1 STANDING COMMITTEE ON ENERGY (1999-2000) THIRTEENTH LOK SABHA

DEPARTMENT OF ATOMIC ENERGY

DEMANDS FOR GRANTS
(2000-2001)

FIRST REPORT

Presented to Lok Sabha on 18th April, 2000
Laid in Rajya Sabha on 18th April, 2000

LOK SABHA SECRETARIAT
NEW DELHI
April, 2000/Chaitra, 1922 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE
ON ENERGY (1999-2000)

Shri Sontosh Mohan Dev – Chairman

MEMBERS

LOK SABHA

2. Shri Basudeb Acharia
3. Shri Prasanna Acharya
4. Shri Prakash Yashwant Ambedkar
5. Shri Rajbhar Babban
6. Shri Vijayendra Pal Singh Badnore
7. Shri Jagmeet Singh Brar
8. Shri Lal Muni Chaubey
9. Shri A.B.A. Ghani Khan Choudhury
10. Shri Bikash Chowdhury
11. Shri M. Durai
12. Shri Sanat Kumar Mandal
13. Shri K. Muraleedharan
14. Shri Amar Roy Pradhan
15. Shri Ravindra Kumar Pandey
16. Shri Dalpat Singh Parste
17. Shri B.V.N. Reddy
18. Shri Chada Suresh Reddy
19. Shri B. Satyanarayana
20. Shri Harpal Singh Sathi
21. Shri C.K. Jaffer Sharief
22. Shri Chandra Pratap Singh
23. Shri Tilakdhari Prasad Singh
24. Shri Manoj Sinha
25. Shri Ramji Lal Suman
26. Prof. Ummareddy Venkateswarlu
27 Shri P.R. Khunte

*28. Shri Girdhari Lal Bhargava
*29. Shri Trilochan Kanungo

RAJYA SABHA

30. Shri Lakhiram Agarwal
#31. Shri Jalaludin Ansari
32. Shri Gandhi Azad
33. Shri E. Balanandan
34. Shri Brahamkumar Bhatt
35. Shri Dara Singh Chauhan
36. Shri Manohar Kant Dhyani
37. Shri Aimaduddin Ahmad Khan (Durru)
#38. Dr. Alladi P. Rajkumar
39. Shri Ananta Sethi
40. Dr. Akhtar Hasan Rizvi
41. Shri Vedprakash P. Goyal
42. Shri Rama Shanker Kaushik
43. Shri Santosh Bagrodia

SECRETARIAT

1.	Dr. A.K. Pandey	-	Additional Secretary
2.	Shri John Joseph	-	Joint Secretary
3.	Shri P.K. Bhandari	-	Deputy Secretary
4.	Shri R. S. Kambo	-	Under Secretary
5.	Shri P.C.Tripathy	-	Committee Officer

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* Nominated to the Committee w.e.f. 6th April, 2000.
\# Ceased to be Member of the Committee w.e.f. 2nd April, 2000, consequent upon their retirement from Rajya Sabha.

INTRODUCTION

I, the Chairman Standing Committee on Energy, having been authorised by the Committee to present the Report on their behalf, present this First Report (Thirteenth Lok Sabha) on Demands for Grants (2000-2001) relating to the Department of Atomic Energy.

2. The Committee took evidence of the representatives of the Department of Atomic Energy on 29th March, 2000.

3. The Committee wish to thank the representatives of the Department of Atomic Energy who appeared before the Committee and placed their considered views. They also wish to thank the Department for furnishing the replies on the points raised by the Committee.

4. The Report was considered and adopted by the Committee at their sitting held on 11th April, 2000.

NEW DELHI;
11 April, 2000
22 Chaitra, 1922 (Saka)

SONTOSH MOHAN DEV,
Chairman,
Standing Committee on Energy.

PART – I

REPORT

CHAPTER-I

Introductory

The Atomic Energy Commission (AEC) was created by a Government Resolution in 1948. It is the apex body for formulation of policies and direction of the programmes relating to peaceful uses of Atomic Energy in electricity generation, medicine, agriculture and industry. The Commission implements its policies and programmes through the Department of Atomic Energy (DAE).

1.2 The main mandate of the Department of Atomic Energy is the production of safe and economical nuclear power, using indigenous uranium and thorium resources. Towards this end, it is involved in developing in stages, pressurised heavy water reactors, fast breeder reactors and advanced thorium reactors with associated fuel cycle systems.

1.3 The Atomic Energy Programme of the Department comprises three sectors viz. Nuclear Power Sector, Industries & Minerals Sector and Research & Development Sector.

1.4 The Nuclear Power Sector deals with the generation of electricity on commercial basis. It covers design, construction, commissioning and operation of pressurised heavy water reactors, fast breeder reactors and thorium reactors with associated safety aspects, on commercial scale as well as technology development monitoring and operation & maintenance of the reactors.

1.5 The Industries & Minerals Sector covers the programmes relating to the industrial units carrying out nuclear fuel cycle activities and industrial application of nuclear energy in non- electricity fields. The nuclear fuel cycle programme covers industrial activities which are ancillary to the Nuclear Power Sector and comprises design, construction and operation of industrial plants for ore refining, fuel fabrication, heavy water production etc. The programme relating to the industrial applications of nuclear energy in the non-electricity fields addresses applications of radioisotope, laser and accelerator technologies in medicine, food preservation, agriculture, industry and other such areas.

1.6 The Research & Development Sector includes research support for nuclear power programme as well as research and development in non-electricity areas. It covers reactor technology and nuclear fuel cycle technology; radioisotope technology with applications in medicine, agriculture, industry

and research; advanced technologies relating to accelerator, laser, computers, materials etc.; and basic and applied research in frontier areas of science and technology.

1.7 The observations of the Committee on the basis of the scrutiny of Demands for Grants of the Department of Atomic Energy for the year 2000- 2001 are brought out in the succeeding chapter.

CHAPTER - II

ANALYSIS OF DEMANDS FOR GRANTS AND PLAN BUDGET OF THE DEPARTMENT OF ATOMIC ENERGY

The following two Demands for Grants have been submitted to Parliament by the Department of Atomic Energy (DAE) for the year 2000-01:-

Demand No.90 - Atomic Energy

Relating to Revenue and Capital Expenditure on Atomic Energy Research and Development, Industrial Projects and the Secretariat of the Department	Rs.2412.65 crore

Demand No.91 - Nuclear Power Schemes

Relating to Revenue and Capital Expenditure on Nuclear Power Generation and Ancillary Schemes	Rs.2530.34 crore

2.2 The two Demands aggregating to Rs.4942.99 crore comprise Rs. 1554.00 crore for Plan schemes and Rs.3398.99 crore for Non-Plan expenditure. In addition, Plan schemes to the extent of Rs.493.06 crore are to be met from Internal and Extra Budgetary Resources (IEBR).

2.3 The details of actual revenue and capital expenditure for the year 1998-99, the Budget and Revised Estimates for 1999-2000 and Budget Estimates for 2000-01 of the Department are given in the Appendix.

A. Budgetary Allocation

2.4 The Budget Estimates (BE) and Actuals for the year 1998-99, Budget Estimates (BE) and Revised Estimates (RE) for the year 1999-2000 and BE for the year 2000-01 in respect of Department of Atomic Energy are as under:-

2.5 From the above data, it is seen that the actual expenditure incurred by the Department of Atomic Energy (DAE) out of the budgetary support component was Rs. 3793.42 crore as against the budgetary allocation of

SECTOR-WISE DISTRIBUTION OF FUNDS

(Rs. in crore)

Sector	BE 1998-99			Actuals 1998-99			BE 1999-2000			RE 1999-2000			BE 2000-2001		
	Plan	N-Plan	Total	Plan	N-Plan	Total	Plan	N-Plan	Total	Plan	N-Plan	Total	Plan	N-Plan	Total
Power															
Budgetary Support	931.00	128.28	2149.28	795.12	1197.33	1992.45	950.00	1435.37	2385.37	885.30	1435.37	2320.67	894.00	1636.34	2530.34
I.E.B.R.	139.00	-	139.00	59.13	-	159.13	384.00	-	384.00	171.00	-	171.00	438.00	-	438.00
I&M															
Budgetary Support	160.00	837.93	997.93	125.13	870.50	995.63	225.00	987.59	1212.59	143.39	1003.65	1147.04	240.00	1095.15	1335.15
I.E.B.R.	39.00	-	39.00	10.75	-	10.75	67.00	-	67.00	31.28	-	31.28	55.06	-	55.06
R&D	300.00	545.66	845.66	243.08	562.26	805.34	325.00	595.42	920.42	334.83	623.85	958.85	420.00	657.50	1077.50
Budgetary Support	1391.00	2601.87	3992.87	1163.33	2630.09	3793.42	1500.00	3018.38	4518.38	1363.52	3062.87	4426.39	1554.00	3388.99	4942.99
I.E.B.R.	178.09	0.00	178.00	69.88	0.00	69.88	451.00	0.00	451.00	202.28	0.00	202.28	493.06	0.00	493.06
Total	**1569.00**	**2601.87**	**4170.87**	**1233.21**	**2603.09**	**3863.30**	**1951.00**	**3018.38**	**4969.38**	**1565.80**	**3062.87**	**4628.67**	**2047.06**	**3388.99**	**5436.05**

BS - Budgetary Support
IEBR - Internal and Extra Budgetary Support
I&M - Industries and Minerals
R&D - Research and Development

Rs.3992.87 crore during 1998-99. Thus, there has been expenditure amounting to Rs.199.45 crore. huge shortfall in

2.6 Shortfall in expenditure incurred by DAE out of the budgetary support component during the year in various Sectors has been as under:-

Power Sector -Rs. 156.83 crore	(Rs.2149.28 crore – Rs. 1992.45 crore)
I& M Sector -Rs. 2.30 crore	(Rs. 997.93 crore - Rs. 995.63 crore)
R & D Sector - Rs. 40.32 crore	(Rs. 845.66 crore – Rs, 805.34 crore)

2.7 When asked to give reasons for shortfall in expenditure Department of Atomic Energy in a written reply stated as under:-

> "The shortfall in expenditure during 1998-99 against the Budget Estimates works out to Rs. 199.45 crore, of which the major portion is attributable to the Power Sector. The shortfall of Rs. 13 5 crore in the power sector is mainly on account of the time taken for establishment of technical procedure with regard to release of payment of Russian credit to Ministry of Finance and thereafter to Russian bank. This relates to the preparation of Detailed Project Report (DPR) for construction of 2x1000 MWe nuclear power stations proposed to be set up at Kudankulam in Tamil Nadu".

2.8 Delay in procurement of machinery and equipment, time taken for formulating and sanctioning new IX Plan projects and suspension of operation of the Heavy Water Plant (HWP) at Baroda owing to change of operating technology at the fertilizer plant to which the HWP is linked, are some of the main reasons for lower expenditure under Research & Development and Industries & Minerals Sectors.

2.9 Plan expenditure (budgetary support + IEBR) during 1998-99 has been short of Plan BE by as much as Rs. 335.79 crore (Rs. 1569 crore - Rs. 1233.21 crore).

2.10 Asked to specify the reasons for delay in procurement of machinery and equipment, CMD (NPCIL) stated during evidence as under:

> "There are certain companies which might be able to deliver it in time. The type of quality we require, they take a little bit of longer time. So, at the initial stage it will take some time for the activities. But, now the manufacturers have come to a stage where they are delivering in time".

2.11 Plan expenditure in the budgetary support component during she year has been short of the Plan budgetary allocation in all the three Sectors. This shortfall amounts to Rs. 997.67 crore (Rs. 1391 crore - Rs. 1163.33 crore). The shortfall in various Sectors has been as under:

Power Sector - Rs. 135.88 crore (Rs.931 crore - Rs. 795 2 crore)

I & M Sector - Rs. 34.87 crore (Rs. 160 crore - Rs. 125.13 crore)

R & D Sector - Rs. 56.92 crore (Rs. 300 crore - Rs. 243.08 crore)

2.12 When asked to specify reasons for shortfall in Plan expenditure in the Power Sector during 1998-99, the Department in a written reply furnished the following data:-

"Shortfall of about Rs. 92 crore was in case of Kudankularn DPR work which was due to the delay in establishment of technical procedure with regard to the release of payments of Russian State Credit through the Ministry of Finance to Russian Bank. Entire Russian Credit of Rs. 111 crore could not be utilised even though the payment of advance for the DPR work of Rs. 28 crore as against Rs. 9 crore budgeted had been released. In case of TAPP 3&4, shortfall in expenditure of about Rs.50 crore was due to the delay in reactivating the order with the Bharat Heavy Electricals Limited (BHEL) for Turbine Generator which was part of the advance procurement action earlier kept under hold.

In case of Kaiga 1 & 2, in addition to the redemption of bonds amounting to about Rs. 229 crore on their maturity, bonds amounting to about Rs. 131 crore were redeemed by exercising call option and replaced with fresh bonds bearing lower interest rates which has resulted in lower interest outgo by about Rs. 40 crore."

2.13 Regarding shortfall in expenditure in the I&M and R&D Sectors, the Department have advanced the following reasons:

"The shortfall in expenditure during 1998-99 occurred as a result of difficulties encountered in the finalisation of manufacturers/vendors for some high value and critical machinery and equipment, and the time taken for technology development work which has to evolve over a period of time."

2.14 There have been wide variations in the BE and RE during the year 1999-2000. Total RE amount is short of the total BE by Rs. 340.71 crore (Rs. 4969.38 crore - Rs. 4628.67 crore).

2.15 There have also been huge variations between Plan BE and Plan RE (budgetary support component) during the year 1999-2000 in the Power and I&M Sectors. Plan BE of Rs. 950 crore has been scaled down to Rs. 885.30 crore at RE stage in the Power Sector (reduction of Rs. 64.70 crore). Similarly, in the I&M Sector, Plan BE of Rs. 225 crore has been reduced to Rs. 143.39 crore at RE stage (reduction of Rs. 81.61 crore).

2.16 When asked to furnish reasons for variations between Plan BE and Plan RE in the Power and I&M Sectors during 1999-2000, the Department in a written reply cited the following reasons:

> "In the Power Sector, the delay in establishment of technical procedure with regard to release of payment of Russian credit in connection with preparation of the Detailed Project Report for Kudankulam Atomic Power Project has resulted in reduction in budgetary provisions. In the I&M Sector, the reasons for the reduction in provisions in the RE stage include (a) rescheduling of the Zirconium Oxide - Titanium Sponge Project of the Nuclear Fuel Complex due to technical reasons, (b) reduction in the financial assistance to Uranium Corporation of India Limited due to difficulties encountered in the import of high value equipment for the 111 Stage Shaft Project at Jaduguda Mines, and (c) delay in the finalisation of joint venture Projects of Indian Rare Earths Limited. The reduction in provision under the Cobalt-60 Facility at RAPPCOF and National Medical Cyclotron Facility under the aegis of Board of Radiation and Isotope Technology, owing to difficulties of implementation, have also contributed to the variations."

2.17 The shortfall in the utilisation of Internal and Extra Budgetary Resources (IEBR) by the Department during 1998-99 was to the tune of Rs. 108.12 crore (Rs. 178 crore - Rs.69.88 crore). While the shortfall in utilisation of IEBR in the Power Sector was Rs.79.87 crore (Rs. 139 crore - Rs.59.13 crore), the shortfall in the I&M sector was Rs.28.25 crore (Rs.39 crore - Rs.10.75 crore).

2.18 In regard to shortfall in the utilisation of IEBR in the Power Sector during 1998-99, the Department have in a written reply stated as under:

> "The approved IEBR for NPCIL for the Year 1998-1999 (net of repayments of past borrowings) was targeted at Rs. 139 crore. During the year 1998-99, the actual realisation of IEBR was at Rs.425 crore. As against this, the actual IEBR utilised was Rs. 59.13 crore .....".

2.19 Regarding the shortfall in utilisation of IEBR in the I&M Sector during the year, the Department have furnished the following data:

"There are three Public Sector Undertakings (PSUs) viz. the Indian Rare Earths Limited (IREL), the Uranium Corporation *of* India Limited (UCIL) and the Electronics Corporation of India Limited (ECIL) in the I&M sector of this Department. The position relating to IEBR in respect *of* these undertakings is given below:

(i) Targets set for generation of IEBR by the PSUs under DAE are as under:

(Rs. in crore)

Name of PSU	Targeted IEBR				
	1998-99		1999-2000		2000-2001
	BE	RE	BE	RE	BE
IREL	27	27	41	31.28	55.06
UCIL	0	0	0	0	0
ECIL	12	12	26	0	0

(ii) IREL utilised IEBR to the extent *of* Rs.10.75 crore during 1998-99 as against the target *of* Rs.27 crore set for the year. Though the company was actually in a position to generate the targeted IEBR, actual utilisation was lower during the year due to unforeseen delays in procurement *of* imported machinery and equipment. There was also some delay in implementation *of* the project *for* expansion *of* mining of beach sands at Chavara, Kerala on account *of* resistance *of* local persons to acquisition *of* additional land. It is expected that with the gradual resolution of these problems, the implementation of these projects will be speedier and the actual utilisation *of* IEBR during 1999-2000 and 2000-01 will be better.

(iii) UCIL was not anticipated to generate IEBR *for* financing Plan projects during 1998-99 or 1999-2000 and, accordingly, no targets were set *for* this company. The continuing Plan projects *of* the company are being financed with full budgetary support.

(iv) ECIL could not generate any IEBR during 1998-99 due, *inter-alia,* to the extra ordinary procurement problems faced by the company in that year and large loss. In view *of* the difficulties being faced by the company, no targets have been set *for* IEBR generation during 1999-2000 and 2000-2001."

2.20 Under Major Heads 4801, 5401 and 4861, BE and actual expenditure for the year 1998-99, BE and RE for the year 1999-2000 and BE for the year 2000-01 have been as under:

(Rs. in crore)

Major Head	BE 1998-99		Actuals 1998-99		BE 1999-2000		RE 1999-2000		BE 2000-2001	
	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan
4801	820.00	-	795.54	-	848.00	-	826.30	-	731.00	-
5401	174.40	-	127.90	-	200.52	-	201.90	-	270.90	-
4861	138.00	408.21	103.12	436.61	203.73	439.72	122.12	441.31	230.68	469.68

2.21 It is observed from the above data that under Major Heads 4801 (relating to capital expenditure on Plan schemes covered under Power Sector and comprising items like Investments in Power Projects and Fast Breeder Test Reactor), 5401 (relating to capital expenditure on Plan schemes covered under R&D Sector and comprising items Bhabha Atomic Research Centre, Indira Gandhi Centre for Atomic Research, Variable Energy Cyclotron Centre and Centre for Advanced Technology) and 4861 (relating to capital expenditure on Plan schemes of I&M Sector and N on-Plan requirement for operational expenses of Heavy Water Plants and comprising items like Bhabha Atomic Research Centre, Nuclear Fuel Complex, Heavy Water Board, Fuel Reprocessing Industry and Extension Programme) Plan expenditure has been short of Plan BE during 1998-99.

2.22 Under Major Head 4801, Plan expenditure during 1998-99 has been short of Plan BE by Rs. 24.46 crore (Rs. 820 crore - Rs. 795.54 crore). Further, Plan BE of Rs. 848 crore during 1999- 2000 has been reduced to Rs. 826.30 crore at RE stage (reduction of Rs. 21.70 crore).

2.23 Under Major Head 5401, Plan expenditure during 1998-99 has fallen short of Plan BE by Rs. 46.50 crore (Rs. 174.40 crore - Rs. 127.90 crore). Again, Plan BE of Rs. 200.52 crore during 1999- 2000 has been enhanced to Rs. 201.90 crore at RE stage (marginal increase of Rs. 1.38 crore).

2.24 Under Major Head 4861, Plan expenditure during 1998-99 has fallen short of Plan BE by Rs. 34.88 crore (Rs. 138 crore - Rs. 103.12 crore). Besides, Plan BE of Rs. 203.73 crore during 1999-2000 has been scaled down to Rs. 122.12 crore at RE stage (reduction of Rs. 81.61 crore).

2.25 When asked to give reasons for variations between Plan expenditure and Plan BE under Major Heads 4801, 5401 and 4861 during 1998-99, the Department cited the following reasons:

Major Head 4801

"The provision relating to capital expenditure on Plan schemes covered under Power Sector is provided under this major head. The shortfall of Rs.20.46 crore in the Bhabha Atomic Research Centre (BARC) is on account of difficulty in importing of helium refrigeration unit required for additional upgrading facility of new power plant and machineries for High tech facility. In the case of the Indira Gandhi Centre for Atomic Research (IGCAR) the shortfall of Rs. 4 crore is on account of non-completion of supply of equipment by the Bharat Heavy Electricals Limited (BHEL) and the Larsen & Toubro (L&T) for the Prototype Fast Breeder Reactor (PFBR) Project".

Major Head 5401

"The provision relating to Capital expenditure on the Plan schemes covered under R&D Sector is provided under this major head. The shortfall of Rs. 46.50 crore during 98-99 is on account of the projects of the following Units:

Bhabha Atomic Research Centre (BARC)	Rs. 15.43 crore
Indira Gandhi Centre for Atomic Research (IGCAR)	Rs. 6.73 crore
Variable Energy Cyclotron Centre (VECC)	Rs. 6.49 crore
Department of Atomic Energy (DAE) Projects	Rs.4.07 crore
Directorate of Construction Services and Estate Management (DCS&EM)	Rs. 9.03 crore

The shortfalls is attributable to the following reasons:

(a) Non -receipt of machinery & equipment and supplies and materials and the resultant delay in the work in progress;

(b) Non-receipt of items for Cyclotron Project and networking of DAI Anunet project due to change over of technology;

(c) In IGCAR, the projects of Reactor Engineering, Radio-chemistry, Fuel Reprocessing, etc. had a setback on account of delay in procurement of machinery and equipment, and of software upgradation."

Major Head 4861

"The provisions relating to Capital expenditure on the Plan schemes of I&M Sector and Non-Plan requirement for operational expenses of Heavy Water Plants are made under this Major Head.

The shortfall in Plan expenditure is on account of the following Units /PSUs:

Bhabha Atomic Research Centre (BARC)	Rs. 5.65 crore
Indira Gandhi Centre for Atomic Research (IGCAR)	Rs. 4.63 crore
Nuclear Fuel Complex (NFC)	Rs. 6.33 crore
Board of Radiation and Isotope Technology(BRIT)	Rs. 5.50 crore
Uranium Corporation of India Limited (UCIL)	Rs. 12.25 crore

The reasons for the shortfall are as under:

(a) Slow progress of infrastructure facilities at Tarapur

(b) Non-receipt of financial sanction for New High Flux Research Reactor - Phase I

(c) Delay in receipt of material for Desalination Plant

(d) Fuel Reprocessing for the Fast Breeder Test Reactor (FBTR), the Indira Gandhi Centre for Atomic Research (IGCAR) - Delay in procurement of machinery, equipment and civil works

(e) Delay in receipt of machinery and equipment for New Zircalloy Fabrication Plant and time taken for development work relating to Modernisation and Replacement Scheme for existing Plant of the Nuclear Fuel Complex

(f) Delay in finalisation of works contract by the Board of Radiation & Isotope Technology (BRIT)

(g) Reduction in financial assistance to the Uranium Corporation of India Limited (UCIL) owing to unexpected difficulty in importing some high value items."

2.26 Regarding reduction of Plan BE at RE stage under Major Heads 4801 and 4861 during 1999-2000, the Department have cited the following reasons:

Major Head 4801

"The reasons for reduction of Rs.21.70 crore in RE 1999-2000 under this major head is on account of reduction in the plan provision of BARC (Rs.16.50 crore) and ICCAR (Rs.5.20 crore) based on the mid-term review of the Plan activities ancillary to power programme in respect of the following schemes:

(a) Fuel Reprocessing and Nuclear Waste Management

(b) PFBR engineering Design and Development

(c) Materials and Chemicals Technology"

Major Head 4861

"The reduction of provision at RE indicated below:

Bhabha Atomic Research Centre (BARC)	Rs. 38 crore
Indira Gandhi Centre for Atomic Research (IGCAR)	Rs. 6 crore
Nuclear Fuel Complex: (NFC)	Rs. 9.25 crore
Board of Radiation and Isotope Technology(BRIT)	Rs. 6.93 crore
Indian Rare Earths Limited (IREL)	Rs. 4 crore
Uranium Corporation of India Limited (UCIL)	Rs. 13 crore

The reasons for reductions are given below:

(a) Waste Treatment Facilities at Tarapur – result of mid-term review

(b) Fuel Reprocessing of FBTR - Restrictions of commitments awaiting revised sanctions

(c) Rescheduling of Zirconium Oxide - Titanium Sponge Project of NFC

(d) Review of the National Medical Cyclotron Facility of BRIT and procurement difficulties on its project for Augmentation of Cobalt-60 Facility

(e) IREL - Delay in finalisation of joint venture project

(f) Deferment of equity support to UCIL as a result of procurement of high value items under its Ill Stage Shaft Project at Jaduguda."

2.27 The Committee are distressed to note that the Department of Atomic Energy have been unable to utilise as much as Rs. 199.45 crore out of the budgetary support component amounting to Rs. 3992.87 crore during 1998-99. The budgetary support component for Industries & Minerals (I&M), Power and Research & Development (R&D) Sectors was Rs. 997.93 crore, Rs. 2149.28 crore and Rs. 845.66 crore respectively. While there has been a marginal shortfall in expenditure in the Industries & Minerals (I&M) Sector amounting to Rs. 2.30 crore, the Power and Research & Development (R&D) Sectors have registered a shortfall of Rs. 156.83 crore and Rs. 40.32 crore respectively. More distressing is the fact that the Plan expenditure in the budgetary support component during 1998-99 has been short of the Plan budgetary allocation by as much as Rs. 227.67 crore. All the three Sectors of the Department - Power, I&M and R&D - have registered shortfalls in the Plan expenditure out of the budgetary support component during the year. While this shortfall has been more pronounced in the Power Sector with 135.88 crore, the shortfalls in the I&M and R&D Sectors have been to the tune of Rs. 34.87 crore and Rs. 56.92 crore respectively. The reasons advanced by the Department for shortfalls, such as delay in procurement of machinery and equipment, time taken for formulating and sanctioning new IX Plan projects, suspension of operation of the Heavy Water Plant at Baroda, etc. are hardly convincing and clearly showing a lack of foresight on the part of the Department. The Committee are concerned to note that while the Department have been clamouring for more and more budgetary support, they have failed to utilise fully the allocated amount for one reason or the other. The Committee apprehend that actual expenditure during the years 1999-2000 and 2000-01 may fall short of allocation since the Plan schemes are yet to be sanctioned. The Committee, therefore recommend that the Department should review and strengthen the budgetary mechanism so as to ensure utilisation of the allocated amount to the extent possible.

2.28 The Committee are dismayed to note that there are wide variations between the Budget Estimates (BE) and the Revised Estimates (RE) pertaining to the year 1999-2000. Total BE amount of Rs.4969.38 crore

for 1999-2000 has been reduced to Rs.4628.67 crore at RE stage. Again, there have been huge variations between the Plan BE and Plan RE in the budgetary support component in the Power and I&M Sectors during 1999- 2000. While Plan BE of Rs.950 crore in the Power Sector was reduced to Rs.885.30 crore at RE stage, in the I&M Sector the Plan BE of Rs.225 crore was scaled down to Rs.143.39 crore at RE stage. The reduction in the Power Sector has been attributed to the delay in establishment of technical procedure with regard to release of payment of Russian credit in connection with preparation of the Detailed Project Report (DPR) for the Kudankulam Atomic Power Project as the entire Russian credit of Rs. 111 crore could no be utilised even though the payment of advance for DPR work of Rs. 28 crore, as against Rs. 9 crore budgeted had been released. The reduction in the I&M Sector has been attributed to the rescheduling of the Zirconium Oxide-Titanium Sponge Project due to technical reasons, reduction in the financial assistance to the Uranium Corporation of India Limited (UCIL) for the 111 Stage Shaft Project at Jaduguda Mines, delay in th finalisation of joint venture projects of the Indian Rare Earths Limited (IREL), etc. The Committee find it hard to believe that the huge reduction at RE stage was mostly because of the administrative reasons stated above. Rather, they feel that this is indicative of poor planning and budgeting on the part of the Department for which corrective action is imperative. The Committee apprehend that with the mismanagement of expenditure on Plan schemes, the realisation of 20,000 MWe by 2020 through nuclear power will remain a distant dream. The Committee recommend that the Department should make accurate and realistic budget estimates in future after making an in- depth analysis of each and every scheme.

2.29 The Committee are also unhappy to note that as against a target of Rs 178 crore, the actual utilisation of Internal and Extra Budgetary Resources (IEBR) during the year 1998- 99 has been a meagre Rs.69.88 crore. Thus there has been a shortfall of Rs.108.12 crore. The share of the Power and I&M Sectors in the shortfall has been to the extent of Rs.79.87 crore and Rs.28.25 crore respectively. The Committee note that the Nuclear Power Corporation of India Limited (NPCIL) has utilised an IEBR amount of Rs.59.13 crore as against the target of Rs.139 crore during 1998-99. Similarly, IEBR amounting to Rs.10.75 crore has been utilised by the Indian Rare Earths Limited (IREL) as against the target of Rs.27 crore. The Electronics Corporation of India Limited (ECIL) could not generate any IEBR since 1997-98 even though a target of Rs.150 crore was set for the entire duration of Ninth Plan in this regard, owing to extra-ordinary procurement problems and huge losses. The performance of the Uranium Corporation of India Limited (UCIL) in mobilizing IEBR is also dismal, as it has not been able to

generate any IEBR since 1997-98 as against a target of Rs. 50 crore for the Ninth Plan period. The Committee do not appreciate the fixation of unrealistic IEBR targets year after year. It is understood that the capacity of the Department to raise resources from the International market is bleak and their position of internal, accruals not too healthy. Therefore, it would be prudent on the part of the Department to set IEBR targets at realistic/ achievable levels. The Committee have recommended to this effect a number of times in the past. They reiterate the same, expecting the Department to wake up to the reality and take corrective action in this direction.

2.30 The Committee are dismayed to note that under Major Heads 4801 (relating to Capital expenditure on Plan schemes covered under Power Sector), 5401 (relating to Capital expenditure on Plan schemes covered under R&D Sector) and 4861 (relating to Capital expenditure on Plan schemes of I&M Sector and Non-Plan requirement for operational expenses of Heavy Water Plants), Plan expenditure during 1998-99 has been short of Plan BE by Rs.24.46 crore, Rs.46.50 crore and Rs.34.88 crore respectively. The reasons for shortfall under Major Head 4801 have been cited as difficulty in importing the helium refrigeration unit required for additional upgrading facility of new power plant and non-completion of supply of equipment by the Bharat Heavy Electricals Limited (BHEL) and Larsen and Toubro (L&T) for the Prototype Fast Breeder Reactor (PFBR) Project. Similarly, the shortfall under Major Head 5401 has been attributed to non- receipt/delay in procurement of machinery and equipment for various projects. As regards Major Head 4861, the shortfall in Plan expenditure during 1998-99 has been stated to be due to slow progress of infrastructure facilities, non-receipt financial sanction, delay in procurement of machinery and equipment, delay in finalisation of work and reduction in financial assistance to the Uranium Corporation of India Limited (UCIL) following unexpected difficulty in importing some high value items. The Committee are of the view that the reasons cited above for shortfall in expenditure clearly point to nothing but administrative slackness on the part of the Department. The Committee note that consequent upon mid-term review of Ninth Plan, there has been major reduction in Plan activities under Major Heads 4801 and 4861. The Committee while recommending that the Department should not only make an in-depth analysis of the various factors attributed to the shortfall in expenditure but also desire that action should be taken against those vendors who were responsible for delayed/ inadequate supplies of equipment and machinery. Wherever possible, a penalty clause should be incorporated in the tender/agreement documents so as to ward off any delay and inadequate supply of critical equipment

and machinery. Other appropriate remedial measures should also be taken to cheek such problems for their future programmes.

B. Nuclear Fuel Complex (NFC)

2.31 The Nuclear Fuel Complex(NFC) at Hyderabad has been established to provide fuel and zircaloy products required for generation of nuclear power by various Power reactors. Fabrication of enriched uranium fuel for the Boiling Water Reactors (BWRs) at Tarapur and the thorium oxide blankets for the Fast Breeder Reactor (FBTR) at Kalpakkam is also carried out at NFC. The operating plants of NFC include production of ceramic grade uranium oxide, zircaloy components, sintered pellets and fuel assemblies.

2.32 Plan Budgetary allocation made to the Nuclear Fuel Complex during 1996-97, 1997-98 and 1998-99 and the actual expenditure incurred by the organisation during the above period alongwith reasons for variations are given in the following table:

(Rs. in crore)

Year	Budget allocation	Actual Expenditure	Variation (+) Excess (-) Savings	Reasons for variations
1996-97	53	47.07	(-)5.93	Due to delay in Indenting, payment for certain items of equipment did not materialise.
1997-98	22.00	19.18	(-) 2.82	Payment of erection and commissioning charges for certain equipment, though supplied during the year, spilled over to subsequent year.
1998-99	12.00	5.68	(-) 6.32	Due to delay in delivery of certain equipment.

2.33 The provisions made in Budget Estimates (BE), Revised Estimates (RE) for the year 1999-2000 and Budget Estimates (BE) for 2000-01 in respect

of NFC are as under:

(Rs. in crore)

Year	BE	RE	Reasons for variation between BE & RE 1999-2000
1999-2000	15.00	5.75	(i) A hold on implementation of the titanium sponge plant at Palayakayal, pending a further review on the scope of the project. (ii) Anticipated delay in delivery of certain equipment already ordered. (iii) Items of equipment are in indenting tendering stage.
2000-01	20.00		

2.34 When asked to name the schemes taken up with budgetary support by NFC and whether there has been any slippage and the reasons for the same, the Department gave the following information:

Following schemes have been taken up with budgetary support by NFC:

(A) Continuing schemes from the VIII Plan, which have been completed during the IX Plan

S.No.	Name of the Scheme	Month of Completion
1.	New Uranium Fuel Assembly Plant	January 1997.
2.	New Zircaloy Fabrication Plant	May 1998
3.	New Uranium Oxide Fuel Plant	October 1998

(B) Continuing schemes from the VIII Plan, which are yet to be completed

		Expected completion by
1.	Pilot Plant for Development of Pyrochemical process	December 2000
2.	Modernisation and Replacement Scheme for existing plants	March 2001

3.	Titanium Sponge Project (Palayakayal Project)	Scope of the project under review
(C)	New Schemes sanctioned during IX Plan	
1.	37 Element PHWR Fuel Project	August, 2002
2.	Advanced Material Processing and characterisation facility	March, 2002
3.	Replacement and Augmentation of Zirconium Sponge Plant	March, 2002

2.35 From the financial allocations made and utilisation thereof, it is seen that the Nuclear Fuel Complex (NFC) has failed to fully utilise the Plan budgetary allocations for three consecutive years from 1996-97 to 1998-99. The shortfall in expenditure has. been to the tune of Rs.5.93 crore, Rs.2.82 crore and Rs.6.32 crore respectively. The reasons cited for shortfall are delay in indenting, spilling over of certain payment to subsequent year and delay in delivery of equipment. It is also observed that Plan BE for the year 1999- 2000 in respect of NFC has been scaled down from Rs.15 crore to Rs.5.75 crore at RE stage. This reduction has been attributed to a hold on implementation of one project pending a review of its scope and the anticipated delay in delivery of certain equipment. The Committee feel that the reasons advanced for shortfall/ reduction in expenditure/ estimates are not convincing at all. They take a serious view of the failure on the part of the organisation to fully utilise the budgetary allocations over the years. The Committee expect the organisation to carefully analyse the various reasons for shortfall and take steps in the right direction in future.

C. Electronics Corporation of India Limited (ECIL)

2.36 The Electronics Corporation of India Limited (ECIL) was set up in the year 1967 to create a strong base for professional grade electronic components, instruments, subsystems and systems to cater to the nation's atomic energy programme.

2.37 Details of targeted and actual production and net sales of ECIL during 1998-99 and 1999-2000 and the targets for 2000-01 are given below:

(Rs. in crore)

Year	Production		Sales	
	Target	Actuals	Target	Actuals
1998-99	424.86	237.86	430.00	226.64
1999-00	440.00	288.17 (upto 2/2000)	440.00	309.17 (upto 2/2000)
2000-01	485.00	-	485.00	

2.38 It is seen from the above data that the actual production and net sales of ECIL during 1998-99 and 1999-2000 have fallen far short of the targets fixed in this regard.

2.39 The targeted and actual gross earning, cost of sales, gross profit and net profit of the company during 1998-99 and expected/ projected figures for the years 1999-2000 and 2000-01 are given in the following table:-

(Rs. in crore)

Particulars	1998-99		1999-2000	2000-01
	Targets	Achieved	Expected	Projected
1. Gross earning	430.00	226.64	440.00	485.00
2. Cost of Sales (Excl. dep & intt.)	390.97	254.54	411.59	462.04
3. Gross Profit (before interest, dep & tax)	39.03	-27.90	28.41	22.96
4. Net Profit after Tax	2.92	-59.12	-4.45	4.43

2.40 It is seen from the above data that the financial performance of the company during 1998-99 has been rather dismal. The actual gross earning, gross profit and net profit of the company during 1998-99 have been far short of targets fixed in this regard.

2.41. The Department in a written reply have cited the following reasons for the poor performance of ECIL:

> "(i) Inability to generate business / sales volume adequate to produce contribution more than salary and fixed costs.
>
> (ii) Heavy salary burden of manpower related to business activities/ products in which ECIL faces market competition.
>
> (iii) Working capital constraints due to stoppage/ tapering down of customer advances and low asset-base of the company".

2.42 Elucidating further, the Department have stated that the emphasis in the initial years after the formation of the company was establishing a strong indigenous base in professional grade electronics, especially in the areas of Computers and Control Systems, and achieving self-reliance to support the nuclear power programme of the country. In pursuing the objective of self-reliance in the subsequent period, the company also started

producing many products that found applications in the Defence, Telecommunications, Oil & Gas, Broadcasting, Coal, Steel and Power sectors (in addition to Nuclear Power). However, Nuclear Power, Defence and Telecommunications have been the main area of business of ECIL. Difficulties being experienced by the company in obtaining adequate business in these sectors and generating the necessary contribution to meet the costs, are the main reasons for the financial difficulties of the company.

2.43 The off-take of the Control & Instrumentation products of the company by the Nuclear Power Sector has not grown at a rate sufficient to make optimal use of the capacities set up by the company for this purpose.

2.44 In respect of supplies to the Defence Sector, ECIL does not enjoy the advantages of excise duty concession and receipt of orders on nomination basis which are available to the Public Sector Undertakings (PSUs) of the Ministry of Defence with which it has to compete.

2.45 As a result of intense competition from Private Sector Companies and PSUs of the Department of Telecommunications, the volume of business of the company in the Telecommunications Sector has come down sharply in the past 3-4 years as have the margins in this line of business.

2.46 In view of the foregoing the company has initiated a re-structuring process encompassing product rationalisation, business re-grouping, financial re-structuring and downsizing of manpower and a detailed proposal is being drawn up to seek Government approval therefor.

2.47 Amplifying further, the Secretary, DAE during evidence stated as follows:

> "..... now we are to restructure the whole thing by dividing it into three parts. We are going to take and protect the nuclear-related activity. Forty per cent of the activity is defence-related. We are requesting the Ministry of Defence to treat it as defence unit since they have this capability there. The remaining part is commercial and we are trying to do something in this regard. This year it is beginning to recover some of its losses. In 1998-99, they had to resource some of the components though that had nothing to do with nuclear activity. There is also a cash flow problem. So, at the moment, we are trying to look at restructuring of the ECIL."

2.48 As regards ECIL's activity in emerging frontier technology areas, the Department have stated that ECIL has been working in emerging and frontier technology areas and developed products for systems like Future Air Navigation System (FANS), Command Control, Communication and

Information (C&I) Systems and Electronic Warfare Systems. Some of these (including export items) are listed below.

(1) Automatic Dependent Surveillance System [as part of the Future Air Navigation System (FANS) Development Programme] and installed at Chennai and Calcutta Airports for providing Air Traffic Management facilities for the Airport Authority of India.

(2) Airport Terminal Information System developed and exported to other countries through Thomson CSF of France which is marketing this product internationally.

(3) Automatic Message Switching System incorporating futuristic concepts, installed at Delhi and Mumbai airports for the Airports Authority of India.

(4) C&I systems for 'TRISHUL 'and' AKASH' missile projects of -he prototypes undergoing user evaluation.

(5) Electronic Warfare (communications) S' developed in association with Defence Laboratory - large value order expected.

(6) VHF Radio Communications equipment for the Indian Navy

(7) Advanced Electrical Supervisory Control and Data Acquisition (SCADA) System developed in association with the Bhabha Atomic Research Centre (BARC) and being supplied to various Nuclear Power Stations.

(8) Advanced Programmable Logic Controller, installed at several Nuclear and Thermal Power Plants.

(9) ELISA READER used for AIDS/HIV detection, being supplied to various hospitals and laboratories.

(10) X-ray generators, used in the X-ray baggage inspection systems, at Indian airports and also exported to USA, UK and Malaysia.

2.49 The Committee are concerned to note that the physical performance of the Electronics Corporation of India Limited (ECIL) during 1998-99 and 1999- 2000 has been rather dismal. Actual production and net sales of the company during the above period have been far short of the targets set in this regard. The financial performance of the company during 1998-99 has been equally bad. The gross earning, gross profit and net profit of the company during the year have gone down to unimaginably

low levels. Inability to generate business/sales volume, heavy salary burden of man-power, working capital constraints, difficulties in obtaining adequate business in Nuclear Power, Defence and Telecommunications Sectors, intense competition from Private Sector Companies and Public Sector Undertakings, etc. have been cited as reasons for poor performance of the company. Moreover, ECIL does not enjoy the advantages of excise duty concession and receipt of orders on nomination basis available to Public Sector Undertakings (PSUs) of the Ministry of Defence. The Committee have been informed that the company has initiated a re- structuring process encompassing product rationalisation and downsizing of manpower and that a detailed proposal is being drawn up to seek Government approval therefor. The Committee would like to be informed of the details of the said proposal as also the action taken by the Government thereon. The Department should take up with the Ministry of Defence and/or Finance the question of charging similar excise duty from ECIL as from other Defence Undertakings. Pending finalisation of re-structuring exercise, the Government should take steps for transfer and export of emerging frontier technologies to other developing countries. With the availability of infrastructure and trained manpower at their disposal, ECIL should also consider Information Technology (IT) Industry as another viable means to improve their bottom-lines.

D. Nuclear Power Corporation of India Limited (NPCIL)

2.50 The Nuclear Power Corporation of India Limited (NPCIL) was set up in 1987 for operation and maintenance of the existing power stations and for setting up of future power projects. NPCIL has been striving its best to promote nuclear power amidst challenges of diverse nature-technological, commercial, organisational and political but mainly financial.

2.51 NPCIL has set up ten nuclear power reactors with two reactors each at the locations : Tarapur, Rawatbhata, Kalpakkam, Narora and Kakrapar, with a total capacity of 1840 MWe. Eleventh reactor (Kaiga-2) at Kaiga in Karnataka achieved criticality on 24.9.1999 and it was synchronised to the grid for the first time on 2.12.99. This unit has been declared commercial on 16.3.2000. Twelfth reactor (RAPP-3) at Rawatbhata achieved criticality on 24.12.1999 and has been synchronised to the grid for the first time on 10.3.2000.

2.52 An exercise carried out by Department of Atomic Energy as part "Vision 2020" aims at setting up about 20,000 MWe of nuclear power

generating capacity in India by the year 2020. A tentative programme is indicated below:

1.	Present Operating base	2280 Mwe
2.	Additions:	
	Pressurised Heavy Water Reactors (PHWRs)	8320 Mwe
	Fast Breeder Reactors (FBRs)	2500 Mwe
	Light Water Reactors (LWRs)$	7000 Mwe
	Total	**21,1000 Mwe**

$ Capacities from LWRs based on imports, would however be determined by the global political situation and emergence of concrete picture.

2.53 The 9th Five Year Plan proposal of nuclear power sector includes start of two PHWR projects viz. TAPP-3&4 (2x500 MWe) and Kaiga-3&4 (2x220 MWe), one LWR project at Kudankulam-1 &2 (2x1000 MWe) and one Prototype Fast Breeder Reactor (PFBR of 500 MWe) in addition to two ongoing projects at Kaiga and Rajasthan. These ongoing units at Kaiga- 1&2 and RAPP-3&4 would be added during 9th Five Year Plan period of which two units, Kaiga-2 at Kaiga and RAPP-3 at Rajasthan, have already been synchronised to the grid. Remaining units Kaiga-1 and RAPP-4 are anticipated to be completed during 2000-01. Work on TAPP-3&4 project has already commenced in October 1998. DPR contract for Kudankulam Project has been signed by NPCIL and Russian organisation 'ATOMSTROY EXPORT' and work on preparation of the DPR has commenced from April 1999. The actions are being initiated for starting pre-project activities for Kaiga-3&4 and obtaining financial sanction for the same. Further additions will depend on the future plan allocations.

2.54 During oral evidence, the Secretary, DAE stated the following:

> "..... as Indian grids become stronger and as our indigenous capability becomes better, we are going from 220 MWe to 500 MWe. 500 MWe capacity plant is not a bad plant 220 ..... MWe will become too small and in future, we may not do it. For some time, we are going to focus on 500 MWe Pressurised Water Reactors, 1000 MWe Light Water Reactors and 500 MWe Fast Breeder Reactors".

2.55 Taking into account of the base cost of Rs.4.82 crores per MWe (1996 constant rupee value) for setting up of 2x500 MWe PHWRs (TAPP- 3&4), the indicative total cost for setting up of 20,000 MWe is Rs.96,400 crore (1996 constant rupee value) without including financing cost and escalations.

2.56 In this connection, the Secretary, DAE during evidence stated as under:

> "If you are thinking in terms of 20,000 MWe, then you multiply it by five or something like that approximately to get the required rupees in crore. Half of the budget support has to come from the Government and the remaining part from internal resource generation".

2.57 The Secretary, DAE further added the following:

> "What happens is that most of the equity goes into new projects and the investment rate in new projects is much higher as the cost of the new projects is much higher compared to the earlier projects. It is because they have done it over a long period of time. Tarapur project was very cheap but today the cost of such project is much higher".

2.58 Considering the limited operating base of NPCIL, its internal resource generation capability is limited. This makes the Corporation to depend heavily on budgetary support to implement the projects. Hence it becomes necessary to rely upon the budgetary support from the Government to sustain the desired growth till the capacity of around 10,000 MWe is achieved, Unlike Fossil Thermal Power Plants, Nuclear Power Projects do not have access to concessional funding from International Financial Institutions.

2.59 In the absence of long maturity loans in the Indian debt market to suit the gestation of nuclear power projects, repayment of the borrowing by NPCIL is made by resorting to further borrowings. A mechanism is therefore necessary to be evolved for providing long term loans (12 to 15 years maturing) to NPCIL at reasonable rates of interest.

2.60 Amplifying the prevailing financial condition of NPCIL, the Secretary, DAE during evidence stated as under:

> "The financial strength is much better now. Our budgetary support has already gone up. In the Eighth Plan, the Nuclear Power Corporation was given a budgetary support of something like Rs. 170 crore per year. Last year they got something like Rs. 900 crore. Because of the small amount of money that they were given, they had moved into an over-borrowed situation. This year, NPCIL has retired a great deal of old loans that they had taken. Of course, I don't quite understand the complex method of calculating resource generation. So, I asked them to give me another kind of figures which I would read with your permission. In 1998-99, the internal surplus, which was approved, was Rs.380 crore but what was actually realised was Rs.562 crore because their capacity factors are now

running very high. What they had planned was repayment of Rs.737 crore but they repaid Rs.250 crore more because the were getting into an over-borrowed situation. They repaid Rs.987 crore ..... Similarly, they are going to pay Rs.125 crore during 1999-2000 over and above what they had originally planned to pay. If you take that into account, it is a much better financial situation..... for the first time, the NPCIL paid a dividend of Rs.50 crore to the Government last year because they paid 20 per cent of the net profit. It is likely to be more than that this year".

2.61 Due to the poor financial health of the State Electricity Boards, there are heavy arrears of outstanding dues. While NPCIL has taken adequate steps to improve the collection of current bills from SEBs by opening of LCs, still there are some States which are defaulting. The details of outstanding dues from power utilities/ State Electricity Boards (SEBs) for 1997-98,1998- 99 and 1999-2000 are given below:

(Rs. in crore)

		As on 31st March, 1998 (1997-98)	As on 31st March, 1999 (1998-99)	As on 29th Feb, 2000 (1999-2000)
STATION	BENEFICIARY		TOTAL	
	MSEB	1356	176	2
TAPS	GEB	6378	4869	8864
	SUB TOTAL	7734	5045	8866
RAPS	RSEB	16936	28431	7507
	TNEB	1797	1941	2283
	KSEB(KERALA)	2848	1471	920
	APTANCSCO	12792	11966	10130
MAPS	KPTCL	5804	6097	3408
PONDICHERRY		21	0	44
	SUBTOTAL	23443	21475	16785
	UPPCL	61782	47752	58656
	DVB	14672	16168	19102
	PSEB	270	327	221
NAPS	RSEB	28014	24789	1541
	HVPNL	22635	15093	17656
	J&K, ED	5146	14360	22399
	CHANDIGARH	184	93	14
	HPSEB	254	768	3065
	SUBTOTAL	132957	119350	122645
	GEB	20953	10784	13634
	MPEB	47804	59363	91816

KAPS	MSEB	6239	1162	4222
	GOA	0	0	0
	DAMAN & DIU	0	0	45
	DADRA NAGAR	0	0	65
	APTRANSCO			42
	SUBTOTAL	4997	71309	109824
	TOTAL	**256066**	**245610**	**265636**

(The outstandings include Delay Payment Charges)

2.62 In order to liquidate the outstanding arrears, the NPCIL has taken the following steps:-

(i) SEBs have been constantly persuaded to open Letter of Credits (LCs) to ensure timely payments towards current bills against sale of power from the Nuclear Power Stations. As a consequence, most of the SEBs have opened LCs for the requisite amount which has resulted in considerably improving NPCIL cash flows due to timely realisation of current bills.

(ii) The Government of India had already approved recovery of the outstanding dues from the State Electricity Boards through appropriation of Central Plan Assistance (CPA) to the States. As a consequence, every year nearly Rs. 150 to Rs. 175 crore are being recovered. However, as the percentage of the appropriation of Central Plan Assistance is restricted to 15% of the Central Plan Assistance due to the State Governments and the CPA so recovered is distributed between all Central Power generating companies, Coal companies etc., it takes relatively longer period to recover the past outstandings.

(iii) In view of the time taken in expediting recovery through central plan assistance, NPCIL have also been pursuing settlement of the outstanding dues with the individual SEBs for reaching an amicable settlement. Accordingly, a settlement has already been reached with RSEB in 1998-99. On similar lines, negotiations have also been held with UPSEB which is being pursued for settlement. Similar steps have also been taken with other SEBs with a view to settling the past outstandings in an expeditious manner. However, the response from the SEBS, which are not in a financial healthy condition, is not very positive like MPEB.

(iv) In addition to above, the issue of settlement of the outstanding dues is persistently taken up at different levels with the State

Governments/SEBs concerned regularly and the same is also raised in the Regional Electricity Board meetings where all the SEBs are represented at the level of Chairman of the respective SEBs.

2.63 The issue of supply of power to a cluster of Industries and other bulk consumer like Railways as also been examined. However, the same has not been found feasible as such diversion can only be effected through the transmission and distribution system of SEBs concerned. NPCIL had also moved the Competent Authority (Ministry of Power) for diversion of power from MPEB (which has been a persistent defaulter and has not paid since last one year inspite of all efforts on our part) to Gujarat State Electricity Board (GEB) who were willing to accept the diverted part of power from Madhya Pradesh and had also given their willingness to open Letter of Credit. However, because of the over drawal of power by MPEB, and also due to the prevailing energy accounting procedure of WREB, it was not possible to divert power from Madhya Pradesh to Gujarat. In view of this, diversion of power in the existing environment is difficult to implement. However, if efforts are made which could improve the financial position of the State Electricity Boards by restructuring etc., the problem relating to non- realisation of dues will be solved. Therefore, efforts are required to be made in improving the financial health of the SEBs which only can lead to improvement in the cash flows of SEBs resulting in timely realisation of current bills as well as past outstandings of all Power Generating Companies.

2.64 NPCIL has approached the Flower Finance Corporation (PFC) for a loan of Rs. 235 crore for renovation and modernisation programme of MAPS-1. PFC have communicated their approval for grant of loan. NPCIL is in the process of furnishing further details to enable PFC for appraisal. After the appraisal and a communication from M/s PFC regarding the terms and conditions of the loan, NPCIL would consider availing this offer subject to competitiveness of interest rates and terms and conditions offered by PFC.

Gestation Period

2.65 Actual gestation period of nuclear power projects (so far constructed) from first pour reactor of concrete to synchronisation varies from about 54 to 150 months. The longer periods are mainly attributable to learning phase, indigenisation efforts and focus on self reliance. Following steps are being taken to further reduce the gestation period (First pour of reactor concrete to commercial operation) to about 72-78 months:

1. By ensuring the availability of all engineering inputs before the award of work.

2. By obtaining regulatory clearances well in advance to facilitate uninterrupted construction activities.

3. By awarding of work as EPC/Supply-cum-Erection packages to fix single point responsibility and for having better control.

4. By adopting better project management for periodic monitoring and control using Computer Project management software like Primavera Project Planner.

2.66 Indicative gestation periods of other types power plants are as follows:

Coal based Thermal Power Plants	4 to 5 years
Hydel Power Plant	6 to 8 years (will depend on the scheme and its linkage with irrigation)

2.67 **The Committee note that the Department aim at setting up about 20,000 MWe of nuclear power generating capacity in the country by the year 2020. This appears to be an over-ambitious and unrealistic programme considering the fact that the total cost involved in this venture is a whopping Rs. 96,400 crore(1996 constant rupee value) without including financing cost and escalation, particularly when the Nuclear Power Corporation of India Limited (NPCIL) has a limited operating base and consequently its capacity to raise internal resources is grossly limited. Besides, NPCIL also does not have access to long-term maturity loans. Moreover, NPCIL is also plagued by the menace of heavy arrears of outstanding dues from various power utilities. The Committee, therefore, feel that it would he better if the Department draw up a plan fixing short and achievable targets to be achieved in the short time-frames and make concerted efforts to achieve those targets which could ultimately lead to their target of 20,000 Mwe. While fixing the targets, care may be taken not to put too much reliance, on the kind of reactors which would depend on global political situation. The Committee feel that if NPCIL is to achieve its targets, then it should be provided with sufficient budgetary support for 8 to 10 years.**

2.68 The Committee are concerned to note the growing menace of outstanding dues from power utilities/State Electricity Boards (SEBs) to the Nuclear Power Corporation India Limited (NPCIL) over the years. The amount of outstandings (including Delay Payment Charges) which was

Rs. 2560.66 crore as on 31st March 1998, decreased to Rs. 2456.10 crore as on 31st March 1999. However, the Committee find that the position has deteriorated subsequently and as on 29th February 2000, the outstandings have gone up to Rs. 2656.36 crore in spite of a number of corrective steps taken by NPCIL. The Committee have been informed that most of the SEBs have opened Letters of Credit (LCs) to ensure timely payments of current bills against sale of power from the Nuclear Power Stations and as a result, cash flows to NPCIL have improved considerably. However, NPCIL seems to be having problems in timely recovery of past outstandings as the percentage of appropriation of Central Plan Assistance (CPA), is restricted to 15% of the CPA due to the State Government and the CPA so recovered is distributed among all the Central power generating companies, coal companies, etc. The Committee have further been informed that NPCIL has reached a settlement with the Rajasthan State Electricity Board (RSEB) in 1998-99 in regard to payment of outstanding dues. The Committee hope that NPCIL would make vigorous efforts to reach similar settlements with other SEBs. Some incentives like partial waiving of Delay Payment Charges, etc. may also be offered to the SEBs in order to attract them to go in for settlement.

2.69 The Committee note that the actual gestation periods of Nuclear Power Projects so far constructed in the country from the first pour of concrete to synchronisation have varied from 54 to 150 months. The Committee further note that the current gestation period of our Nuclear Power Projects is 7 years. The longer gestation periods are mainly attributable to learning phase, indigenisation efforts and focus on self- reliance. The Committee are happy to note that the Department have taken a number of steps such as obtaining regulatory clearance in advance, carrying out pre- project activities beforehand, etc. to reduce this period to about six to six and a half years. The Committee would, however, like the Department to further reduce the period to about five and a half years so as to avoid the cost overruns of Nuclear Power Projects. Further, the Committee understand that NPCIL has difficulties in going in for substantial market borrowings because of prevailing high market rate of interest on loans. Besides, the bonds issued by NPCIL have short maturity period vis-a-vis the current gestation period of Nuclear Power Projects. The Committee, therefore, recommend that long-term maturity loans be made available to NPCIL at reasonable rates of interest.

E. Setting up of Atomic Power Stations in different regions

2.70 Atomic Power Stations in the country have been set up in Tamil Nadu (Madras Atomic Power Station), Rajasthan (Rajasthan Atomic Power

Station), Maharashtra (Tarapur Atomic Power Station), Gujarat (Kakrapar Atomic Power Station), Uttar Pradesh (Narora Atomic Power Station and Karnataka (Kaiga Atomic Power Station). But no such station has been set up in the eastern or north-eastern region of the country.

2.71 During oral evidence of the representatives of the Department, the above point was raised The Secretary, Department of Atomic Energy in this regard stated as under:-

> "When you compare a coal-based thermal power plant with a nuclear power plant, the unit energy cost becomes comparable only when we move about a thousand kilometres from the coal pit- head and that makes it difficult for us to put up plants in the eastern and other sectors".

2.72 Elucidating further, the Secretary, DAE mentioned as under:-

> "Essentially the first consideration for setting up a power plant broadly depends upon economics. This is what the Central Electricity Authority or the Planning Commission ask before it is set up. They ask about the cost of per unit energy produced. Once you have produced the electricity, we have also got to sell it to the electricity boards and go through the same procedure .... In the north-eastern side, I understand that the hydel potential is very high. That is what probably they will try to exploit..... So, about setting up of such units in West Bengal, Orissa and Bihar 1 would say that it is question of economics at this point of time to look into it. But there are other things also. Some very interesting thing is happening though India has not taken a position on the Kyoto Protocol. There is fear in the whole that excessive burning of fossil fuel which produces carbon dioxide, and if it is settling in the upper layer, it may create 'green house affect' which may lead to global warming, which may lead to disaster scenario for the whole world with the melting of ice-caps and so on and so forth. So, these big countries which are really burning fossil fuel excessively and have been asked to cut down the carbon dioxide emissions, have CDM- the clean development mechanism for bringing down carbon levels. Of course, they are not doing anything about it. Now, they are talking about whether they can do something with more efficient machinery in the Developing countries and take the carbon dioxide credit for that. Now, India has not taken, I understand, any position on this. But the International Atomic Agency is saying this. For instance, suppose you set up a plant in a place where it is not economical where otherwise you would put a fossil based fuel plant, and suppose somebody says, I

am willing to pay the difference in cost, and in that process I have prevented the establishment of a fossil based thermal plant, can 1 get the carbon dioxide credit for this? Now, these are all the things which are moving around. So, without economics or unless some subsidy takes place, it is difficult to set up such plant there. Of course, we are ready to set up these units at any place provided it satisfies other criteria of site, water being available and so on".

2.73 The Committee note that Atomic Power Stations have been set up in southern, western and northern parts of the country. The eastern and north-eastern parts have perhaps not been explored as far as setting up of such stations is concerned. The Committee are of the view that this exercise needs to be undertaken on priority basis considering the fact that coal is an exhaustible source of energy. The Committee, therefore, recommend that the Department should explore the feasibility of setting up of Atomic Power Stations in these regions. They should make a detailed and in-depth study of various aspects such as economic, strategic, environmental, safety, etc. involved in the process and may consider such sites for their future projects.

F. Applied Uses of Nuclear Energy

POTON Irradiator Plant

2.74 POTON Irradiator Plant is under construction at Lasalgaon near Nasik in Maharashtra in order to demonstrate the feasibility of increasing the shelf life of potatoes and onions on commercial scale. Civil construction of the plant is progressing well. A considerable amount of the civil work is in place. Infrastructure services for the customer's benefit like canteen and other facilities are also under construction Electromechanical systems for the plant are under manufacture as per specifications. The whole plant is expected to be ready by December 2000 and in operations Meanwhile, liaison between the Farmers Cooperative, NAFED and other agencies being actively pursued.

2.75 Special steps have been taken to encourage setting up of such plants in other parts of the country in collaboration with other agencies like Ministry of Food Processing Industries (MFPI), Department of Science & Technology (Technology Development Board), National Marketing Federation (NAFED) and also through independent actions. The project report and preliminary safety report of "Demonstration Facility viz. POTON Irradiator (for potatoes and onions)" has been given to eight entrepreneurs. Besides these, MoU has been signed between BARC and M/s. Isotech Irradiators Pvt. Ltd., Mumbai, in the year 1998 by which an amount of Rs. one lakh has been received by BARC. The firm is expected to put-up its own food irradiation plant in Karnataka in the near future. Karnataka State

Government has already given land to the above firm and Department of Bio-Technology (DBT) is expected to finance the project A technical document for the dissemination of this technology has also been published.

Radiation Processing of Spices

2.76 The Commercial Demonstration Plant for Radiation Processing of Spices (work on which started in October 1996) has been set up at Vashi, Navi Mumbai by the Board of Radiation Isotope and Technology (BRIT) and is now operational. Requisite regulatory clearances from Atomic Energy Regulatory Board (AERB) and licence under the Atomic Energy Act as well as of the Food and Drug Administration, Maharashtra State for export purposes have been obtained. The plant is designed to process a maximum quantity of 12,000 tonnes at 1000 kilocuries of Cobalt-60 source. At present the plant has been loaded with 100 kilocuries Cobalt-60 source which will be gradually increased during 2000 to the rated level after obtaining further regulatory clearance from AERB.

2.77 With regard to the steps taken for setting up such plants in the country, Department has produced a priced technical document on radiation processing of food, giving technical specifications, estimated levels of capital investment, trained manpower and cost of operation and maintenance of the plant, for the benefit of entrepreneurs and farmers co-operatives. BRIT has also volunteered to take up design installation and commissioning of such plants as well as training of required manpower to run these plants on a regular basis. BRIT will also supply the radiation source and will extend technical guidance and support whenever required.

2.78 During the evidence, the matter regarding preservation technology was raised. Director (BARC), elaborating on this point, stated as follows:-

> "We have the technology for preservation of food, that is, both from the point of view of shelf life as well as from the point of view of making it more hygienic. We are going quite strong in this matter .....the Spice Plant is already operational at New Bombay. The Onion Processing Plant near Nasik is under construction. We hope to complete that plant during 2000-01. We have gone through a very extensive programme of disseminating this information to various entrepreneurs and interested industry people. We have taken a fairly flexible approach on this. In whichever, manner we could pass on this technology, we would do that. It looks to me that once people see the actual working of these plants and they can make the assessment on their own, then this technology would grow and investment would flow. Our intention is that we want to encourage industry to pick up this process. There is a lot of positive feedback on this".

Development of Crop Varieties:

2.79 The Nuclear Agriculture & Biotechnology Division (NABD) of the Bhabha Atomic Research Centre, Mumbai have developed 22 crop varieties and released for commercial cultivation. The details of these 22 varieties are as follows:

(i)	Mungbean	-	4
(ii)	Blackgram	-	4
(iii)	Pigeon Pea	-	2
(iv)	Groundnut	-	8
(v)	Mustard	-	2
(vi)	jute	-	1
(vii)	Rice	-	1
	Total	**-**	**22**

2.80 Details about the varieties, year of release, areas of adaptation, yield increase over the normal varieties and sources of seeds are given in the following table:-

BARC Crop Varieties Released and Notified for Cultivation

Crop	Name	Year of Release	Maturity (M) Yield (Y) & Yield Increase (YI)	Area and Sources of seeds
1	2	3	4	5
Blackgram	TAU-1	1995	M:70-75 Days Y:800-1000 Kg/ha YI:24%	Maharashtra, Karnataka MSSC, Akola
	TAU-2	1992	M:70 Days Y:900-1000 Kg/ha Y1:18%	Maharashtra, MSSC, Akola
	TAU-4	1992	M:70-75 Days Y:900-1000 Kg/ha Y1:22%	Maharashtra, Madhya Pradesh, MSSC, Akola, Andhra Pradesh, Kerala, Tamil Nadu, BARC, Mumbai
Greeneram	TAP-7	1983	M:60 Days Y:700-800 Kg/ha Y1:33%	Maharashtra, Karnataka, MSSC, Akola
	TARM-2	1992	M:Rabi 90 Days Y:1000-1100 Kg/ha YI:80%	Maharashtra, MSSC, Akola
	TARM-1	1995	M: 90 Days Y:785 Kg/ha YI:45%	Maharashtra, Gujarat, Madhya Pradesh, Karnataka, Andhra Pradesh, Kerala, Tamil Nadu, Orissa, BARC, Mumbai

1	2	3	4	5
	TARM-18	1995	M:65-70 Days Y:I05 Kg/ha	Maharashtra, BARC Mumbai
Pigeon Pea	TT-8	1983	M:135-140 Days Y:1200-1300 Kg/ha	Maharashtra, Madhya Pradesh, Andhra Pradesh, Gujarat, Karnataka
	TAT-10	1985	M:110-115Days Y.900-1000 Kg/ha	Maharashtra, MSSC, Akola
Groundnut	TG-1	1973	M: 130-135 Days Y:2400-2500 Kg/ha YI:15-20%	Maharashtra, Gujarat BARC, Mumbai
	TG-17	1985	M: 115-120 Days Y:1700-2000Kg/ha YI:15-20%	Maharashtra, BARC, Mumbai
	TG-3	1987	M:110 Days Y:2000-2500 Kg/ha	Kerala, BARC, Mumbai
	TGS-1	1989	M:110-125 Days Y:Kharif 2000 Kg/ha YI:23%	Gujarat, GAD, Junagadh
	TAG-24	1991	M:Kharif 100-105 Days Summer:112-117 Days Y:Kharif: 1300 Kg/ha Summer:2500 Kg/ha YI: Kharif: 24% Summer: 50%	Maharashtra, West Bengal, MSSC, Akola
	TG-22	1992	M:Kharif- 115-120 Days Y:Kharif.- 1677Kg/ha YI: 30%	Bihar, BAD, Ranchi
	TKG-19A	1994	M:120-125 Days YI:12-15%	Maharashtra, BARC, Mumbai
	TG-26	1995	M: 110-120 Days Y: Summer: 2500 Kg/ha YI: 23-39%	Maharashtra, Gujarat
Mustard	TM-2 Black seed	1987	M:90 Days Y:1370Kg/ha YI: 25%	Assam, BARC, Mumbai
	TM-4 Yellow seed	1987	M:95 Days Y: 1470 Kg/ha YI: 35%	Assam, BARC, Mumbai

1	2	3	4	5
Rice	Hari	1988	M: 135-140 Days Y:6000Kg/ha YI: 20%	Andhra Pradesh, BARC, Mumbai, APPS DCL
Jute	TKJ-40 Mahadev	1983	M: 125-130 Days Y:2800-3100 Kg/ha YI:10-13%	Orissa, BARC, Mumbai

2.81 Both for field level testing and later when the variety is released for seed multiplication, BARC is actively interacting with the various agricultural universities in Maharashtra as well as other State agricultural universities. BARC have collaborative research programme with 5 universities in Maharashtra, one university each in Karnataka and Pondicherry. Memorandum of Understanding (MoU) for testing and seed multiplication as well as collaborative research programme in the field of agriculture and bio-technology have already been entered into with the above 7 universities. Entering into MoU with another 3 universities is under consideration and will be signed in due course. Field level testing in developing seed material of Mungbean and Blackgram were also taken up with 8 Universities during the year 1999. The names of the universities are given below:

Universities with whom MoU has been signed

1. Konkan Krishi Vidyapeeth, Dapoli, Maharashtra
2. MPKV, Rahuri, Maharashtra
3. Dr. P.D.K.V.,Akola, Maharashtra
4. MAU, Parbhani, Maharashtra
5. UAS, Dharwar, Karnataka
6. Krishi Vigyan Kendra, Government of Pondicherry, Pondicherry
7. Maharashtra State Seed Corporation, Akola, Maharashtra

Universities, etc. with whom MoU is yet to be signed

1. UAS, Bangalore, Karnataka
2. RAU, Bikaner, Rajasthan
3. Directorate of Food and Agriculture Sciences, DRDO, New Delhi

Universities involved in field level testing of seeds

1. N.C. Ranga Agricultural University, Hyderabad.
2. Orissa University of Agriculture & Technology, Bhubaneshwar

3. Tamil Nadu Agricultural University, Coimbatore
4. Gujarat Agricultural University, Dhatiwara
5. Assam Agricultural University, Jorhat Kerala Agricultural University, Kochi
6. Kerala Agricultural University, Kochi
7. Indira Gandhi Agricultural University, Raipur
8. Rajasthan Agricultural University, Bikaner.

2.82 The universities involved in field level testing of seeds have shown a keen interest in growing and testing the material developed by BARC. The universities are encouraged by involving them in various research works relating to testing and developing seed material. Exchange between universities/ BARC is being done regularly for training them in the field.

2.83 Elaborating this point, the Director, BARC stated during evidence as under:-

> "We work on development of nuclear agricultural mutants and its propagation for crop production. First we carry out the work in Trombay, then we interact with the agricultural universities so that we could go through the multi-centric trials. They also give the performance data. There is a National Co-ordination Committee at the level of the ICAR. The monitoring assessment of how the different varieties that are under development are performing etc. All these data are generated by the ICAR and the agricultural universities. This is assessed the National Committee. Based on that they decide the strategy for every year. For example, you have to decide as to what should be the schedule for production of different varieties. They give the allocation. Then, we also participate in the production and ultimately it goes to the farmers..... It is a fully co- ordinated national programme where everybody is involved".

2.84 The Committee are happy to note that the Commercial Demonstration Plant for Radiation Processing of Spices at Navi Mumbai has become operational and that the POTON Plant at Lasalgaon, Maharashtra is likely to be completed by December, 2000. The Committee hope that these plants would go a long way in preserving spices, potatoes and onions for longer periods. They desire that after analysing the commercial success of these plants, the Department should go in for setting up more such plants in other parts of the country like Punjab and Haryana in collaboration with other agencies. The Department should realise that unless the entrepreneurs are fully able to comprehend the technology involved in these plants and are satisfied with its efficacy, it is highly

unlikely that they would come forward to invest in this venture. The Department have therefore, to make concerted efforts to explain the technology to the prospective entrepreneurs. They should organise demonstration programmes at various places to prove their point, besides resorting to holding of seminars and distribution of written pamphlets on the subject. Based on experience gained from their work on these plants, they should also endeavour to bring in further improvement in the technology if it is called for.

3.85 The Committee are happy to note that the Bhabha Atomic Research Centre (BARC) has developed 22 crop varieties relating to greengram, blackgram, pigeon pea, groundnut, mustard, jute and rice and released the same for commercial cultivation. These crop varieties were released between 1973 and 1995. The Committee are also happy to note that the percentage yield increase of these crops over normal varieties varies from 10% to 80 %. At the same time, they have noted that BARC has not released any crop variety after 1995. They are also sad to note that only one variety of rice has been released so far and that too as far back as in 1988. The Committee recommend that the Department/ BARC should broad-base their agricultural R&D programme and develop/ improve food crop varieties as it would go a long way in boosting agricultural production in the country However, in developing high yield variety seeds, due care should be taken to protect their nutrition values. The Department/BARC should undertake collaborative R&D programmes with the Indian Council of Agricultural Research (ICAR) and other agricultural universities, especially in the eastern region, where both production and yield are abysmally low. They should also organise 'Kisan Melas' in collaboration with Agricultural Extension Departments of States/ Krishi Vigyan Kendras and also hold periodic seminars in rural areas for dissen-dnation of the relevant information for the use of farmers.

NEW DELHI;
11 April, 2000
22 Chaitra, 1922 (Saka)

SONTOSH MOHAN DEV,
Chairman,
Standing Committee on Energy.

STATEMENT OF CONCLUSIONS / RECOMMENDATIONS OF THE STANDING COMMITTEE ON ENERGY CONTAINED IN THE REPORT

Sl. No.	Reference Para No. of the Report	Conclusions / Recommendations
1	2.	3.
1.	2.27	The Committee are distressed to note that the Department of Atomic Energy have been unable to utilise as much as Rs. 199.45 crore out of the budgetary support component amounting to Rs. 3992.87 crore during 1998-99. The budgetary support component for Industries & Minerals (I&M), Power and Research & Development (R&D) Sectors was Rs. 997.93 crore, Rs. 2149.28 crore and Rs. 845.66 crore respectively. While there has been a marginal shortfall in expenditure in the Industries & Minerals (I&M) Sector amounting to Rs. 2.30 crore, the Power an Research & Development (R&D) Sectors have registered a shortfall of Rs. 156.83 crore and Rs. 40.32 crore respectively. More distressing is the fact that the Plan expenditure in the budgetary support component during 1998-99 has been short of the Plan budgetary allocation by as much as Rs. 227.67 crore. All the three Sectors of the Department - Power, I&M and R&D - have registered shortfalls in the Plan expenditure out of the budgetary support component during the year. While this shortfall has been more pronounced in the Power Sector with Rs. 135.88 crore, the shortfalls in the I&M and R&D Sectors have been to the tune of Rs. 34.87 crore and Rs. 56.92 crore respectively. The reasons advanced by the Department for shortfalls, such as delay in procurement of machinery and equipment, time taken for formulating and sanctioning new IX

1	2.	3.
		Plan projects, suspension of operation of the Heavy Water Plant at Baroda, etc. are hardly convincing and clearly showing a lack of foresight on the part of the Department. The Committee are concerned to note that while the Department have been clamouring for more and more budgetary support, they have failed to utilise fully the allocated amount for one reason or the other. The Committee apprehend that actual expenditure during the years 1999-2000 and 2000-01 may fall short of allocation since the Plan schemes are vet to be sanctioned. The Committee, therefore, recommend that the Department should review and strengthen their budgetary mechanism so as to ensure utilisastion of the allocated amount to the extent possible.
2.	2.28	The Committee are dismayed to note that there are wide variations between the Budget Estimates (BE) and the Revised Estimates (RE) pertaining to year 1999-2000. Total BE amount of Rs.4969.38 crore for 1999-2000 has been reduced to Rs.4628.67 crore at RE stage. Again, there have been huge variations between the Plan BE and Plan RE in the budgetary support component in the Power and I&M Sectors during 1999-2000. While Plan BE of Rs.950 crore in the Power Sector was reduced to Rs.885.30 crore at RE stage, in the I&Rl Sector the Plan BE of Rs.225 crore was scaled down Rs.143.39 crore at RE stage. The reduction in the Power Sector has been attributed to the delay in establishment of technical procedure with regard to release of payment of Russian credit in connection w preparation of the Detailed Project Report (DPR) for the Kudankulam Atomic Power Project as the entire Russian credit of Rs. 111 crore could not be utilised even though the payment of advance for DPR work of Rs. 28 crore as against Rs. 9 crore budgeted had been released. The reduction in the I&M Sector has

1	2.	3.
		been attributed to the rescheduling of the Zirconium Oxide-Titanium Sponge Project due to technical reasons, reduction in the finance assistance to the Uranium Corporation of India Limited (UCIL) for the III Stage Shaft Project at jaduguda Mines, delay in the finalisation of joint venture projects of the Indian Rare Earths Limited (IREL), etc. The Committee find it hard to believe that the huge reduction at RE stage was mostly because of the administrative reasons stated above. Rather, they feel that this is indicative of poor planning and budgeting on the part of the Department for which corrective action is imperative. The Committee apprehend that with the mismanagement of expenditure on Plan schemes, the realisation of 20,000 MWe by 2020 through nuclear power will remain a distant dream. The Committee recommend that the Department should make accurate and realistic budget estimates in future after making an in- depth analysis of each and every scheme.
3.	2.29	The Committee are also unhappy to note that as against a target of Rs.178 crore, the actual utilisation of Internal and Extra Budgetary Resources (IEBR) during the year 1998-99 has been a meagre Rs.69.88 crore. Thus, there has been a shortfall of Rs.108.12 crore. The share of the Power and I&M Sectors in the shortfall has been to the extent of Rs.79.87 crore and Rs.28.25 crore respectively. The Committee note that the Nuclear Power Corporation of India Limited (NPCIL) has utilised an IEBR amount of Rs.59.13 crore as against the target of Rs.139 crore during 1998-99. Similarly, IEBR amounting to Rs.10.75 crore has been utilised by the Indian Rare Earths Limited (IREL) as against the target of Rs.27 crore. The Electronics Corporation of India Limited (ECIL) could not generate any IEBR since 1997-98 even though a target of Rs.150 crore was set for the

1	2.	3.
		entire duration of Ninth Plan in this regard, owing to extra-ordinary procurement problems and huge losses. The performance of the Uranium Corporation of India Limited (UCIL) in mobilising IEBR is also dismal, as it has not been able to generate any IEBR since 1997-98 as against a target of Rs. 50 crore for the Ninth Plan period. The Committee do not appreciate the fixation of unrealistic IEBR targets year after year. It is understood that the capacity of the Department to raise resources from the International market is bleak and their position of internal accruals not too healthy. Therefore, it would be prudent on the part of the Department to set IEBR targets at realistic/achievable levels. The Committee have recommended to this effect a number of times in the past. They reiterate the same, expecting the Department to wake up to the reality and take corrective action in this direction.
4.	2.30	The Committee are dismayed to note that under Major Heads 4801 (relating to Capital expenditure on Plan schemes covered under Power Sector), 5401 (relating to Capital expenditure on Plan schemes covered under R&D Sector) and 4861 (relating to Capital expenditure on Plan schemes of I&M Sector and Non-Plan requirement for operational expenses of Heavy Watt Plants), Plan expenditure during 1998-99 has been short of Plan BE by Rs.24.46 crore, Rs.46.50 crore and Rs.34.88 crore respectively. The reasons for shortfall under Major Head 4801 have been cited as difficulty in importing the helium refrigeration unit required for additional upgrading facility of new power plant and non-completion of supply of equipment by the Bharat Heavy Electricals Limited (BHEL) and Larsen and Tourbo (L&T) for the Prototype Fast Breeder Reactor (PFBR) Project. Similarly, the shortfall under Major Head 5401 has been attributed to

1	2.	3.
		non-receipt/ delay in procurement of machinery and equipment for various projects. As regard Major Head 4861, the shortfall in Plan expenditure during 1998-99 has been stated to be due to slow progress of infrastructure facilities, non-receipt of financial sanction, delay in procurement of machinery and equipment, delay in finalisation of work and reduction in financial assistance to the Uranium Corporation of India Limited (UCIL) following unexpected difficulty in importing some high value items. The Committee are of the view that the reasons cited above for shortfall in expenditure clearly point to nothing but administrative slackness on the part of the Department. The Committee note that consequent upon mid-term review of Ninth Plan, there has been major reduction in Plan activities under Major Heads 4801 and 4861. The Committee while recommending that the Department should not only make an in-depth analysis of the various factors attributed to the shortfall in expenditure but also desire that action should be taken against those vendors who were responsible for delayed/ inadequate supplies of equipment and machinery. Wherever possible, a penalty clause should be incorporated in the tender/ agreement documents so as to ward off any delay and inadequate supply of critical equipment and machinery. Other appropriate remedial measures should also be taken to check such problems for their future programmes.
5.	2.25	From the financial allocations made and utilisation thereof, it is seen that the Nuclear Fuel Complex (NFC) has failed to fully utilise the Plan budgetary allocations for three consecutive years from 1996-97 to 1998-99. The shortfall in expenditure has been to the tune of Rs.5.93 crore, Rs.2.82 crore and Rs.6.32 crore respectively. The

1	2.	3.
		reasons cited for shortfall are delay in indenting, spilling over of certain payment to subsequent year and delay in delivery of equipment. It is also observed that Plan BE for the year 1999-2000 in respect of NFC has been scaled down from Rs.15 crore to Rs.5.75 crore at RE stage. This reduction has been attributed to a hold on implementation of one project pending a review of its scope and the anticipated delay in delivery of certain equipment. The Committee feel that the reasons advanced for shortfall / reduction in expenditure / estimates are not convincing at all. They take a serious view of the failure on the part of the organisation to fully utilise the budgetary allocations over the years. The Committee expect the organisation to carefully analyse the reasons for shortfall and take steps in the right direction in future.
6.	2.49	The Committee are concerned to note that the physical performance of the Electronics Corporation of India Limited (ECIL) during 1998- 99 and 1999~ 2000 has been rather dismal. Actual production and net sales of the company during the above period have been far short of the targets set in this regard. The financial performance of the company during 1998-99 has been equally bad. The gross earning, gross profit and net profit of the company during the year have gone down to unimaginably low levels. Inability to generate business/ sales volume, heavy salary burden of man-power, working capital constraints, difficulties in obtaining adequate business in Nuclear Power, Defence and Telecommunications Sectors, intense competition from Private Sector Companies and Public Sector Undertakings, etc. have been cited as reasons for poor performance of the company. Moreover, ECIL does not enjoy the advantages of excise duty

1	2.	3.
		concession and receipt of orders on nomination basis available to Public Sector Undertakings (PSUs) of the Ministry of Defence. The Committee have been informed that the company has initiated a re-structuring process encompassing product rationalisation and downsizing of manpower and that a detailed proposal is being drawn up to seek Government approval therefor. The Committee would like to be informed of the details of the said proposal as also the action taken by the Government thereon. The Department should take up with the Ministry of Defence and/or Finance the question of charging similar excise duty from ECIL as from other Defence Undertakings. Pending finalisation of re-structuring exercise, the Government should take steps for transfer and export of emerging frontier technologies to other developing countries. With the availability of infrastructure and trained man-power at their disposal, ECIL should also consider Information Technology (IT) Industry as another viable means to improve their bottom-lines.
7.	2.67	The Committee note that the Department aim at setting up about 20,000 MWe of nuclear power generating capacity in the country by the year 2020. This appears to be an over-ambitious and unrealistic programme considering the fact that the total cost involved in this venture is a whopping Rs. 96,400 crore(1996 constant rupee value) without including financing cost and escalation, particularly when the Nuclear Power Corporation of India Limited (NPCIL) has a limited operating base and consequently, its capacity to raise internal resources is grossly limited. Besides, NPCIL also does not have access to long-term maturity loans. Moreover, NPCIL is also plagued by the menace o heavy arrears

1	2.	3.
		outstanding dues from various power utilities. The committee, therefore, feel that it would be better if the Department draw up a plan fixing short and achievable targets to be achieved in the short time-frames and make concerted efforts to achieve those targets which could ultimately lead to their target of 20,000 MWe. While fixing the targets, care may be taken not to put too much reliance on the kind of reactors which would depend on global political situation. The Committee feel that if NPCIL is to achieve its targets, then it should be provided with sufficient budgetary support for 8 to 10 years.
8.	2.68	The Committee are concerned to note the growing menace of outstanding dues from power utilities/ State Electricity Boards (SEBs) to the Nuclear Power Corporation of India Limited (NPCIL) over the years. The amount of outstandings (including Delay Payent charges) which was Rs. 2560.66 crore as on 31st March 1998, decreased to Rs. 2456.10 crore as on 31st March 1999. However, the Committee find that the position has deteriorated subsequently and as on 29th February 2000, the outstandings have gone up to Rs. 2656.36 crore in spite of a number of corrective steps taken by NPCIL. The Committee have been informed that most of the SEBs have opened Letters of Credit (LCs) to ensure timely payments of current bills against sale of power from the Nuclear Power Stations and as a result, cash flows to NPCIL have improved considerably. However, NPCIL seems to be having problems in timely recovery of past outstandings as the percentage of appropriation of Central Plan Assistance (CPA) is restricted to 15% of the CPA due to the State Government and the CPA so recovered is distributed among all the Central power generating companies, coal companies,

1	2.	3.
		etc. The Committee have further been informed that NPCIL has reached a settlement with the Rajasthan State Electricity Board (RSEB) in 1998- 99 in regard to payment of outstanding dues. The Committee hope that NPCIL would make vigorous efforts to reach similar settlements with other SEBS. Some incentives like partial waiving of Delay Payment Charges, etc. may also be offered to the SEBs in order to attract them to go in for settlement.
9.	2.69	The Committee note that the actual gestation periods of Nuclear Power Projects so far constructed in the country from the first pour of concrete to synchronisation have varied from 54 to 150 months. The Committee further note that the current gestation period of our Nuclear Power Projects is 7 years. The longer gestation periods are mainly attributable to learning phase, indigenisation efforts and focus on self-reliance. The Committee are happy to note that the Department have taken a number of steps such as obtaining regulatory clearance in advance, carrying out pre-project activities beforehand, etc. to reduce this period to about six to six and a half years. The Committee would, however, like the Department to further reduce the period to about five and a half years so as to avoid the cost overruns of Nuclear Power Projects. Further, the Committee understand that NPCIL has difficulties in going in for substantial market borrowings because of prevailing high market rate of interest on loans. Besides, the bonds issued by NPCIL have short maturity period vis-a-vis the current gestation period of Nuclear Power Projects. The Committee, therefore, recommend that long-term maturity loans be made available to NPCIL at reasonable rates of interest.

1	2.	3.
10.	2.73	The Committee note that Atomic Power Stations have been set up in southern western and northern parts of the country. The eastern and north-eastern parts have perhaps not been explored as far as setting up of such stations is concerned. The Committee are of the view that this exercise needs to be undertaken on priority basis considering the fact that coal is an exhaustible source of energy. The Committee therefore, recommend that the Department should explore the feasibility of setting up of Atomic Power Stations in these regions. They should make a detailed and in-depth study of various aspects such as economic, strategic, environmental, safety, etc. involved in the process and may consider such sites for their future projects.
11	2.84	The Committee are happy to note that the Commercial Demonstration Plant for Radiation Processing of Spices at Navi Mumbai has become operational and that the POTON Plant at Lasalgaon, Maharashtra is likely to be completed by December, 2000. The Committee hope that these plants would go a long way in preserving spices, potatoes and onions for longer periods. They desire that after analysing the commercial success these plants, the Department should go in for setting up more such plants in other parts of the country like Punjab and Haryana in collaboration with other agencies. The Department should realise that unless entrepreneurs are fully able to comprehend the technology involved in these plants and are satisfied with- its efficacy, it is highly unlikely that they would come forward to invest in this venture. The Department have therefore, to make concerted efforts to explain the technology to the prospective entrepreneurs. They should organise

1	2.	3.
		Demonstration programmes at various places to prove their point, besides resorting to holding of seminars and distribution of written pamphlets on the subject. Based on experience gained from their work on these plants, they should also endeavour to bring in further improvement in the technology if it is called for.
12.	2.85	The Committee are happy to note that the Bhabha Atomic Research Centre (BARC) has developed 22 crop varieties relating to greengram, blackgram pigeon pea, groundnut, mustard, jute and rice and released the same in commercial cultivation. These crop varieties were released between 1973 and 1995. The Committee are also happy to note that the percentage yield increase of these crops over normal varieties varies from 10% to 80%. At the same time, they have noted that BARC has not released any crop variety of rice has been released so far and that too as far back as in 1988. The Committee recommend that the Department / BARC should broad-base their agricultural R&D programme and develop / improve food crop varieties as it would go a long way in boosting agricultural production in the country. However, in developing high yield variety seeds, due care should be taken to protect their nutrition values. The Department / BARC should undertake collaborative R&D programmes with the Indian Council of Agricultural Research (ICAR) and other agricultural universities, especially in the eastern region, where both production and yield are abysmally low. They should also organise 'Kisan Melas' in collaboration with Agricultural Extension Departments of States / Krishi Vigyan Kendras and also hold periodic seminars in rural areas for dissemination of the relevant information for the use of farmers.

APPENDIX

PART II

(Vide para 2.3 of the Report)

(Rs. in crore)

Sl.No.	Major Heads	1998-99 Actual		1999-2000 B.E.		2000-01 R.E.		2000-01 B.E.		Remarks
		Plan	Non-Plan	Plan	N-Plan	Plan	N-Plan	Plan	Non-Plan	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Demand No. Revenue Section										
1.	3451	-	7.82	-	8.23	-	8.78	-	8.98	This head comprises items like salaries etc. of Sectt. And Atomic Energy Commission
2.	2852	5.78	418.89	23.30	546.87	3.30	561.34	9.30	625.47	This head comprises items like Bhabha Atomic Research Centre, Nuclear Fuel Complex, Fuel Reprocressing Plants, Industry and Extension Programme and Support Services
3.	3401	115.13	548.38	124.48	587.19	132.93	615.07	149.10	648.51	This head comprises items like R&D expenditure of Bhabha Atomic Research Centre, Aided Institutions. IGCAR, CAT and contribution to International Atomic Energy Agency

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Capital Section										
4.	4859	11.00	-	11.00	-	11.00	-	.01	-	This head comprises items like investment in Electronics Corporation of India Ltd.
5.	4861	103.12	436.61	203.73	439.72	122.12	441.31	230.68	469.68	This head comprises items like Bhabha Atomic Research Centre, Nuclear Fuel Complex, Heavy Water Board, Fuel Reprocessing Industry and Extension Programme
6.	5401	127.90	-	200.52	-	201.90	-	270.90	-	This head comprises items like Bhabha Atomic Research Centre, IGCAR, VECC, CAT etc.
7.	6859	11.00	15.00	6.97	1.00	6.97	1.00	.01	-	This head comprises items like loans to Electronics Corporation of India Ltd.
Demand No.91										
Revenue Section										
8.	2801	-	1197.32	-	1435.37	-	1435.37	-	1636.34	This head comprises items like Power Project Fuel Inventory and Waste Management
Capital Section										
9.	4801	795.54	-	848.00	-	862.30	-	731.00	-	This head comprises items like Investment in Power Projects and FBTR
10.	6801	-	-	102.00	-	59.00	-	163.00	-	This head comprises items like Loans to Power Projects

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Demand No.90										
Adjustment of Recoveries as reduction of expenditure										
Revenue Section										
11.	2852	-	(-)5.78	(-)2.57	(-)1.80	-	(-)1.80	-	(-)2.00	
12.	3401	-	(-)6.26	-	(-)6.76	-	(-)7.48	-	(-08.03	
Capital Section										
13.	4861	-	(-)185.27	-	(-)121.40	-	(-)109.05	-	(-)163.11	

ANNEXURE I

MINUTES OF THE SIXTH SITTING OF THE STANDING COMMITTEE ON ENERGY (1999-2000) HELD ON 29th MARCH, 2000 IN COMMITTEE ROOM 'C' PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 11.00 hours to 13.30 hours

PRESENT

Shri Sontosh Mohan Dev - Chairman

MEMBERS

2. Shri Basudeb Acharia
3. Shri Prakash Yashwant Ambedkar
4. Shri Rajbhar Babban
5. Shri Vijayendra Pal Singh Badnore
6. Shri Lal Muni Chaubey
7. Shri M. Durai
8. Shri C.K.Jaffer Sharief
9. Shri Dalpat Singh Parste
10. Shri Amar Roy Pradhan
11. Shri Chandra Pratap Singh
12. Shri Tilakdhari Prasad Singh
13. Shri P.R.Khunte
14. Shri Aimaduddin Ahmad Khan (Durru)
15. Shri Vedprakash P.Goyal
16. Shri Jalaludin Ansari

SECRETARIAT

1. Shri JohnJoseph - Joint Secretary
2. Shri P.K.Bhandari - Deputy Secretary
3. Shri R.S.Kambo - Under Secretary

WITNESSES

1.	Dr. R Chidambaram	-	Secretary, DAE
2.	Dr. Anil Kakodkar	-	Director, BARC
3.	Dr. YS.R Prasad	-	CMD, NPCIL
4.	Prof. S.P.Sukhatme	-	Chairman, AERB
5.	Dr. S.B. Bhoje	-	Director, IGCAR
6.	Dr. C.Ganguly	-	Chief Executive, NFC
7.	Dr. D.C. Banerjee	-	Director, AMD
8.	Shri R.M.Premkumar	-	Addl. Secy., DAE
9.	Shri A Dasgupta	-	Joint, Secy., DAE
10.	Smt. Sudha Bhave	-	Joint Secy., DAE
11.	Shri A.R. Kale	-	Chief Controller of Accounts, DAE
12.	Dr. S.Gangadharan	-	Chief Executive, BRIT
13.	Shri V.H.Ron	-	CMD, ECIL
14.	Shri RB.Grover	-	Tech. Adviser to Chairman
15.	Shri B.R.Sharma	-	Director, DAE
16.	Kum. Mithlesh Sharma	-	Joint Director (OL), DAE
17.	Shri K LA. Subramanian	-	Director, DAE
18.	Shri S.K. Malhotra	-	Head, Publicity Division
19.	Shri K Balu	-	Director, FRNWM, BARC
20.	Shri KJ. Sebestian	-	Director, NPC

At the outset, the Chairman, Standing Committee on Energy welcomed the representatives of the Department of Atomic Energy to the sitting of the Committee and apprised them of the provision of Direction 58 of the Direction by the Speaker.

2. Thereafter, the Secretary of the Department of Atomic Energy gave visual presentation highlighting various activities of the Department.

3. The Committee then took oral evidence of the representatives of Department in connection with the examination of the Demands for Grants (2000-2001) of the Department.

4. The following important points were discussed by the Committee:-

(i) Budgetary allocation to the Department
(ii) Mobilisation of Internal and Extra Budgetary Resources (IEBR)
(iii) Status of Kudankulam Project
(iv) Safety of nuclear installations
(v) Growth of nuclear power in India
(vi) Renovation and Modernisation of Nuclear Plants
(vii) Rajasthan Atomic Power Project
(viii) Nuclear fuel
(ix) Disposal of nuclear waste
(x) Performance of the Electronics Corporation of India Ltd.(ECIL)
(xi) Private Sector participation in nuclear power generation
(xii) Gestation period and Plant Load Factor of Nuclear Power Projects
(xiii) Development of improved crop varieties
(xiv) POTON and Spices irradiator Plants

5. A copy of the verbatim proceedings of the sitting of the Committee has been kept on record.

The Committee then adjourned.

ANNEXURE II

MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE ON ENERGY (1999-2000) HELD ON 11TH APRIL, 2000 IN COMMITTEE ROOM 'C' PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 11.30 hours to 13.00 hours

PRESENT

Shri Sontosh Mohan Dev – Chairman

MEMBERS

2. Shri Prakash Yashwant Ambedkar
3. Shri Rajbhar Babban
4. Shri Vijayendra Pal Singh Badnore
5. Shri M. Durai
6. Shri Sanat Kumar Mandal
7. Shri Amar Roy Pradhan
8. Shri Ravindra Kumar Pandey
9. Shri Dalpat Singh Parste
10. Shri Chada Suresh Reddy
11. Shri Harpal Singh Sathi
12. Shri Chandra Pratap Singh
13. Shri Tilakdhari Prasad Singh
14. Shri Ramji Lal Suman
15. Shri Gandhi Azad
16. Shri E. Balanandan
17. Shri Brahamkumar Bhatt
18. Shri Manohar Kant Dhyani
19. Shri Aimaduddin Ahmad Khan (Durru)
20. Shri Ananta Sethi
21. Shri Vedprakash P.Goyal
22. Shri Rama Shankar Kaushik
23. Shri Santosh Bagrodia

SECRETARIAT

1.	Shri John Joseph	-	Joint Secretary
2.	Shri P.K.Bhandari	-	Deputy Secretary
3.	Shri R.S.Kambo	-	Under Secretary

2. At the outset, the Chairman welcomed the Members to the sitting of the Committee.

3. The Committee considered and adopted the following Draft Reports with some modifications:

(i) Draft Report on Demands for Grants (2000-01) of the Ministry of Power

(ii) Draft Report on Demands for Grants (2000-01) of the Ministry of Non-Conventional Energy Sources.

(iv) Draft Report on Demands for Grants (2000-01) of the Department of Atomic Energy.

4. The Committee authorised the Chairman to finalise the Reports after making consequential changes arising out of factual verification by the concerned Ministries/ Department and to present these Reports to both the Houses of Parliament during the current Session.

5. The Committee decided to meet again on 28th April, 2000.

The Committee then adjourned.