repayable on 14-08-2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018*	14-8-2018	44000.00	49500.00
C	XXI	5.50% Infrastructure with put & call option at par on 14.08.2010, 2011, 2012 *	14-08-2013	6900.00	13900.00
SUB-TOTAL (I)				57942.00	72700.00
II		**Redeemable Secured Bonds of ₹ 10,00,000/- Each: Non-Cumulative Interest Scheme**			
A	XXII	6.10% Taxable **	15-03-2014	82000.00	82000.00
C	XXIII	5.25% Taxable Infrastructure with Put/Call Option on 23-03-2009,2010, 2011, 2012 & 2013 **	23-03-2014	9500.00	9500.00
B	XXIV	4.75% Tax-free with Put/call Option on 26-03-2009, 2010, 2011,2012, 2013, 2014, 2015, 2016, 2017 & 2018. **	26-03-2019	920.00	920.00
A	XXV	Floating Rate Bonds with +189 bps markup to the Benchmark Interest rate (1 year G-Sec-Semiannual) with annual reset & bullet Redemption at the end of 10th year. ***	16-11-2019	65000.00	65000.00

SCHEDULES annexed to and forming part of Accounts
AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 3				As at 31st March 2011	As at 31st March 2010
SECURED LOANS (contd)					
Category	Series	Class	Redemeeable on		
B	XXVI	8.50% with bullet Redemption at the end of 10th year ***	16-11-2019	**70000.00**	70000.00
SUB-TOTAL (II)				227420.00	227420.00
GRAND TOTAL (I + II)				285362.00	300120.00

Bonds repayble with in one year (Put /Call option) ₹ 29862 Lac (Previous year ₹ 39120 Lac)

(₹ in Lac)

Redemption between April 2010 and March, 2011	
1) Part Redemption on put option of Sr. XV (8.25%) Bonds (06/01/2011)	1458.00
2) Part Redemption of Sr. XIX (5.30%) Bonds (31/12/2010)	800.00
3) Part Redemption of Sr. XX (6.15%) Bonds (14/08/2010)	5500.00
4) Part Redemption of Sr. XXI (5.50%) Bonds (14/08/2010)	7000.00
	14758.00

(₹ in Lac)

SCHEDULE - 3			As at 31st March 2011	As at 31st March 2010
III	**Term Loan From State Bank of India** With bullet repayment after 10 years. Floating Rate -G-Sec . Rate (+) 50Bps at the end of each year secured by negative lien of asset of TAPP-3&4	28.03.2015	**70000.00**	70000.00
IV	**Term Loan From Canara Bank** With bullet repayment after 10 years. Floating Rate -G-Sec . Rate (+) 30Bps, at the end of each year secured by negative lien of asset of TAPP-3&4	28.10.2015	**45600.00**	45600.00
V	**Term Loan From Canara Bank** With bullet repayment after 10 years. Floating Rate -G-Sec . Rate (+) 30Bps at the end of each year secured by negative lien of asset of MAPS	28.10.2015	**13000.00**	13000.00
VI	**Term Loan From State Bank of India and It's associate Banks** With bullet repayment after 05 years. Floating Rate G-Sec. Rate(+) 100 Bps at the end of each year secured by negative lien of asset of Kaiga-1&2 and RAPP-3&4.	26.04.2011	**55000.00**	55000.00
VII	**Term Loan From Canara Bank** With bullet repayment after 5 years.Floating Rate -G-Sec. Rate (+) 125Bps at the end of each year secured by hypothecation of asset of TAPP-3&4 on Paripassu charge basis.	14.07.2011	**55000.00**	55000.00
VIII	**Term Loan From State Bank of India** With bullet repayment after 5 years. Floating Rate -G-Sec. Rate (+) 125Bps at the end of each year secured by negative lien of asset of TAPP-3&4	25.07.2011	**50000.00**	50000.00
IX	**Term Loan From Bank of India** Wiith bullet repayment after 5 years. Floating Rate -G-Sec. Rate (+) 125Bps, at the end of each year secured by negative lien of asset of TAPS-3&4	02.08.2011	**30000.00**	30000.00

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 3			As at 31st March 2011	As at 31st March 2010
SECURED LOANS (contd)				
X	**Term Loan From Bank of Baroda** With bullet repayment after 05 years. Floating Rate G-Sec. Rate(+) 125 Bps at the end of each year secured by negative lien of asset of TAPP-3&4	04.08.2011	**30000.00**	30000.00
XI	**Term Loan From State Bank of Hyderabad** With bullet repayment after 5 years. Floating Rate -G-Sec . Rate (+) 100Bps subject to minimum of 8% at the end of each year secured by negative lien of asset of TAPP-3&4	28.08.2011	**10000.00**	10000.00
XII	**Term Loan From Canara Bank** Wiith bullet repayment after 5 years. Floating Rate -G-Sec. Rate (+) 125Bps at the end of each year secured by hypothecation of asset of Kaiga-3&4 on Paripassue charge basis.	31.01.2012	**25000.00**	25000.00
XIII	**Term Loan From State Bank of India** With bullet repayment after 5 years. Floating Rate -G-Sec. Rate (+) 125Bps, at the end of each year secured by negative lien of asset of Kaiga-3&4	29.11.2011	**25000.00**	25000.00
XIV	**Term Loan From Canara Bank** With bullet repayment after 5 years. Floating Rate -G-Sec. Rate (+) 125Bps, at the end of each year secured by hypothecation of asset of Kaiga-3&4 on Paripassu charge basis.	26.03.2012	**20000.00**	20000.00
XV	**Term Loan From Bank of Maharashtra** With bullet repayment after 5 years. Floating Rate -G-Sec. Rate (+) 100Bps, at the end of each year secured by negative lien of asset of Kaiga-3&4	07.03.2013	**20000.00**	20000.00
XVI	**Term Loan From Bank of Maharashtra** With bullet repayment after 5 years. Floating Rate -G-Sec. Rate (+) 100Bps, at the end of each year secured by negative lien of asset of Kaiga-3&4	13.03.2013	**20000.00**	20000.00
XVII	**Term Loan From Dena Bank** With bullet repayment after 5 years. Floating Rate -BPLR. Rate (-) 4.56%, at the end of each year secured by negative lien of asset of RAPP-5&6	10.12.2014	**25000.00**	25000.00
XVIII	**Term Loan From Bank of India** With bullet repayment after 5 years. Floating Rate -BPLR. Rate (-) 4.06%, at the end of each year secured by negative lien of asset of KAIGA 3&4 and RAPP 5&6	14.12.2014	**50000.00**	50000.00
XIX	**Term Loan From State Bank of India** With bullet repayment after 5 years. Floating Rate -SBAR. Rate (-) 3.81%, at the end of each year secured by negative lien of asset of KAIGA 3&4	24.12.2014	**50000.00**	50000.00
XX	**Term Loan From State Bank of India** With bullet repayment after 5 years. Floating Rate -SBAR. Rate (-) 3.81%, at the end of each year secured by negative lien of asset of KAIGA 3&4	26.02.2015	**25000.00**	25000.00
XXI	**Term Loan From Bank of India** With bullet repayment after 5 years. Floating Rate -BPLR. Rate (-) 4.06%, at the end of each year secured by negative lien of asset of KAIGA 3&4	14.06.2015	**100000.00**	-
XXII	**Term Loan From Bank of India** With bullet repayment after 5 years. Floating Rate -SBAR. Rate (-) 3.81%, at the end of each year secured by negative lien of asset of KK 1&2 and KAPP 3&4	28.06.2015	**50000.00**	-

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 3			As at 31st March 2011	As at 31st March 2010
SECURED LOANS (contd)				
XXIII	**Term Loan From State Bank of India**			
	With bullet repayment after 5 years. Floating Rate -SBAR. Rate (-) 3.81%, at the end of each year secured by negative lien of asset of KK 1&2	31.05.2015	100000.00	-
XXIV	**Term Loan From State Bank of India**			
	With bullet repayment after 5 years. Floating Rate -SBAR. Rate (-) 3.81%, at the end of each year secured by negative lien of asset of KAIGA 3&4 & RAPP 5&6	31.05.2015	25000.00	-
XXV	**Term Loan From Dena Bank**			
	With bullet repayment after 5 years. Floating Rate -SBAR. Rate (-) 4.56%, at the end of each year secured by negative lien of asset of KK 1&2	29.06.2015	25000.00	-
SUB-TOTAL (III-XXV)			918600.00	618600.00
GRAND TOTAL (I - XXV)			1203962.00	918720.00

Note: Bonds of the following series are secured by way of trusteeship agreement coupled with covenants of negative lien and irrevocable power of attorney in favour of trustees to create equitable mortgage over the fixed assets.

Series	Secured by
* XX & XXI	Rajasthan Atomic Power Station-unit 3 & 4
# XV & XIX	Kaiga Generating Station-unit 1 & 2
** XXII, XXIII & XXIV	Tarapur Atomic Power Project - 3 & 4
*** XXV & XXVI	Kaiga Atomic Power Project - 3&4 & Rajasthan Atomic Power Station-unit 5&6

(₹ in Lac)

SCHEDULE - 4	As at 31st March 2011	As at 31st March 2010
UNSECURED LOANS		
Loan from Department of Atomic Energy, Government of India (Russian Credit)	584077.18	624570.17
Interest Free Loan KK Project (DAE)	2900.00	2900.00
TOTAL	586977.18	627470.17

SCHEDULE - 5 FIXED ASSETS

(₹ in Lac)

	Gross Block				Depreciation/Obsolence Loss				Net Block	
	As At 1st April 2010	Additions	Deductions/ Adjustments	As At 31st March 2011	As At 1st April 2010	For The Year	Deductions/ Adjustments	As At 31st March 2011	As At 31st March 2011	As At 31st March 2010
A. Tangible Assets:										
Land (Freehold)	15470.32	468.00	0.00	**15938.32**	0.00	0.00	0.00	**0.00**	**15938.32**	15470.31
Land (Leasehold)	58.70	0.00	0.00	**58.70**	5.71	0.65	0.00	**6.36**	**52.34**	53.00
Buildings	107550.61	14826.77	31.79	**122345.59**	16131.23	1855.97	(9.83)	**17997.03**	**104348.56**	91419.38
Railway Sidings	34.03	0.00	0.00	**34.03**	32.32	0.00	0.00	**32.32**	**1.71**	1.71
Plant and Machinery	1766936.49	197175.94	3875.01	**1960237.42**	644343.40	86916.44	2888.26	**728371.58**	**1231865.84**	1122520.58
Furniture, Fixtures and Office Equipment	31046.57	1915.30	155.82	**32806.05**	18542.86	1585.32	81.62	**20046.56**	**12759.49**	12503.70
Vehicles	1338.22	155.54	37.10	**1456.66**	1020.75	58.18	63.36	**1015.57**	**441.09**	317.47
B. Intangible Assets :										
Software	612.59	166.47	7.43	**771.63**	286.54	113.23	0.00	**399.77**	**371.86**	326.05
C. Assets Held for Disposal	10.44	2.24	0.33	**12.35**	0.11	0.01	0.00	**0.12**	**12.23**	82.85
TOTAL	1923057.97	214710.26	4107.48	**2133660.75**	680362.92	90529.80	3023.41	**767869.31**	**1365791.44**	1242695.05
PREVIOUS YEAR TOTAL	1675855.23	253000.12	5797.38	**1923057.97**	604026.86	78392.56	2056.50	**680362.92**	**1242695.05**	1071828.35

Depreciation for the Year ₹ 87506.39 Lac is reconciled as under

	2010-11	2009-10
Depreciation charged to Profit & Loss	**86,765.18**	72107.60
Add : Depreciation included under Expenses During Construction period pending allocation (Sch - 6A)	**3,533.77**	4302.26
: Depreciation relating to prior period (Sch 15)	**38.45**	273.26
: Deduction / Adjustments	**(3023.41)**	(1,728.48)
: Depreciation on R&D Assets	**179.17**	136.56
: Obsolence Loss Trf. to prior period (Sch.15)	**13.23**	1,244.86
	87,506.39	76,336.06

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 6		As at 31st March 2011	As at 31st March 2010
CAPITAL WORK - IN PROGRESS			
Capital Work-in-Progress		**1006067.18**	1003497.10
Capital Goods and Stores *	84987.72		105812.11
Less : Provision for Obsolescence/Loss	47.63		64.38
		84940.09	105747.73
ADVANCES			
Against Material pending Acceptance		**4172.51**	8496.78
Against Capital Expenditure Considered good - Secured		**56385.81**	33730.02
Against Capital Expenditure Considered good	79270.40		101685.05
Against Capital Expenditure Considered doubtful	1287.80		1311.42
	80558.20		102996.47
Less : Provision for Doubtful Advances	1287.80		1311.42
		79270.40	101685.05
Expenditure During Construction Pending Allocation (Schedule 6A)		**347255.86**	340537.06
Expenses on upcoming Projects/ Sites **		**14777.03**	17549.91
TOTAL		1592868.88	1611243.65
Note :All advances are unsecured and considered good, unless otherwise stated.			
* Including Goods in Transit and lying with Contractors		**110.95**	898.08
** Including Transfer from Schedule 13		**522.67**	1609.70

(₹ in Lac)

SCHEDULE - 6A		As at 31st March 2011	As at 31st March 2010
STATEMENT OF EXPENDITURE DURING CONSTRUCTION PERIOD PENDING ALLOCATION			
Opening Balance		**345327.28**	310649.25
Add : Operation, Administrative and other Expenses			
Fuel	10.20		815.94
Heavy Water Charges	0.00		3538.45
SUB-TOTAL (A)	10.20	10.20	4354.39
Stores and Spares Consumed	815.33		710.52
Repairs and Maintenance			
a) Building	171.21		732.22
b) Plant and Machinery	1058.61		3639.53
c) Others	843.18		779.36

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 6A		As at 31st March 2011	As at 31st March 2010
STATEMENT OF EXPENDITURE DURING			
CONSTRUCTION PERIOD PENDING ALLOCATION (contd)			
Rates and Taxes	9.20		19.06
Insurance	801.42		436.58
Electricity and Water Charges -Plant Site	4429.95		3076.80
SUB-TOTAL (B)	8128.90	8128.90	9394.07
Salaries & Wages	22424.84		26175.00
Bonus / Incentives	902.33		955.12
Staff Welfare Expenses	2018.16		3107.61
Contribution to Provident and Other Funds	653.39		1046.45
Gratuity, Leave encashment & Other Employee Benefits	2479.04		4008.35
SUB-TOTAL (C)	28477.76	28477.76	35292.53
Rent	5.39		4.43
Travelling and Conveyance Expenses	132.86		190.48
Printing and Stationery	78.87		81.95
Electricity and Water Charges - Township	332.75		452.75
Advertisement Expenses	35.15		37.61
Other Expenses	1561.80		2493.54
Security Expenses	765.11		1143.60
Consultancy Charges	3509.54		5326.77
SUB-TOTAL (D)	6421.47	6421.47	9731.13
Detailed Project Report Expenses (Foreign Exchange Fluctuations)	116.55		(1373.71)
Depreciation	3533.77		4302.26
Interest on Borrowed Funds	16697.91		4475.24
Interest on Foreign Loan	22752.19		21645.02
Prior period expenses	8.43		(105.60)
SUB-TOTAL (E)	43108.85	43108.85	28943.21
TOTAL EXPENDITURE (A+B+C+D+E)		86147.18	87715.33
Less : Income			
Interest (Others)	423.97		36.52
Infirm Power	20.19		262.98
Other Income	878.08		831.32
	1322.24	1322.24	1130.82
NET EXPENSES FOR THE YEAR		84824.94	86584.51
		430152.22	397233.76
Less : Allocated to Fixed Assets		82896.36	56696.70
NET TOTAL		347255.86	340537.06

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 7	As at 31st March 2011	As at 31st March 2010
INVESTMENTS (AT COST)		
Long Term Investments (Unquoted)		
1. 10,264 Shares of KAPS Co-Operative society of ₹ 10/- each fully paid.	**1.03**	1.03
2. 7,102 Shares of NAPS Co-operative society of ₹ 10/- each fully paid.	**0.71**	0.71
3. 4,923.5 Shares of MAPS Co-operative society of ₹ 10/- each fully paid.	**0.49**	0.49
4. 1,200 Shares of TAPS Co-operative society of ₹ 10/- each fully paid.	**0.12**	0.12
5. Power Bonds (as per details herein below)	**156261.25**	185803.08
6. HUDCO Public Deposit scheme under HUDCO Multiplier scheme - Non-Trade (Earmarked Fund)	**14590.00**	41654.60
7. 78,000,000 Equity Shares of ₹ 10/ each L&T Special Steels and Heavy Forgings Pvt. Ltd.	**7800.00**	3900.00
8. Life Insurance Corporation of India (Employees Group Leave Encashment Scheme)	**19410.04**	9917.78
9. SBI Life Cap Assure (Leave Encashment Scheme)	**8558.47**	0.00
10. SBI Life Cap Assure (Gratuity Scheme)	**9724.40**	0.00
11. Life Insurance Corporation of India (Gratuity Fund)	**9614.39**	0.00
12. 300,000 Equity shares of ₹ 1,000/- each Bharatiya Nabhikiya Vidyut Nigam Ltd. (A Company under same management)	**3000.00**	0.00
AGGREGATE AMOUNT OF UNQUOTED INVESTMENTS	228960.90	241277.81

Particulars of Bonds	Quantity		Face Value	Total (₹ in Lac)	
	As at 31st March 2011	As at 31st March 2010	(In ₹)	As at 31st March 2011	As at 31st March 2010
Long Term Investment					
1. 8.5 % tax free Govt. of Andhra Pradesh Special Bonds	**451,020**	541,224	1,000	**4,510.20**	5,412.24
2. 8.5 % tax free Govt. of Gujarat Special Bonds	**1,849,760**	2,219,712	1,000	**18,497.60**	22,197.12
3. 8.5 % tax free Govt. of Haryana Special Bonds	**1,442,300**	1,730,760	1,000	**14,423.00**	17,307.60
4. 8.5 % tax free Govt. of Himachal Pradesh Special Bonds	**80,810**	96,972	1,000	**808.10**	969.72
5. 8.5 % tax free Govt. of Kerala Special Bonds	**22,540**	27,048	1,000	**225.40**	270.48
6. 8.5 % tax free Govt. of Punjab Special Bonds	**106,830**	128,196	1,000	**1,068.30**	1,281.96
7. 8.5 % tax free Govt. of Uttar Pradesh Special Bonds	**1,496,300**	1,795,560	1,000	**14,963.00**	17,955.60
8. 8.5 % tax free Govt. of Uttaranchal Special Bonds	**168,250**	201,900	1,000	**1,682.50**	2,019.00
9. 8.5 % tax free Govt. of Maharashtra Special Bonds	**282,670**	339,204	1,000	**2,826.70**	3,392.04
10. 8.5 % tax free Govt. of Jammu & Kashmir Special Bonds	**1,453,900**	1,744,680	1,000	**14,539.00**	17,446.80
11. 8.5 % tax free Govt. of Madhya Pradesh Special Bonds	**4,906,400**	5,887,680	1,000	**49,064.00**	58,876.80
12. 8.5 % tax free Govt. of Delhi Long Term Advance	-	-	-	**6,936.38**	8,197.54
13. 8.5 % Govt. of Jammu & Kashmir Special Bonds (Tax Refundable)	**2,671,707**	3,047,618	1,000	**26,717.07**	30,476.18
TOTAL				156,261.25	185,803.08
Fixed Deposit with HUDCO - Non-Trade (Earmarked Fund)					
1. 7.7% HUDCO Bonds - Series SD-III	**1,340**	1,340	1,000,000	**13,400.00**	13,400.00
2. 7.7% HUDCO Bonds - Series SD-III	**119**	119	1,000,000	**1,190.00**	1,190.00
3. 6.75% HUDCO Public Deposit-Decommissiong Fund	-	-	-	-	27,064.60
TOTAL				14,590.00	41,654.60

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 8			As at 31st March 2011	As at 31st March 2010
CURRENT ASSETS, LOANS AND ADVANCES				
A : CURRENT ASSETS				
1. Inventories *				
Store and Spares		39865.25		39484.42
Less: Provision for Obsolescence/Loss		621.36		607.32
			39243.89	38877.10
2. Sundry Debtors				
Secured (Considered Good)				
i)	Over six months	0.00		1.16
ii)	Others	30815.87		23034.35
		30815.87		23035.51
Unsecured				
i)	Over six months			
	- Considered Good	9644.52		12093.09
	- Considered Doubtful	313.65		356.69
		9958.17		12449.78
	Less : Provision for Doubtful Debts	313.65		356.69
		9644.52		12093.09
ii)	Others (Considered Good)	73983.32		15220.36
			114443.71	50348.96
3. Cash and Bank Balances				
i)	Cash and Cheques on Hand		**3765.53**	1019.83
ii)	With Scheduled Banks			
	- in Current Accounts	16501.24		31339.22
	- in Deposit Accounts **	883315.21	**899816.45**	635689.73
iii)	Balances with Scheduled Banks for Earmarked Funds			
	- In Current Accounts	1330.73		0.80
	- In Deposit Accounts	101951.36		53022.61
		103282.09	**103282.09**	53023.41
			1006864.07	721072.20
4. Other Current Assets				
i)	Interest accrued on Deposits/Advances	50228.04		35540.13
ii)	Interest accrued but not due on loans to staff	4067.99		4416.63
iii)	Others	2604.11		340.14
iv)	Interest accrued on Earmarked Funds	5746.13		23840.94
			62646.27	64137.83
B : LOANS AND ADVANCES				
1. Loans and Deposits				
i)	To Government Companies (Unsecured & Considered good)	155.63		114.94
ii)	To JV Company - L&T Special Steels & Heavy Forgings Pvt. Ltd (Secured & Considered good)	30000.00		0.00
iii)	Interest Accrued but not due on Loan to JV Co.	919.11		0.00
			31074.74	114.94

SCHEDULES annexed to and forming part of Accounts

AS AT 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 8			As at 31st March 2011	As at 31st March 2010
CURRENT ASSETS, LOANS AND ADVANCES (contd)				
2. Advances Recoverable in Cash or in kind or for value to be received				
i)	Secured, Considered Good	4385.24		4272.98
ii)	Unsecured			
	- Considered Good	19136.81		11731.07
	- Considered Doubtful	19.08		20.14
		23541.13		16024.19
	Less : Provision for Doubtful Advances	19.08		20.14
			23522.05	16004.05
3. Advance Tax (Net of provision)			18771.03	22036.72
4. Recoverable from DAE/DAE Undertakings			6807.97	19101.66
5. Government Departments/Public Bodies and State Electricity Undertakings			1801.31	1588.00
TOTAL			1305175.04	933281.46
* Inventories includes Goods in Transit and lying with Contractors			372.31	529.57
** Includes Fixed Deposits of ₹ 2000 crore (Previous year ₹ 950 crore) pledged against Temporary Overdraft of ₹ 1420 crore (Previous year ₹ 890 crore)				

(₹ in Lac)

SCHEDULE - 9			As at 31st March 2011	As at 31st March 2010
CURRENT LIABILITIES AND PROVISIONS				
A. Current Liabilities				
1. Sundry Creditors				
	Amount due to Micro and Small Enterprises	163.07		101.08
	Others	28721.73	28884.80	28421.32
2. Payable to DAE/DAE Undertakings			20540.89	15695.73
3. (a)	Unclaimed Bonds *		13.10	13.10
(b)	Unclaimed Interest *		3.14	5.91
4. Other Liabilities			47377.20	25225.30
5. Temporary Overdraft (against FDR pledged with Bank ₹ 2000 Cr P.Y. ₹ 950 Cr)			142000.00	89000.00
6. Advance from Customers			0.00	2919.53
7. Interest Accrued but not due			16353.24	19567.74
			255172.37	180949.71
B. Provisions				
1. Gratuity			22051.38	18447.44
2. Leave Encashment and Other Employee Benefits			33982.48	25482.72
3. Wealth Tax			105.00	42.00
4. Proposed Dividend			26290.00	0.00
5. Tax on Proposed Dividend			4366.44	0.00
			86795.30	43972.16
TOTAL			341967.67	224921.87

* Transferable to Investors' Education and Protection Fund on expiry of 7 years as per the requirement of the Companies Act 1956.

SCHEDULES annexed to and forming part of Accounts

FOR THE YEAR ENDED 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 10			For the year ended 31st March 2011	For the year ended 31st March 2010
OTHER INCOME				
1.	**Interest Received**			
i)	On Deposits with Nationalised Banks (TDS ₹ NIL, Pr. Yr. ₹ NIL)	64188.32		46127.19
ii)	On Staff Loans	1276.52		505.16
iii)	On Others	16864.02		14846.43
			82328.86	61478.78
	Less : Transferred to Expenditure During Construction Period (Sch.6A)	386.30		36.52
	Less : Transferred to DAE	34.64	420.94	18.88
			81907.92	61423.38
2.	**Delayed Payment Charges**		248.61	215.95
3.	**Excess Provision Written Back**		1230.53	466.98
4.	**Profit on Sale of Fixed Assets**		1.79	93.11
5.	**Miscellaneous Income**		3735.83	3991.24
6.	**Income from Consultancy Services**		475.65	457.52
7.	**Income from Current Investments**		898.83	1059.95
	Less : Transferred to Expenditure During Construction Period (Sch.6A)	248.31		304.01
	Adjust with dues of DAE	82.40	330.71	151.15
TOTAL			88168.45	67252.97

(₹ in Lac)

SCHEDULE - 11			For the year ended 31st March 2011	For the year ended 31st March 2010
FUEL & HEAVY WATER				
Fuel Charges				
(a)	Fuel Use Charges		153207.10	88686.31
(b)	Fuel Lease Charges		2628.40	801.74
(c)	Fuel Recovery Charges		11134.00	8540.59
			166969.50	98028.64
Heavy Water charges				
(a)	Heavy Water Lease Charges		55783.60	45369.60
(b)	Heavy Water Make up Charges		6366.50	2723.24
			62150.10	48092.84
	Less : Transferred to Expenditure during Construction Period (Sch.6A)		10.20	4354.39
TOTAL			229109.40	141767.09

SCHEDULES annexed to and forming part of Accounts

FOR THE YEAR ENDED 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 12			For the year ended 31st March 2011	For the year ended 31st March 2010
OPERATION AND MAINTENANCE EXPENSES				
Stores and Spares consumed			**3547.07**	2993.49
Repairs and Maintenance				
a)	Buildings	4806.90		4287.55
b)	Plant & Machinery	20757.06		21773.64
c)	Others	3622.33		3275.94
			29186.29	29337.13
Rates and Taxes			**883.47**	765.62
Insurance			**1807.50**	1430.17
Electricity and Water Charges Plant Site			**6149.93**	5957.84
Less : Transferred to				
Expenditure During Construction Period (Sch. 6A)			**8128.90**	9394.07
Adjust with dues of DAE			**27.18**	404.49
			8156.08	9798.56
TOTAL			33418.18	30685.69

(₹ in Lac)

SCHEDULE - 13			For the year ended 31st March 2011	For the year ended 31st March 2010
EMPLOYEE'S REMUNERATION & BENEFITS				
Salaries & Wages			**67790.34**	64823.01
Bonus/Incentives			**11240.31**	5756.40
Contribution to Provident and other Funds			**4574.44**	4613.28
Gratuity, Leave Encashemnt and Other Employee Benefits			**14900.67**	19832.90
Staff Welfare Expenses			**11745.69**	12383.76
Less : Transferred to				
Expenditure during Construction Period (Sch.6A)			**28477.76**	35292.53
CWIP (Sch. 6)			**522.67**	1609.70
Adjust with dues of DAE			**4481.61**	4324.13
			33482.04	41226.36
TOTAL			76769.41	66182.99

SCHEDULES annexed to and forming part of Accounts

FOR THE YEAR ENDED 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 14		For the year ended 31st March 2011	For the year ended 31st March 2010
ADMINISTRATION AND OTHER EXPENSES			
Rent		**130.95**	88.88
Travelling and Conveyance expenses		**1911.53**	1514.79
Printing and Stationery		**462.05**	458.38
Electricity and Water Charges - Township		**1115.65**	1629.26
Loss on Sale of Fixed Asset		**11.35**	141.86
Advertisement Expenses		**630.08**	405.67
Rebates/ Discount		**11622.49**	9403.89
Research and Development Expenditure		**447.02**	564.07
Other Expenses		**13174.09**	14881.28
Security Expenses		**6693.16**	6731.85
		36198.37	35819.93
PROVISIONS :			
- for Obsolesence	0.00		183.77
- for loss/Obsolete Stocks	26.11		0.00
- for Doubtful Debts	0.00		139.56
- for Doubtful Advances	3.45		9.73
		29.56	333.06
		36227.93	36152.99
Less : Transferred to			
Expenditure during Construction (Sch. 6A)	6421.47		9731.13
Adjust with dues of DAE	694.90		1587.04
Drawn from R&D Fund	447.02		564.07
		7563.39	11882.24
NET TOTAL		**28664.54**	24270.75

SCHEDULES annexed to and forming part of Accounts

FOR THE YEAR ENDED 31ST MARCH 2011

(₹ in Lac)

SCHEDULE - 15		For the year ended 31st March 2011	For the year ended 31st March 2010
PRIOR PERIOD ADJUSTMENTS			
DEBITS			
Sale of Electrical Energy		**0.00**	19,940.15
Stores and Spares		**0.00**	1.93
Interest		**0.00**	18.18
Salaries and Wages & Contribution		**106.87**	32.09
Depreciation		**40.34**	579.98
Obsolence		**289.32**	1244.86
Repairs & Maintenance		**136.89**	11.19
Miscellaneous		**130.97**	671.50
		704.39	22499.88
Less : Transferred to Expenditure during construction period (Sch. 6A)	8.43		0.00
Adjust with dues of DAE	0.42	**8.85**	6.16
SUB-TOTAL		695.54	22493.72
CREDITS			
Stores & Spares		**414.04**	0.00
Repairs & Maintenance		**0.00**	341.34
Miscellaneous		**118.99**	545.14
Depreciation		**1.89**	306.72
Interest		**49.92**	2.64
		584.84	1195.84
Less : Income Transferred to Sch. 6A	0.00		105.60
Adjust with Dues of DAE	0.00		8.37
	0.00		
SUB-TOTAL		584.84	1081.87
TOTAL		110.70	21411.85

SCHEDULES annexed to and forming part of Accounts

FOR THE YEAR ENDED 31ST MARCH 2011

SCHEDULE - 16 SIGNIFICANT ACCOUNTING POLICIES AND NOTES FORMING PART OF ACCOUNTS

1) Significant Accounting Policies

1.1 Basis of Accounting

The financial statements are prepared under historical cost convention, on an accrual basis and in accordance with generally accepted accounting principles, accounting standards, relevant provisions of the Companies Act 1956, Electricity(Supply) Act, 2003 and Atomic Energy Act, 1962 .

1.2 Inventories

Inventory consists of Operations & Maintenance (O&M) stores & spares which includes maintenance supplies, consumables and loose tools awaiting use, to be consumed in the operations & maintenance process.

Spares which can be used only in connection with particular items of fixed assets & whose use is expected to be irregular are considered as capital spares/Insurance Spares and capitalized as Fixed Assets .

Stores & spares are valued at lower of cost/engineers estimate (where costs are not ascertainable) and net realizable value. 'Costs' include' cost of purchase' and 'cost of conversion', including incidentals like freight, octroi etc

Issue of stores & spares including inter unit transfer of stock and closing stocks are valued at monthly moving weighted average.

O&M stores & spares, including consumable stores and loose tools, are charged to revenue at the time of issue.

Non moving and slow moving items of inventory are subjected to continuous technical monitoring. Diminution in value of obsolete and unserviceable stores and spares is ascertained on review and provided for.

1.3 Prior Period Items

Prior period items are incomes or expenses, which arise in the current period as a result of 'errors' or 'omissions' in the financial statements prepared in earlier years. Effects of changes in estimates are not treated as omission or error.

1.4 Depreciation/Amortisation

Depreciation on fixed assets is provided on straight line method, on the capitalized cost, at the rates specified in Schedule XIV of The Companies Act, 1956 except for Computers and Peripherals including Software.

Cost of Computers and Peripherals are depreciated on Straight line Method over a period of 5 years to the extent of 95%.

Individual Assets costing upto ₹ 5000/- are fully depreciated in the year of acquisition

Depreciation on assets added on or after 1st April 2004 is provided on prorata basis with reference to the date of addition. Assets added prior to 1st April 2004 were depreciated with effect from start of subsequent financial year.

Assets acquired on lease arrangement are depreciated at the respective rate of depreciation applicable to asset or written off over lease period – whichever is higher. Leasehold land is amortised over the period of lease.

1.5 Revenue Recognition

Revenue is recognized on accrual basis and when its collection or receipt is reasonably certain.

1.5.1 Sale of Electrical Energy

Revenue on sale of electrical energy is recognized net of levies and is on the basis of the net units exported to beneficiaries at tariff notified by DAE. In cases where tariff is not notified, the same is recognized in Accounts at provisional tariff subject to final notification of tariff.

In case the Power Purchase Agreement with any beneficiaries has expired, pending renewal of the same, rebates are accounted for in accordance with the old Power Purchase Agreement.

1.5.2 Consultancy Income

Income from consultancy services is accounted for on the basis of actual progress/technical assessment of work executed in line with the terms of respective consultancy contracts.

1.5.3 Sale of scrap is accounted for as & when the sale is completed.

1.5.4 Liquidated Damages

Liquidated damages recovered from suppliers/contractors are recognized as income at the time of final settlement. Till such time they are shown under liabilities.

1.5.5 Claims lodged with insurance companies & others, are accounted for as & when these are settled by the concerned agencies.

1.6 Fixed Assets

Fixed assets taken over from the Department of Atomic Energy (DAE), Government of India (GOI), are recorded at the cost available from records of DAE or Engineers estimates - where ever costs are not ascertainable.

All fixed assets acquired/constructed by the Corporation thereafter are capitalized at cost of acquisition/ construction/ fabrication/erection or on engineers' estimates where ever the actual cost is not available.

The cost of fixed asset comprises its purchase price and any attributable costs of bringing the asset to its working condition for its intended use.

Item(s) retired from active use and held for disposal, is stated at its 'net book value or net realizable value, which ever is lower'.

Assets acquired on lease: Lease premium paid and other costs incurred for acquiring lease rights of assets, is treated as cost of the lease hold asset.

For Joint Ownership: Wherever ownership is available, such assets are capitalized

In case of receipt of Contribution: at cost, net of contribution from other parties

In case of payment of Contribution: at Contribution so paid to other parties.

Wherever Ownership is not available, payments made are treated as revenue expenditure and charged to the Profit & loss account.

Intangible Assets

Software which is not an integral part of related hardware, is treated as intangible asset and is depreciated on straight line method over a period of five years or its licence period, whichever is less.

Research & Development

Expenditure on acquisition of fixed assets for R&D is included in fixed assets and depreciation thereon is provided as applicable. Revenue expenditure on research & development (R&D) is charged to profit & loss account in the year the expenditure is incurred.

1.7 Capital Work-in-Progress

Capital work in progress (CWIP) includes all expenditure for acquisition and construction of assets. Such expenditure includes cost of preparing project report, conducting feasibility study, land survey and location study etc. CWIP also includes all direct incidental expenditure during construction (EDC). All common costs are allocated on a rational basis. EDC is allocated on prorata basis to the assets capitalized on commencement of commercial operation.

Major Renovation, modernization and Up gradation of Units at Stations needing long shut down resulting in increased efficiency of the unit are considered as projects.

All direct expenditure during such major renovation, modernization & upgradation is considered as 'CWIP' and capitalized on its completion.

1.8 Reserves and Surplus:

Levy collected from beneficiary for decommissioning of power plants is credited to Decommissioning Fund account. Amounts appropriated from Research & Development Fund (R&D fund) and Renovation & Modernisation Fund (R&M fund) towards capital expenditure is transferred from these funds to Capital Reserve and attributable amounts towards depreciation & revenue expenditure is transferred from R&D fund to Profit & Loss Account. Interest earned on respective fund investments and income tax paid are also adjusted in the said Funds.

1.9 Foreign Exchange Transactions

Foreign currency transactions are initially recorded at rates of exchange ruling at the date of transaction.

At Balance Sheet date, foreign exchange monetary items are reported using the closing rate. Non-monetary items denominated in foreign currency are reported at the exchange rate ruling on the date of transaction. Exchange difference arising from settlement/translation relating to fixed assets/capital work in progress (whether treated as borrowing cost or otherwise) are adjusted in the carrying cost of related assets. Other exchange difference are recognized as income or expense in the period in which they arise.

1.10 Investments

Long term Investments are stated at cost after deducting provision, if any made for permanent diminution in the values.

Current Investments are stated at lower of cost and market/fair value.

1.11 Employee Benefits

(i) DAE/GOI Employees

Leave salary, pension contribution and Provident Fund contributions in respect of employees on deputation from DAE/GOI are paid to DAE/GOI in accordance with the norms prescribed by DAE/GOI.

Pension contribution in respect of employees who have opted for combined pension, is paid to DAE/GOI, in accordance with the norms prescribed by DAE/GOI.

(ii) Corporation Employees

Contribution to Provident Fund is defined contribution scheme and contributions are charged to Profit & Loss Account of the year when the contribution to the fund are due.

Liability on account of gratuity, long term earned leave, half pay leave, and post retirement medical benefits are defined benefit obligations and are determined on the basis of actuarial valuation made at the end of each financial year and provided for in the books of accounts. Leaves encashed during the year are charged to Profit & Loss Account.

Actuarial gains/losses are recognized in the profit and loss account.

Provision for ex-gratia is made as per orders of Govt. of India. Incentives are provided as per the schemes adopted by the Corporation, as applicable from time to time.

1.12 Borrowing Costs

Borrowing cost includes interest, commitment charges, brokerage, underwriting costs, discounts/ premiums, financing charges, exchange difference to the extent they are regarded as interest costs and all ancillary /incidental costs incurred in connection with the arrangement of borrowing.

Borrowing costs which are directly attributable to acquisition/construction of a fixed asset, are capitalized as a part of cost pertaining to that asset. Other borrowing costs are considered as an expenditure in the period in which these are incurred and are charged to Profit & Loss account or EDC – as the case may be.

1.13 Taxation

Tax expense comprises of current tax and deferred tax charged to the profit and loss account for the year. Current tax includes Income Tax and Wealth Tax.

Provision for Income tax is made on the basis of estimated taxable income for the current accounting year in accordance with the Income Tax Act. 1961. Provision for Wealth Tax is made in accordance with Wealth Tax Act, 1957.

The deferred tax is recognized on timing differences between the book profit and taxable profit for the year. It is accounted for by applying the tax rates and the tax laws that have been enacted or substantively enacted as on the balance sheet date. Deferred tax assets arising from timing differences are recognized to the extent there is reasonable certainty that the assets can be realized in future.

Deferred tax assets in case of unabsorbed losses and unabsorbed depreciation are recognized only if there is virtual certainty that such deferred tax asset can be realized against future taxable profits.

1.14 Provisions, Contingent Assets and Contingent Liabilities

Contingent Liabilities in respect of show cause notices received are considered only when they are converted into demands.

Contingent Liabilities under various fiscal laws include those in respect of which the Corporation/ Department is in appeal.

Contingent Assets are neither recognized, nor disclosed.

Provisions and Contingent liabilities are reviewed at each Balance sheet date and adjusted to reflect the current management estimate.

1.15 Allocation of Head Office Expenditure

Identifiable expenses of Head Office are directly transferred to the respective locations. Expenditure incurred for rendering services for project related activities are allocated to the Projects, and expenditure incurred for rendering services for station related activities are allocated to the Stations.

Expenditure incurred to projects at Head Office is allocated to projects in equal proportion. The Head Office expenditure related to stations is allocated to stations in equal proportion.

Unidentifiable expenses are charged to Profit & Loss account.

1.16 Cash Flow Statement

Cash Flow Statement is prepared in accordance with the indirect method prescribed in Accounting Standard (AS) 3 on "Cash Flow Statements".

2 Notes forming part of Accounts

2.1 Estimated amount of Contracts remaining to be executed on capital Account (net of advances) ₹ 517818.35 Lac (Previous year ₹ 336850.39 Lac). Corporation has also committed to subscribe Share Capital of

(i) Bharatiya Nabhikiya Vidyut Nigam Ltd, (BHAVINI) ₹ 19708 Lac (previous year ₹ 22708 Lac) and

(ii) Larsen & Toubro Special Steels & Heavy Forgings Pvt Ltd (LTSSHF) ₹ 7200 Lac (previous year ₹ 11100 Lac).

(iii) Anushakti Vidyut Nigam Ltd., ₹ 5.10 Lac, (previous year ₹ Nil)

Further the corporation has committed for providing Loan for ₹ 5000 Lac (previous year 35000 Lac) to Larsen & Toubro Special Steels & Heavy Forgings Pvt Ltd (LTSSHF).

2.2 Contingent Liabilities not Provided For

(₹ in Lac)

Sr No	Particulars	2010–11	2009–10
i)	Claims against the Corporation not acknowledged as debts	**13704.47**	13277.61
ii)	Sales tax/ Entry Tax Demands contested in Appeals (Amount paid under protest ₹259.03 Lac, Previous year ₹ 395.82 Lac.	**11.91**	655.95
iii)	Unexpired value of Letters of Credits/ Bank Guarantees given on behalf of corporation	**11.89**	203.24
iv)	Income–tax demands contested in appeals net of provisions (Amount paid under protest ₹ 20575.45 Lac, Previous year ₹ 18689.78 Lac)	**33068.70**	19852.98

In the opinion of management, the aforesaid contingent liabilities relating to income-tax demands, if eventually arise on the Corporation, would be claimed from the beneficiaries except withholding tax of ₹12683.49 Lac which shall be added to project cost of Kudankulam (KKNPP1&2).

Amount payable to Project Affected People on rehabilitation at Tarapur Maharastra Site (TMS) has been paid and provided in respect of demands received till date, as per court orders. In view of pending court cases, the future liability is unascertainable.

Claims under point (i) above includes notice received from Maharashtra Pollution Control Board (MPCB) by TMS for payment of Cess under Water Cess Act, 1977 amounting to ₹ 2,078.98 Lac (Previous year ₹ 2078.98 Lac) disputed by TMS before the Cess Appellate Committee of MPCB.

Contingent liability for ₹ 568 Lac on account of water cess in respect of Rajasthan Atomic Power Station (RAPS 2) for the period from 01.04.1984 to 12.03.2003 has been contested and is pending with Rajasthan High Court, Jaipur.

2.3 Unsecured Loans

DAE loan (Russian credit) represents funds provided by DAE to deposit with Controller of Aid Accounts & Audit (CAA&A) for repayment of credit extended by Government of Russian Federation to Government of India, after repayment in terms of various contracts entered into with M/ s Atomstroyexport to set up two units of 1000 MW each at Kudankulam, with an understanding that exchange fluctuation on repayment of the credit by GOI shall be on account of the Corporation.

2.4 Fixed Assets

2.4.1 Gross Block of Fixed Assets and related Accumulated Depreciation include:

Value of assets taken over from DAE are accounted at their original cost and related accumulated depreciation based on its classification.

2.4.2 Land

2.4.2.i Land includes cost incurred on its development.

2.4.2.ii Title deed of land owned by TMS remains in name of erstwhile Tarapur Atomic Power Project.

2.4.2.iii Land at Rawatbhata Rajasthan Site (RRS) includes :

a) 267.21 hectares of Revenue Department & Private land acquired for which title (Jamabandi) is available;

and does not include:

a) 393.58 hectares of Forest and Revenue Department land acquired on the condition that its legal status would remain unchanged;

b) 983.40 hectares of forest land taken on notional rent of Re1 per annum.

2.4.3 Buildings include:

2.4.3.i Lease premium in respect of premises taken on long lease at various places;

2.4.3.ii Proportionate cost in respect of buildings constructed on the land belonging to DAE & others, as per the respective arrangements/ understandings;

2.4.3iii Buildings Constructed on Land belonging to DAE as per respective arrangements/ undertakings.

2.5 Capital Work–in–Progress (CWIP)

2.5.i CWIP of Contracts & Materials Management division (C&MM) includes (i) materials lying with fabricators amounting to ₹ 15809.17 Lac (Previous year ₹ 10554.64 Lac) and (ii) advances amounting to ₹ 56589.35 Lac (Previous year ₹ 42085.67 Lac). Balances in Advances are predominantly supply/ stage payments made to Suppliers/fabricators against dispatch documents or against materials received by sites/units and under inspection or delivered to fabricators for further processing, which are in the process of adjustment/reconciliation. In the opinion of the management, stagnancy in respect of such advances is periodically reviewed and provisions required, if any is accordingly made.

2.5.ii Gain on Foreign Exchange Rate fluctuation for the year on Russian Credit amounting to ₹ 4330.50 Lac (Previous Year: of ₹ 70928.11 Lac) being adjusted in CWIP at Kudankulam.

2.5.iii Other Expenses in EDC at Kudankulam includes loss due to Foreign Exchange Rate Fluctuation amounting to ₹ 0.11 Lac (Previous Year ₹ 0.17 Lac).

2.6 Inventories

As per Technical appraisal made by the management, it is of the opinion that slow moving and non moving inventory lying with the Corporation as at the year–end are serviceable and in good condition.

The management affirms correct identification of Shortage/ obsolescence of stores, spares and capital inventories which are non–moving/ slow moving, in view of technical reasons and provided for.

Inventory is net of ₹ 1519 Lac held on behalf of DAE in respect of RAPS-1 as a custodian.

2.7 During the year Head Office expenditure allocated to projects & stations are distributed in equal proportion among the projects & stations respectively, instead of allocating in the ratio of annual capital outlay for projects & annual net sales of electrical energy for stations, followed earlier. This change in allocation of Head Office expenditure to projects & stations does not have any impact on the profit for the year. Similarly there is no impact on the profit for the year with regard to change in accounting policy on valuation of store and spares at lower of cost / Engineer's estimate and net realizable value as against at cost / Engineer's estimate in the previous year.

2.8 Vide Notification no. DAE/OM/No.–3/10(17)/87–PP dated 22nd December 1988, the Corporation is collecting levy from beneficiaries for Decommissioning of power plants, on behalf of DAE and the levy is credited to Decommissioning Fund account, as required by the said notifications. Interest earned on the said fund investments & income tax paid are also adjusted in the said Fund.

2.9 During the year Decommissioning Fund levy aggregating to ₹ 4709.54 Lac (Previous year ₹ 3205.87 Lac) has been collected on the basis of net units exported to the beneficiaries & others, at tariffs notified by DAE.

2.10 Investments include Bonds received from various beneficiaries in the form of RBI securitised 8.5% tax free and taxable bonds/ long term advance against Debtors outstanding on Sale of Power upto September 2001, in accordance with the recommendations of Ahluwalia Committee.

2.11 Sales and Expenditure During Construction include Internal Consumption of Power for Projects amounting to ₹ 1046.35 Lac (Previous Year ₹ 1600.53 Lac) which is considered at cost of generation.

2.12 Pending finalization of Tariff for KAIGA Unit 3&4 and RAPS Unit 5&6, the sale of electrical energy was billed on provisional basis adopting notified tariff of KAIGA 1&2 and Infirm power tariff of RAPS 5&6 respectively. The details of net sale of electrical energy billed based on such provisional tariff are given below:

Particulars	KAIGA 3&4 For 2010-11	KAIGA 3 For 2009-10	RAPP 5&6 For 2010-11	RAPP 5&6 For 2009-10
Net Sales (in MUs)	**1438.76**	954.68	**2498.38**	248.91
Net Sales (₹ in Lac)	**43702.01**	28989.07	**75023.75**	7524.31

2.13 The Department of Atomic Energy (DAE) has issued revised tariff norms for determining tariff for sale of electricity by Atomic Power Stations to the Electricity Undertakings, vide notification no. 1./2(20)/2005-Power/Vol-III/11689 dated 8th December 2010. The revised tariff is due to be effective from 1st July 2010 for all atomic power stations and shall remain effective for 5 years. However the final tariff as per new tariff norms has not yet been notified. Pending such notification the sale revenue for the year has been determined as per existing notified tariff / on provisional basis as per practice of the Corporation.

2.14. a Debtors at NAPS include ₹ 7733 Lac (previous year ₹ 7733 Lac) recoverable from Delhi Electric Supply Undertaking (DESU) which are more than 3 years old. These dues have been confirmed by the Ministry of Power, hence being fully recoverable, no provision is required to be made.

b Debtors at Head Office include ₹ 160.16 Lac (Previous Year ₹ 86.82 Lac) and at Contract & Material Managements include ₹ Nil (Previous Year ₹ 30.44 Lac) recoverable from Bhartiya Nabhikiya Vidyut Nigam Limited (BHAVINI), a Company under the same management.

c Balance shown under accounts recoverable/payable from/to DAE and its undertakings are being reconciled regularly with DAE on monthly / quarterly basis. DAE maintain their account on cash basis, where as accounts in the Corporation are maintained on double entry system. Accordingly balances at the close of the year are subject to confirmation & adjustments if any.

2.15 Disclosure as per Accounting Standard 15 (AS -15):

General description of various defined employee benefit schemes are as under:

Provident Fund:

The Corporation pays fixed contribution to Provident fund at predetermined rates to a separate Trust, which invests the funds in permitted securities. The contribution to the Fund for the year is recognized as expense and is charged to Profit & Loss Account. The obligation of the Corporation is to make such fixed contribution.

Gratuity:

The Corporation has a defined benefit gratuity plan. Every employee who has rendered continuous service of five years or more is entitled to get gratuity at 15 days salary (15/26 X last drawn basic salary plus dearness allowance) for each completed year of service subject to a maximum of ₹ 10 Lac on superannuation, resignation, termination, disablement or on death. The liability for the same is recognized on the basis of actuarial valuation.

Leave Encashment / Half Pay Leave:

The Corporation provides for earned leave benefit (including compensated absences) and half-pay leave to the employees of the Corporation which accrue annually at 30 days and 20 days respectively. A maximum of 300 days of earned leave and 240 half pay leaves is en-cashable as per the rules of the Corporation. The liability for the same is recognized on the basis of actuarial valuation.

Post Retirement Medical Benefit Scheme (PRMBS):

The Corporation has Post Retirement Medical Benefit Scheme (PRMBS), under which retired employee and family are provided medical facilities in the Corporation hospital / empanelled hospitals. The liability for the same is recognized on the basis of actuarial valuation.

The summarized position of various defined benefits recognized in the profit and loss account & balance sheet is given below:

(in ₹, except where otherwise mentioned)

		Gratuity As on		Leave Encashment As on	
		31st March 2011	31st March 2010	**31st March 2011**	31st March 2010
I	**Assumptions**				
	Mortality	**LIC(1994-96)Ult**	LIC(1994-96)Ult	**LIC(1994-96)Ult**	LIC(1994-96)Ult
	Discount Rate	**8.50%**	8.25%	**8.50%**	8.25%
	Rate of increase in compensation	**6.00%**	6.00%	**6.00%**	6.00%
	Rate of return (expected) on plan assets	-	-	-	-
II	**Changes in present value of obligations**				
	PVO at beginning of period	**1,844,743,955**	1,661,855,506	**1,431,660,267**	959,536,124
	Interest cost	**153,750,947**	130,501,929	**116,510,498**	74,322,344
	Current Service Cost	**137,071,246**	126,624,708	**112,825,031**	104,226,356
	Benefits paid	**-99,263,471**	-96,908,999	**-151,648,632**	-145,595,797
	Actuarial (gain)/loss on obligation	**168,834,840**	22,670,812	**242,223,659**	439,171,240
	PVO at end of period	**2,205,137,517**	1,844,743,955	**1,751,570,823**	1,431,660,267
III	**Changes in fair value of plan assets**				
	Fair Value of Plan Assets at beginning of period	-	-	-	-
	Expected Return on Plan Assets	-	-	-	-
	Contributions	**99,263,471**	96,908,999	**151,648,632**	145,595,797
	Benefits paid	**-99,263,471**	-96,908,999	**-151,648,632**	-145,595,797
	Actuarial gain/(loss) on plan assets	-	-	-	-
	Fair Value of Plan Assets at end of period	-	-	-	-

SCHEDULES annexed to and forming part of Accounts

FOR THE YEAR ENDED 31ST MARCH 2011

(in ₹, except where otherwise mentioned)

		Gratuity As on		Leave Encashment As on	
		31st March 2011	31st March 2010	**31st March 2011**	31st March 2010
IV	**Fair Value of Plan Assets**				
	Fair Value of Plan Assets at beginning of period	-	-	-	-
	Actual Return on Plan Asset	-	-	-	-
	Contributions	**99,263,471**	96,908,999	**151,648,632**	145,595,797
	Benefit paid	**-99,263,471**	-96,908,999	**-151,648,632**	-145,595,797
	Fair Value of Plan Assets at end of period	-	-	-	-
	Funded Status	**-2,205,137,517**	-1,844,743,955	**-1,751,570,823**	-1,431,660,267
	Excess of actual over estimated return on Plan Assets	-	-	-	-
V	**Actuarial Gain/(Loss) Recognized**				
	Actuarial Gain/(Loss) for the period (Obligation)	**-168,834,840**	-22,670,812	**-242,223,659**	-439,171,240
	Actuarial Gain/(Loss) for the period (Plan Assets)	-	-	-	-
	Total Gain/(Loss) for the period	**-168,834,840**	-22,670,812	**-242,223,659**	-439,171,240
	Actuarial Gain/(Loss) recognized for the period	**-168,834,840**	-22,670,812	**-242,223,659**	-439,171,240
	Unrecognized Actuarial Gain/(Loss) at end of period	-	-	-	-
VI	**Amounts to be recognized in the balance sheet and Statement of profit & loss account**				
	PBO at end of period	**2,205,137,517**	1,844,743,955	**1,751,570,823**	1,431,660,267
	Fair Value of Plan Assets at end of period	-	-	-	-
	Funded Status	**-2,205,137,517**	-1,844,743,955	**-1,751,570,823**	-1,431,660,267
	Unrecognized Actuarial Gain/(Loss)	-	-	-	-
	Net Asset/(Liability) recognized in the balance sheet	**-2,205,137,517**	-1,844,743,955	**-1,751,570,823**	-1,431,660,267
VII	**Expense recognized in the statement of P&L A/C**				
	Current Service Cost	**137,071,246**	126,624,708	**112,825,031**	104,226,356
	Interest Cost	**153,750,947**	130,501,929	**116,510,498**	74,322,344
	Expected Return on Plan Assets	-	-	-	-
	Net Actuarial (Gain)/Loss recognized for the period	**168,834,840**	22,670,812	**242,223,659**	439,171,240
	Expense recognized in the statement of P&L A/C	**459,657,033**	279,797,448	**471,559,188**	617,719,940
VIII	**Movements in the liability recognized in Balance Sheet**				
	Opening Net Liability	**1,844,743,955**	1,661,855,506	**1,431,660,267**	959,536,124
	Expenses as above	**459,657,033**	279,797,448	**471,559,188**	617,719,940
	Benefits paid	**-99,263,471**	-96,908,999	**-151,648,632**	-145,595,797
	Closing Net Liability	**2,205,137,517**	1,844,743,955	**1,751,570,823**	1,431,660,267

Disclosure for Half pay leave & Post Retirement Medical Benefit Scheme (PRMBS) on the basis of actuarial valuation :-

	Half Pay Leave As on		Post Retirement Benefit Scheme (PRMBS) As on	
	31st March 2011	31st March 2010	**31st March 2011**	31st March 2010
Assumptions				
Mortality	**LIC(1994-96)Ult**	LIC(1994-96)Ult	**LIC(1994-96)Ult**	LIC(1994-96) Ult
Discount Rate	**8.50%**	8.25%	**8.50%**	8.25%
Rate of increase in compensation	**6.00%**	6.00%	**-**	-
Rate of Withdrawal	**1.00%**	1.00%	**1.00%**	1.00%
Value of Liability (as at end of the year)	**₹ 95,10,12,994**	₹ 65,26,03,357	**₹ 69,56,63,736**	₹ 46,40,08,458

2.16 The Corporation has taken up the "Nuclear Power Corporation of India Ltd.- Employees Group Leave Encashment Scheme", (NPCIL GLES) from Life Insurance Corporation against the Leave Encashment liability and a sum of ₹ 19410.04 Lac (previous year ₹ 9917.78 Lac) have been invested under this scheme. In addition to this, a sum of ₹ 8558.47 Lac (previous year ₹ Nil) have also been invested in SBI Life Cap Assure Leave Encashment Scheme.

A sum of ₹ 9724.40 Lac (previous year ₹ Nil.) has been invested towards SBI Life Cap Gratuity Assure Scheme and a sum of ₹ 9614.39 Lac (previous year ₹ Nil) towards LIC Gratuity Fund.

2.17 The operation of the Corporation of generation of electricity is considered as a single segment, which operates in one geographical segment; hence Segment Reporting as required under Accounting Standard (AS)–17 is not applicable.

2.18 **Related Parties Disclosure (AS 18)**

a) **Related Parties :**

Key Management Personnel :		
i)	Shri Shreyans Kumar Jain	Chairman & Managing Director
ii)	Shri S.A. Bhardwaj	Director, Technical
iii)	Shri J.K. Ghai	Director, Finance
iv)	Shri G. Nageswara Rao	Director, Operations
v)	Shri K. C. Purohit	Director, Projects
vi)	Shri S. B. Agarkar	Director, HR

b) **Transactions with the related parties (Key Management Personnel) as per books of accounts as on 31st March 2011 :**

(i) Remuneration - ₹ 114.23 Lac (Previous year ₹ 149.59 Lac)

(ii) Dues outstanding to the Corporation as on 31st March 2011 ₹ 4.36 Lac (Previous year ₹ 3.24 Lac)

(iii) Other payments ₹ 2.45 Lac (previous year ₹ Nil.)

2.19 Disclosure in respect of Accounting Standard 20: Earnings per Share

Earning per share (EPS) Basic and Diluted (after tax) is calculated as under:

Year	Numerator – Net Profit as per Profit and Loss Account (Amount in Lac)	Denominator – Weighted Average number of equity shares outstanding (Face Value of ₹ 1000/- each)	Earning Per Share (₹)
2010–11	**137632.57**	**101453327**	**135.66**
2009–10	41641.33	101453327	41.04

2.20 The item wise details of deferred tax liability (net) in accordance with Accounting Standard 22 : Taxes on Income are as under:

(₹ in Lac)

Sr No	Deferred Tax Liability (Net)	As at 31st March 2011	As at 31st March 2010
i)	Difference of book depreciation and tax depreciation (Deferred Tax Liability)	**205125.39**	197914.18
ii)	Provisions & other disallowances	**(15829.27)**	(13285.51)
	(Deferred Tax Asset)		
	Deferred Tax Liability (Net)	**189296.12**	184628.67

The net increase in deferred tax liability is ₹ 4667.46 Lac and the same is recoverable from the beneficiaries on becoming part of Current tax.

2.21 Interest in Joint Venture: The Corporation along with M/s Larsen & Toubro Limited entered into a joint venture operation named as "L&T Special Steels and Heavy Forgings Private Limited" for establishing, manufacturing and supply of forgings for Indian Nuclear programme (both civilian and non-civilian) including for exports. NPCIL is having 26% share in the Joint venture with Issued Share Capital of ₹ 45000 Lac & Subscribed Share Capital of ₹ 30000 Lac. The joint venture company is in its early stage of operation. The Corporation has subscribed ₹ 7800 Lac (previous year ₹ 3900 Lac) till the year 2010-11.

Further the Corporation has also given the Loan of ₹ 30000 Lac to the JV Company which is secured by first pari passu charge over the project assets & immovable properties of the Company.

Based on audited accounts of the JV entity the Corporation's share of assets, liabilities and income & expenses are given below:

(₹ in Lac)

Sr No		As at 31st March 2011	As at 31st March 2010
A.	Assets		
	Long Term Assets – Tangible	**17361.19**	2497.28
	– In-Tangible	**817.08**	0.00
	Investments	**2685.49**	1408.98
	Current Assets	**1146.48**	158.44
B.	Liabilities		
	Secured Loan	**3900.00**	0.00
	Short Term Liability	**2457.12**	310.51
C.	Income	**11.83**	23.16
D.	Expense	**135.91**	144.18

2.22 (i) The Corporation along with NTPC Ltd., entered into a joint venture (JV) operation named as "Anushakti Vidyut Nigam Ltd." for establishing nuclear power stations. The JV has been incorporated on 27th January 2011. NPCIL has 51% share in the JV and till 31st March 2011 no contribution has been made on initial subscription of shares.

(ii) The Corporation has entered into Joint Venture (JV) operation named as "NPCIL Indian Oil Nuclear Energy Corporation Ltd." for establishing nuclear power stations. NPCIL has 74% share in the JV operation and it has been incorporated on 6th April 2011.

2.23 As stipulated in AS–28 Impairment of Assets, the Corporation assessed potential generation of economic benefits from its business units and is of the view that assets employed in continuing businesses are capable of generating adequate returns over their useful lives in the usual course of business, there is no indication to the contrary and accordingly the management is of the view that no impairment provision is called for in these accounts

2.24 Disclosure of provision as required under AS–29 Provisions Contingent Liabilities and Contingent Assets:

(₹ in Lac)

Sl No	Nature of Provision & expected time of outflow	Provision outstanding at the beginning of the year	Provision made during the year	Provision utilised during the year	Provision reversed during the year	Provision outstanding at the end of the year
1.	Income Tax	**36831.88**	30974.00	5484.27	0	62321.61
2.	Fringe Benefit Tax	**2247.15**	0	0	0	2247.15
3.	Wealth Tax	**42.00**	105.00	42.00		105.00
4.	Proposed Dividend	**0**	26290.00		0	26290.00
5.	Tax on Proposed Dividend	**0**	4366.44		0	4366.44
6.	Gratuity	**18447.44**	4558.75	954.81	0	22051.38
7.	Leave Encashment	**14316.60**	4715.59	1516.48	0	17515.71
8.	Half Pay Leave	**6526.03**	3309.77	325.67	0	9510.13
9.	Post Retirement Medical Benefit Scheme	**4640.08**	2316.54	0	0	6956.62

2.25 **Foreign Currency exposures not hedged as on 31st March 2011 are as under**

Sr. No.	Particulars	Currencies	Amount as at 31st March 2011	Amount as at 31st March 2010
1.	Sundry Creditors/Deposits /Loans and Retention money	USD	**11901.98 Lac**	12255.02 Lac
		EURO	**1.72 Lac**	0.80 Lac
		GBP	**Nil**	0.06 Lac

2.26. Details of Dues to Micro enterprises and Small enterprises *

(₹ in Lac)

Sr No		31st March 2011	31st March 2010
1	The principal amount and the interest due thereon (to be shown separately) remaining unpaid to any supplier as at the end of the accounting year (No amount is due for more than 45 days & Interest due ₹ Nil).	163.07	101.08
2	The amount of interest paid by the buyer in terms of Section 16 of the Micro Small and Medium Enterprise Development Act, 2006,alongwith the amounts of the payment made to the supplier beyond appointed day during the accounting year	Nil	Nil
3	The amount of interest due and payable for the period of delay in making payment (which have been paid but beyond the appointed day during the year) but without adding the interest specified under Micro Small and Medium Enterprise Development Act, 2006	Nil	Nil
4	The amount of interest accrued and remaining unpaid at the end of the accounting year	Nil	Nil
5	The amount of further interest remaining due and payable even in the succeeding years. Until such date when the interest dues as above are actually paid to the small enterprise for the purpose of Disallowance as a deductible expenditure under Section 23 of the Micro Small and Medium Enterprise Development Act, 2006	Nil	Nil

* To the extent information available with the corporation.

2.27 During the year Corporation has introduced Performance Linked Incentive Scheme (PLIS) with effective from 1st January 2009. The Employees Remuneration & Benefits includes ₹ 2281.47 Lac towards the additional liability on account of PLIS arrears for the period 1st January 2009 to 31st March 2010, which is accounted during the current year. This additional liability of ₹ 2281.47 Lac is net off ₹ 1229.63 Lac allocated to capital works and ₹ 117.89 Lac recoverable from DAE for the stated period. This additional liability for the earlier period accounted for during the year has resulted in reduction of the profit by ₹ 2281.47 Lac.

2.28 Heavy Water Lease Charges paid for EMCCR (Long Shut Down) period of the Projects shall be made part of the capital cost incurred for EMCCR for the purpose of fixation of revised tariff. Accordingly, the lease charges so paid are considered as recoverable.

2.29 Income tax demanded by Income Tax Department on levies collected from beneficiaries for Decommissioning, Renovation & Modernisation and Research & Development Fund and also on interest earned on respective fund investments is appropriated from the respective Fund. However the Corporation has disputed such demand before the appropriate Appellate Authority under Income Tax Act, 1961.

2.30 Advance Income tax of ₹18771.03 Lac (previous year ₹ 22036.72 Lac) is net of provisions made for Income tax ₹ 30974 Lac (previous year ₹ 39079.03 Lac).

2.31 In the opinion of the Management, the value on realisation of current assets, loans and advances in the ordinary course of business will not be less than the amount at which these are stated and provision for all known liabilities is adequate and not in excess than reasonably necessary. Letters seeking confirmation of balances have been sent to most of the parties which are either confirmed by them or are deemed to be confirmed due to non-response to the letters sent to them. In certain cases of creditors balance outstanding as per records of the parties was asked by the corporation, however responses are yet to be received from them.

2.32. Expenditure in foreign currency (on Payment Basis)

(₹ in Lac)

		2010–11	2009–10
i)	Project related payments including Kudankulam (KK) Project (Net of Tax)	6957.78	9661.39
ii)	Other matters (Traveling, subscription to books, periodicals, membership fee, etc)	541.77	576.62

2.33 Receipts in foreign currency

(₹ in Lac)

		2010–11	2009–10
i)	Guest House Receipt (at KK Project)	3.50	10.10

2.34. Managerial Remuneration Paid/ Payable to Managing Director & Whole Time Directors :

(₹ in Lac)

		2010–11	2009–10
i)	Salaries, Bonus and allowances	104.40	139.85
ii)	Contribution to Provident Fund/Pension	9.83	9.74
iii)	Others	2.45	0.00

2.35. Remuneration to Auditors

(₹ in Lac)

		2010–11	2009–10
i)	Audit Fees:		
	To Statutory Auditors	10.8	10.50 *
	To Branch Auditors	7.80	11.00 **
ii)	Tax Audit Fees		
	To Statutory Auditors	4.47	3.12
	To Branch Auditors	3.71	4.21
iii)	As expenses:		
	Paid to Statutory Auditors	3.87	4.98
	Paid to Branch Auditors	1.98	1.01
iv)	Certification Fees:		
	Paid to Statutory Auditors & Branch Auditors	1.90	1.43

* Including ₹ 1.50 Lac for the year 2008-09 approved during 2009-10

** Including ₹ 1.40 Lac for the year 2008-09 approved during 2009-10.

2.36 Licensed and Installed Capacities

		Nuclear Energy	Wind Energy
a)	Licensed capacity	Not applicable	Not applicable
b)	Installed capacity	4680 MW	10 MW
	(Commercial units)	(Previous year 4460 MW)	(Previous year 10 MW)

2.37 Quantitative information in respect of Generation and Sales of Electricity

Electricity		Nuclear Energy	Wind Energy
Generation	**2010–11**	**26,468.70**	**22.62**
(In Millions KWh)	2009–10	18,798.24	25.82
(Includes Pre–commercial)			
Sales	**2010–11**	**23,532.80**	**22.54**
(In Millions KWh)	2009–10	16,381.51	25.73
(Includes Pre–commercial)			
₹ in Lac	**2010–11**	**5,85,229.56**	**642.30**
	2009–10	3,79,935.47	746.29

2.38

(₹ in Lac)

	2010–11	2009–10
Value of Imports calculated on CIF basis	**76170.89**	73806.64

2.39 The break up between (i) Components and spare parts and (ii) Capital goods, being confidential in nature, has not been disclosed

2.40 The information regarding value of imported spare parts and components consumed and value of all indigenous spare parts and components consumed and percentage of each to the total consumption being confidential in nature, in the opinion of the management, has not been disclosed as per DAE Order No. AEA/18/i/89–ER/3345 dated 22nd November 1989.

2.41 Advances includes ₹ 6.50 Lac (Previous Year: ₹ 5.49 Lac) due from Directors and Officers with a maximum balance during the year of ₹ 7.89 Lac (Previous Year: ₹13.42 Lac).

2.42 Figures of previous year have been regrouped and rearranged wherever considered necessary to make them comparable with the current year's figures.

2.43 The amount in the Balance Sheet and Profit and Loss Account are rounded off to the nearest thousand and indicated in Lac of rupees

2.44 Schedules 1 to 16 to the Balance Sheet and Profit and Loss Account form an integral part of these Accounts

In terms of our Audit report of even date

For KALANI & COMPANY
Chartered Accountants
FRN. 000722C

(VIKAS GUPTA)
Partner
M. No. 077076

Place : Mumbai
Date : 10th May 2011

For and on Behalf of Board of Directors

NUCLEAR POWER CORPORATION OF INDIA LIMITED

(SRIKAR R. PAI)	**(J.K. GHAI)**	**(S.K. JAIN)**
Company Secretary	Director (Finance)	Chairman and Managing Director

STATEMENT PURSUANT OF PART IV OF SCHEDULE VI TO THE COMPANIES ACT, 1956

BALANCE SHEET ABSTRACT AND COMPANY'S GENERAL BUSINESS PROFILE

I Registration Details

Registration No.	U 4 0 1 0 4 M H 1 9 8 7 G O I 1 4 9 4 5 8		
State Code	1 1	Balance Sheet Date	3 1 (Date) 0 3 (Month) 2 0 1 1 (Year)

II Capital raised during the year

Public Issue	N I L	Rights Issue	N I L
Bonus Issue	N I L	Issued to Government	N I L
Private Placement			
Equity	N I L	Preference	N I L

III Position of Mobilisation and Deployment of Funds (Amount in Rs. Thousands)

Total Liabilities	4 1 8 9 3 9 8 8 3	Total Assets	4 1 8 9 3 9 8 8 3
Sources of Funds			
Paid - up Capital	1 0 1 4 5 3 3 2 7	Reserves and Surplus	1 3 8 3 9 2 6 3 8
Secured Loans	1 2 0 3 9 6 2 0 0	Unsecured Loans	5 8 6 9 7 7 1 8
Application of Funds			
Net Fixed Assets (including Capital Work in Progress)	2 9 5 8 6 6 0 3 2	Investments	2 2 8 9 6 0 9 0
Net Current Assets	9 6 3 2 0 7 3 7	Heavy Water Lease Charges Recoverable	3 8 5 7 0 2 4
Accumulated Losses	N I L	Misc. Expenditure	N I L

IV Performance of the Company (Amount in Rs. Thousands)

Turnover (Gross Revenue)	6 8 9 7 5 1 3 4	Total Expenditure	5 2 0 8 7 5 6 6
Profit/Loss Before Tax	+ 1 6 8 7 6 4 9 8	Profit/Loss After Tax	+ 1 3 7 6 3 2 5 7
Earning per Share (in ₹)	1 3 5 . 6 6	Dividend %	4 . 0 7

V Generic Principal Services of the Company(as per monetary terms)

Item Code No.	N I L
Product Description	G E N E R A T I O N O F P O W E R

For and on behalf of
KALANI & COMPANY
Chartered Accountants
FRN. 000722C

(VIKAS GUPTA)
Partner
M. No. 077076

Place : Mumbai
Date : 10th May 2011

For and on behalf of
NUCLEAR POWER CORPORATION OF INDIA LIMITED

(SRIKAR R. PAI)	**(J.K. GHAI)**	**(S.K. JAIN)**
Company Secretary	Director (Finance)	Chairman and Managing Director

CASH FLOW STATEMENT

FOR THE YEAR ENDED ON 31ST MARCH 2011

(₹ in Lac)

	PARTICULARS		2010-11		2009-10
A	**CASH FLOW FROM OPERATING ACTIVITIES**				
	Net Profit before Tax and Extraordinary Items		168764.98		47405.72
	Adjustments for :				
	Add: (a) Depreciation	86,765.18		72,107.60	
	(b) Prov. for Obsolete stock	(2.71)		185.98	
	(c) Prov. for Doubtful Debts	(43.04)		354.68	
	(d) Prov. for Doubtful Advances	(24.68)		(17.16)	
	(e) Prov. for Gratuity, Leave Encashment & PRMB	12,103.70		17,418.00	
	(f) Loss on Sale of Fixed Assets	11.35		141.86	
	(g) Prior Period Depreciation/Obsolence	327.77		1,518.12	
	(h) Interest Expense on Financing Activities	66,148.95	165,286.52	44,103.03	135,812.11
			334,051.50		183,217.83
	Less : (a) Prov. no longer required	1,230.53		466.98	
	(b) Profit on Sale of Fixed Assets	1.79		93.11	
	(c) Transfer from R & D	447.02		564.07	
	(d) Interest Income on Investing Activities	65,087.15	66,766.49	47,187.14	48,311.30
	Operating Profit before Working Capital Changes		267,285.01		134,906.53
	Adjustments for :				
	Decrease/(Increase) in Debtors	(64,051.71)		(47.67)	
	Decrease /(Increase) in Inventories	(380.83)		(1,231.55)	
	Decrease/(Increase) in Other Current Assets	16,179.48		(5,407.26)	
	Decrease/(Increase) in Loans & Advances	6,869.33		(3,501.41)	
	Increase/(Decrease) in Current Liabilities	78,819.79	37,436.06	40,919.24	30,731.35
	CASH GENERATED FROM OPERATION		304,721.07		165,637.88
	Less : Taxes Paid		26,500.00		7,420.50
	NET CASH FROM OPERATING ACTIVITIES		278,221.07		158,217.38
B	**CASH FLOW FROM INVESTING ACTIVITIES**				
	Purchase of Fixed Assets	(214,710.26)		(253,000.00)	
	Sale of Fixed Assets	1,074.51		4,020.15	
	Investments(Net)	14,747.69		41,802.61	
	Loan to JV Company	(30,000.00)		0.00	
	Interest on Investments	50,399.24		46,993.31	
	Interest on Earmarked Funds	8,995.61		8,312.45	
	Taxes paid on Earnmarked Funds	(2,700.00)		(1,957.00)	
	Levies	4,709.54		3,205.87	
	Capital Work in Progress & Advances	31,218.44		113,900.70	
	Heavy Water Lease charges Recoverable	2,639.70		(22,861.04)	
	NET CASH (USED IN) / FROM INVESTING ACTIVITIES		(133,625.53)		(59,582.95)
C	**CASH FLOW FROM FINANCING ACTIVITIES**				
	Proceeds from issue of Equity Share Capital	-		-	
	Interest paid on Borrowings	(86,061.36)		(38,453.68)	
	Loan from Banks and Russian credit (Sch 3 & 4)	(40,492.99)		(81,268.74)	
	Raising of bonds/Loan (Net of Repayment)	285,242.00		262,420.00	
	Interim Dividend for current year (including tax thereon)	(17,491.31)		(17,549.25)	
	Final Dividend paid for previous year (including tax thereon)	0.00		(3,788.91)	
	NET CASH (USED IN) / FROM FINANCING ACTIVITIES		141,196.34		121,359.42
	Net (Decrease)/Increase in Cash and Cash equivalents (A+B+C)		285,791.88		219,993.85
	Cash & Cash equivalents as at the commencement of the year		721,072.19		501,078.34
	Cash & Cash equivalents as at the close of the year		1,006,864.07		721,072.19

Cash & Cash equivalents consists of Cash & Cheques on hands, balances with Banks including for Earmarked Funds and Short term Investment.

Previous year figures have been regrouped/rearranged wherever found necessary.

In terms of our Audit Report on even date attached

For KALANI & COMPANY
Chartered Accountants
FRN. 000722C

(VIKAS GUPTA)
Partner
M. No. 077076

Place : Mumbai
Date : 10th May 2011

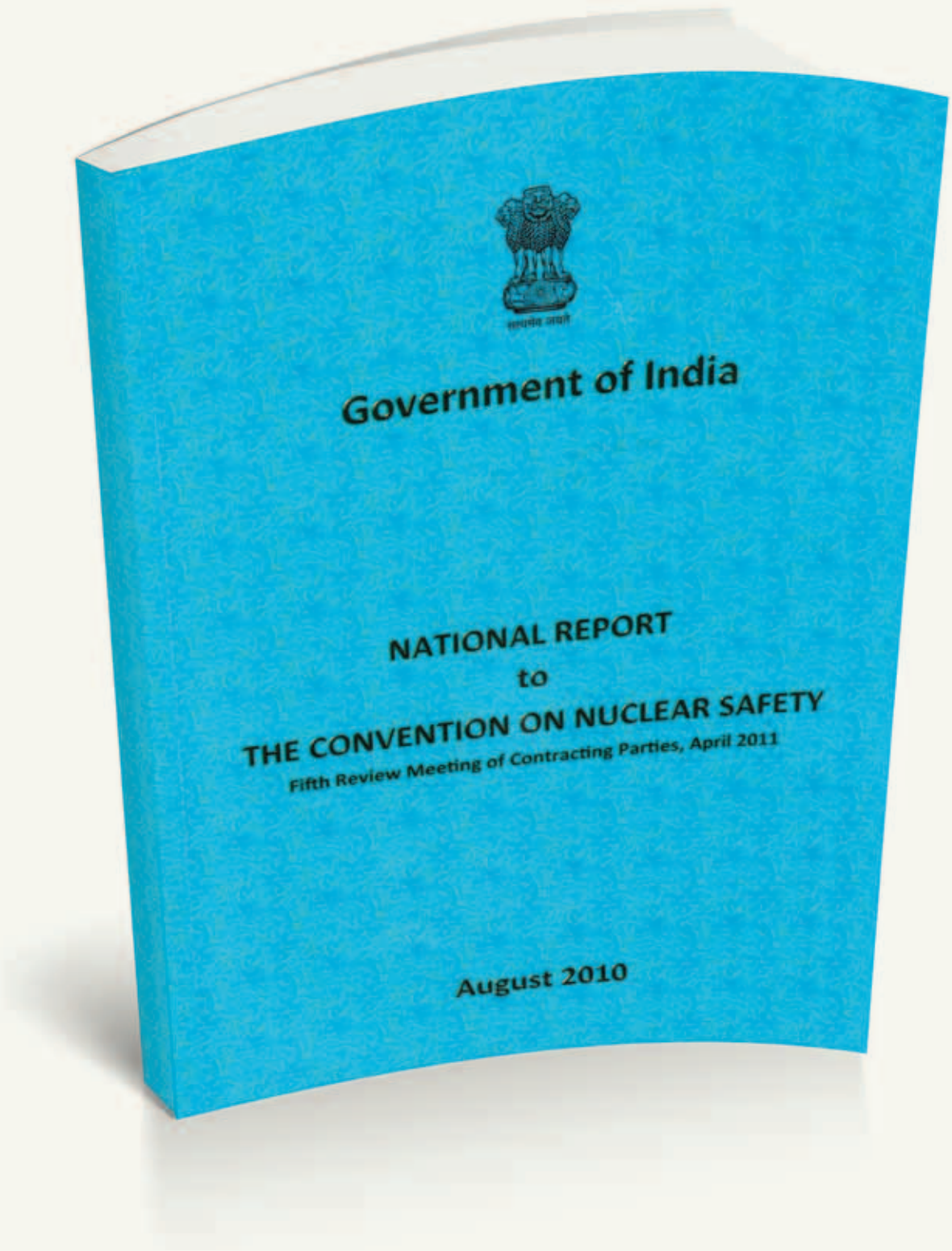
For and on behalf of
NUCLEAR POWER CORPORATION OF INDIA LIMITED

(SRIKAR R. PAI) Company Secretary

(J.K. GHAI) Director (Finance)

(S.K. JAIN) Chairman and Managing Director

NOTES



National Report to the Convention on Nuclear Safety

National Commitment to Nuclear Safety: Peer review by Contracting Parties to International Convention on Nuclear Safety

Inauguration of the Hall of Nuclear Power

Pictured above: *Hon'ble Kumari Selja, Union Minister of Culture, Housing and Urban Poverty Alleviation lighting the traditional lamp at the inauguration of the Hall of Nuclear Power in the presence of Hon'ble Prithviraj Chavan, Chief Minister, Maharashtra.*

Others from left to right: *Dr. Srikumar Banerjee, Chairman, Atomic Energy Commission and Secretary, Department of Atomic Energy; Shri G. S. Rautela, Director General, National Council of Science Museums; Dr. Shreyans Kumar Jain, Chairman & Managing Director, Nuclear Power Corporation of India Limited (NPCIL) and Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI); Shri Anil Manekar, Director, Nehru Science Centre, Mumbai.*

THE HALL OF NUCLEAR POWER - INDIA'S FIRST-EVER NUCLEAR GALLERY

NPCIL has organised India's first-ever permanent exhibition on nuclear power. The exhibition, Hall of Nuclear Power, was formally opened for the nation, at a function at Nehru Science Centre in Worli, Mumbai, by Kumari Selja, Union Minister of Culture, Housing and Urban Poverty Alleviation. The occasion was graced by the presence of Shri Prithviraj Chavan, Maharashtra Chief Minister, Dr. Srikumar Banerjee, Chairman, Atomic Energy Commission and Secretary, Department of Atomic Energy; Dr. Shreyans Kumar Jain, Chairman & Managing Director, Nuclear Power Corporation of India Limited (NPCIL) & Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI) and Shri G.S.Rautela, Director General, National Council of Science Museums.

The 'Hall of Nuclear Fame' is spread across an area of 7500 sq. ft. and provides extensive information about nuclear power generation, its basics, productions, fuel processing, transportation, safety, security, nuclear waste and its management.

A state-of-the art virtual tour of nuclear power plant is the major attraction of the gallery, which provides a hands-on experience to the visitors through touchscreen computer kiosks, video terminals, interactive exhibits and informative panels. The gallery also educates people about the non-power applications including nuclear medicines, food irradiation technology, etc.

Unveiling of the information brochures on the 'Hall of Nuclear Power'

Dignitaries being shown around the Hall of Nuclear Power at the Nehru Science Centre, Worli, Mumbai

Nuclear Power Corporation of India Limited
(A Government of India Enterprise)

Registered Office
16th Floor, Centre - I, World Trade Centre,
Cuffe Parade, Colaba, Mumbai - 400 005, India.

www.npcil.nic.in

concept and design at Atherstone (info@aicl.in)
print@parksonsgraphics.com