

**14**

**STANDING COMMITTEE  
ON ENERGY  
(1996-97)**

**ELEVENTH LOK SABHA**

**DEPARTMENT OF ATOMIC ENERGY**

**DEMANDS FOR GRANTS (1997-98)**

**FOURTEENTH REPORT**



**LOK SABHA SECRETARIAT  
NEW DELHI**

*3657R*

*April. 1997/Vaisakha, 1919 (Saka)*

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STANDING COMMITTEE ON ENERGY  
(1996-97)

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DEPARTMENT OF ATOMIC ENERGY

DEMANDS FOR GRANTS (1997-98)

*Presented to Lok Sabha on 15.04.1997  
Laid in Rajya Sabha on .....*



LOK SABHA SECRETARIAT  
NEW DELHI

*April, 1997/Vaisakha, 1919 (Saka)*

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**COMPOSITION OF THE STANDING COMMITTEE ON ENERGY  
(1996-97)**

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**Shri Jagmohan**

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1. Shri S.N. Mishra	—	<i>Additional Secretary</i>
2. Smt. Roli Srivastava	—	<i>Joint Secretary</i>
3. Shri G.R. Juneja	—	<i>Deputy Secretary</i>
4. Shri A.S. Chera	—	<i>Under Secretary</i>

## INTRODUCTION

I, the Chairman, Standing Committee on Energy, having been authorised by the Committee to present the Report on their behalf, present this Fourteenth Report on the Demands for Grants (1997-98) relating to the Department of Atomic Energy.

2. The Committee took evidence of the representatives of the Department of Atomic Energy on 9th April, 1997.

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 19th April, 1997.

NEW DELHI;  
April 25, 1997  
Vaisakha 5, 1919 (Saka)

JAGMOHAN,  
*Chairman,*  
*Standing Committee on Energy.*

## REPORT

## PART I

## 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 1997-98:—

**Demand No. 88**

Relating to Revenue and Capital  
Expenditure on Atomic Energy  
Research and Development, Industrial  
Projects and the Secretariat of  
the Department Rs. 1417.73 crores.

**Demand No. 89**

1.2 The two Demands aggregating to Rs. 2540.82 crores comprise of Rs. 706.20 crores for Plan schemes and Rs. 1834.62 crores for Non-Plan expenditure. In addition, Plan schemes to an extent of Rs. 578.00 crores are to be met from Internal and Extra Budgetary Resources.

1.3 The details of actual revenue and capital expenditure for the year 1995-96, the Budget and Revised Estimates for 1996-97 and Budget Estimates for 1997-98 of the Department are as under :—

(Rs. in Crores)

Sl. No.	Major Heads	1995-96		1996-97		1997-98		1997-98		Remarks	
		Actuals		B.E.		R.E.		B.E.			
		Plan	Non- Plan	Plan	Non- Plan	Plan	Non- Plan	Plan	Non- Plan		
1	2	3	4	5	6	7	8	9	10	11	
<b>Demand No. 88</b>											
<b>Revenue Section</b>											
1.	3451	—	5.75	—	5.43	—	5.74	—	6.43	This head comprises items like salaries etc. of Sectt. and Atomic Energy Commission.	
2.	2852	3.00	218.49	4.00	217.27	4.00	256.47	—	291.15	This head comprises items like Bhabha Atomic Research Centre, Nuclear Fuel Complex, Fuel Reprocessing Plants, Industry and Extension programme and Support Services.	

1	2	3	4	5	6	7	8	9	10	11
3.	3401	51.22	325.63	54.90	335.35	54.90	349.07	74.68	395.04	This head comprises items like R&D expenditure of Bhabha Atomic Research Centre, Aided Institutions, IGCAR, CAT, contribution to International Atomic Energy Agency.
4.	4425	—	—	—	—	—	0.01	—	—	0.01
5.	4859	1.00	—	1.00	—	1.00	—	—	10.03	—
6.	4861	105.70	346.03	125.76	362.18	121.51	359.09	109.97	369.79	This head comprises items like Bhabha Atomic Research

1	2	3	4	5	6	7	8	9	10	11
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										Centre, Nuclear Fuel Complex, Heavy Water Board, Fuel Reprocessing industry & Extension programme.
7.	5401	106.13	—	110.10	—	114.35	—	150.32	—	This head comprises items like Bhabha Atomic Research Centre, IGCAR, VECC, CAT etc.
8.	6859	1.00	6.24	1.00	—	1.00	—	10.00	—	This head comprises items like loans to Electronics Corporation of India Ltd.
9.	7475	—	0.20	—	0.25	—	0.31	—	0.31	This head comprises items like loans to co-operative Societies.
<b>Demand No. 89</b>										
<b>Revenue Section</b>										
10.	2801	—	503.46	—	531.11	—	661.16	—	771.89	This head comprises items like Power Project Fuel Inventory



## I. Budgetary Provisions

### (A) *Shortfall in Expenditure :*

1.4 The Budget Estimates and Actual Expenditure of 1995-96 Budget Estimates and Revised Estimates for 1996-97 and Budget Estimates for 1997-98 under the two Demands of the Department viz., Demand No. 88 (Atomic Energy) and Demand No. 89 (Nuclear Power Schemes) are as indicated in the following abstract statement:

(Rs. in crores)					
	B.E. 1995-96	Actuals 1995-96	B.E. 1996-97	R.E. 1996-97	B.E. 1997-98
Budgetary Support	2074.30	1963.33	2098.60	2278.85	2540.82
IEBR	886.73	544.11	695.00	420.72	578.00
Total	2961.03	2507.44	2793.60	2699.57	3118.82

### IEBR—Internal and Extra Budgetary Resources.

1.5 The actual expenditure of the Department during 1995-96 is short of the Budgeted amount of Rs. 2961.03 crore by as much as Rs. 453.59 crore. Of this, shortfall in expenditure to the extent of Rs. 342.62 crore is attributable to non-realisation of IEBR as envisaged and the balance amount of shortfall (Rs. 110.97 crore) appears to have been surrendered by the Department from the Budgetary support component of the approved outlay for the year. Also, the Revised Estimates of expenditure for the year 1996-97 is short of the Budgeted amount for the year by as much as Rs. 94.03 crore.

1.6 Asked to specify the reasons for shortfall in expenditure/surrendering of funds to the extent of Rs. 110.97 crore from the Budgetary Support component of the approved outlay for the year 1995-96, the Department, in a written reply, stated that under Demand No. 88—Atomic Energy, as against a provision of Rs. 1258 crore, the actual expenditure was Rs. 1170 crore, which resulted in a saving of Rs. 88 crore. As for Grant No. 89—Nuclear Power Schemes, the Department informed that an amount of Rs. 26 crore comprising of Rs. 12 crore under Non-Plan (Revenue) Section and Rs. 14 crore under Plan (Capital) Section could not be utilised during the year.

1.7 Detailing the reasons for the savings that occurred during the year 1995-96 under Demand No. 88—Atomic Energy, the Department, in their written reply stated as under :

“The major savings under the Capital Section of the Plan Schemes are due to reduction in financial assistance to Public Sector Undertakings viz. Uranium Corporation of India Ltd., and Indian Rare Earths Ltd., reduction in expenditure under various Capital Projects/Schemes of I&M Sector and difficulties in finding sources of critical equipment for projects of strategic nature.

The operational expenses of the Heavy Water Plants are provided under the Non-Plan section of the Capital budget. As against a provision of Rs. 379 crore for the above, the actual expenditure was Rs. 346 crore resulting in a saving of Rs. 33 crore. The main reason for this saving was the postponement of annual maintenance of the Heavy Water Plants at Baroda, and Manuguru, and a six months outage in Heavy Water Production Unit at Tutticorin. However, these savings did not affect the targetted production of Heavy Water.”

1.8 Non-utilisation of funds to the extent of Rs. 26 crore during the year under Grant No. 89—Nuclear Power Schemes, has been stated to be due to prolonged shut-down of Rajasthan Atomic Power Station-I and deferment/delay in the delivery of machinery and equipment under projects like Waste Immobilisation Plant, CWS High Technology facility, Additional Upgrading Facilities for Nuclear Power Schemes etc., of BARC.

1.9 The Department was asked to furnish details of the Budget Estimates and Actual expenditure for the year 1994-95, inclusive of both Budgetary Support and IEBR (Internal and Extra Budgetary Resources) components. In reply, the Department furnished the undermentioned information :

	B.E. 1994-95	Actuals 1994-95 (Rs. in Crores)
Budgetary Support	1969.03	1698.31
IEBR	1041.76	609.73
	3010.79	2308.04

1.10 The Committee have been informed that the operating base of the installed nuclear capacity was insufficient to generate sizeable surpluses for funding the Nuclear Power Programme. Mobilising significant borrowings from the capital market has been stated to be difficult. Also, Nuclear Power Corporation had no access to overseas funding. The Committee had, therefore, in their Report on Demands for Grants of the Department for the previous year, emphasized on the need of bringing down the estimates of IEBR in the plan budget to a realistic level.

1.11 Enquired about the role and feasibility of the measure of generating internal and extra budgetary resources to finance the programmes of the Department, a representative of DAE stated during evidence :

"Once the budgetary support is reduced, then the expenditure which is proposed is balanced by means of IEBR.....

In the past two years, we have been bringing it to the notice of the Government that because of the large amounts of borrowings in the past, we are likely to face financial problems with regard to repayment and accordingly the Government has now been reducing the insistence on mobilisation of borrowing from the capital market."

**B. Shortfall in Capital expenditure on Atomic Energy Industries (Major Head—4861)**

1.12 Provisions relating to capital expenditure on schemes covered under the Industry and Minerals (I&M) Sector are provided for under Major Head 4861. The Budget Estimates and Actual Expenditure of 1995-96, Budget Estimates and Revised Estimates for 1996-97, and Budget Estimates for 1997-98 under major Head 4861 are as under :

(Rs. in Crores)

	B.E. 1995-96	Actuals 1995-96	B.E. 1996-97	R.E. 1996-97	B.E. 1997-98
Plan	176.00	105.70	125.76	121.51	109.97
Non-Plan	379.06	346.03	362.18	359.09	369.79
Total	555.06	451.73	487.94	480.60	479.76

1.13 During the year 1995-96, there has been a shortfall to the extent of Rs. 103.33 crore in utilisation of the approved outlays for meeting the Capital expenditure on schemes covered under the I&M Sector. Of this, shortfall in utilisation of the Plan outlay has been to the extent of Rs. 70.30 crore and the shortfall in utilisation of Non-Plan outlay has been to the extent of Rs. 33.03 crore. Further, the Plan outlay for the Schemes under I&M Sector for the current year (1997-98) at Rs. 109.97 crore is significantly lower than the approved outlay for the earlier years.

1.14 Asked to give the reasons for the huge shortfall in utilisation of the approved outlays for the Schemes (Plan and Non-Plan) during the year 1995-96, the Department, in a written reply, stated that savings under the 'Plan outlay' to the extent of Rs. 70 crore was mainly on account of reduction in financial assistance to Public Sector Undertakings due to delay in their Projects and, reduction in Plan Capital expenditure in Industry and Minerals Sector of BARC & IGCAR etc.

1.15 The shortfall in expenditure of Rs. 33 crore under 'Non-Plan' has been attributed to the following :—

- (i) Outage of Heavy Water Project, Tutticorin, for about half of the year due to major equipment failure.
- (ii) Postponement of the annual maintenance of the Projects at Baroda and Manuguru.
- (iii) Reduced supply of consumables like coal, FHO & LDO and other material.

1.16 The Department has also stated that these savings have not affected the overall targetted production of the Heavy Water Board.

1.17 During evidence, the Committee expressed regret over the Department's inability to utilise the budgetary outlays and implement projects in a time bound manner. In response, the Secretary, DAE informed that the Department was advised to cut down expenditure due to resource constraints.

1.18 The Committee expressed the opinion that the inability to utilise the budgetary resources and execute projects in a time bound manner amounted to a failure on the part of the Department. In reply, the Secretary, DAE, while expressing agreement that delays should be

minimised and resources that are made available are properly utilised, also added during evidence that difficulties were often faced in import of the required equipment due to 'dual technology controls', which results in delaying the execution of Projects. The Secretary also informed that the Department was now a 'little better in terms of using resources as much as possible' and expressed the Department's hope to 'reduce delays in the Ninth Plan period.'

**1.19** The Committee observe that during the year 1995-96, the actual expenditure of the Department was short of the Budgeted amount of Rs. 2961.03 crore by as much as Rs. 453.59 crore. Whereas shortfall in expenditure to the Extent of Rs. 342.62 crore is attributable to non-realisation of Internal and Extra Budgetary resources as envisaged in the Plan Budget, a net amount of Rs. 110.97 crore was not expended by the Department from the Budgetary Support component under the two Grants viz. Grant No. 88—Atomic Energy and Grant No. 89—Nuclear Power Schemes. The inability of the Department to generate the envisaged internal and extra budgetary resources appears to be owing to the low operating base of the installed nuclear capacity to generate sizeable surpluses as well as the problems associated with mobilizing significant borrowings from the Capital Market. Yet, what the Committee are troubled to note is the inability of the Department to utilise the budgetary resources provided under the two Grants. The Committee feel that the shortfalls in expenditure—shown as savings in the Grants—are indicative of Poor budgeting or shortfall in performance for which corrective measures are required to be taken. The Committee are of the view that such shortfalls in expenditure imply a miserable failure on the part of the organisation to utilise the allocations. That the shortfall in expenditure is more pronounced in the Industry and Minerals (I&M) Sector is brought out in the succeeding paragraph.

**1.20** From the figures relating to Budget Estimates and Actual Expenditure for the year 1995-96, the Committee observe that the shortfall in Capital Expenditure on Schemes covered under the Industry and Minerals (I&M) Sector has been to the extent of Rs. 103.33 crore. Of this, shortfall in 'Plan Expenditure' to the extent of Rs. 70 Crore has been attributed to the reduction in financial assistance to public sector undertakings due to delay in their projects and, reduction in plan capital expenditure for projects/schemes of

**I&M Sector.** On the Non-Plan side, shortfall in expenditure to the extent of Rs. 33 crore has been attributed to postponement of annual maintenance of Heavy Water Plants at Baroda and Manuguru and six months outage in the Heavy Water Project at Tutticorin. Though the Department has indicated that the shortfall in expenditure earmarked for the operational expenses of Heavy Water Plants has not affected the production of the plants, the Committee are not convinced of this possibility. Either the Budgeting was faulty or the information furnished by the Department about the performance of Heavy Water Plants during 1995-96 incorrect. The Committee expect a clarification in this regard.

1.21 The Committee feel constrained to observe that a significant amount of the shortfall in capital expenditure of I&M Sector as well as the Nuclear Power Sector has been owing to delays in execution of Projects/procurement of equipments. The Committee observe that the resources available are meagre and the allocations low. Yet, there is shortfall in expenditure on sanctioned projects. The Committee, therefore, urge that appropriate measures need to be taken to ensure that the projects/schemes of the Department are implemented in a time bound manner. The Committee also emphasise that estimates for each project/scheme should be framed accurately after a careful and indepth examination of the requirement of funds.

## **II. Uranium Corporation of India Ltd. (UCIL)**

1.22 The Uranium Corporation of India operates Uranium Mines at Jaduguda, Bhatin and Narwapahar, a Uranium Mill at Juduguda, and Plants for uranium recovery and by-products. The Company mines uranium ore and manufactures yellow cake for fabrication of uranium fuel by NFC.

1.23 The Gross Eighth Plan outlay for UCIL and year-wise allocation and utilisation of Budgetary resources during the Plan period as observed from the Performance Budget of the Department (1997-98) are as under :

(Rs. in crores)

VIII Plan 1992-93	1992-93		1993-94		1994-95		1995-96		1996-97		Cumulative Expenditure of VIII Plan
	B.E.	Actl.									
350.00	53.00	51.48	58.00	41.62	60.70	70.84	60.00	37.83	25.00	15.00	216.77

1.24 The post tax Net Profit (+)/Loss(-) of UCIL since 1994-95 as observed from the Performance Budget (1997-98) is shown below :

(Rs. in crores)

Projected 1994-95	1995-96		1996-97		1997-98	
	Achieved	Projected	Achieved	Projected	Anticipated	Projected
2.35	8.02	4.04	0.79		2.23	(-)34.85
						2.21

1.25 The utilisation of Budgetary allocations by UCIL has been lower than the approved outlays. Whereas the shortfall in utilisation of the outlays has been more significant during the year 1995-96, the total shortfall in utilisation of the Eighth Plan outlay of UCIL is likely to be to the extent of Rs. 133.23 crore.

1.26 Asked about the reasons for the shortfall of more than Rs. 133 crore in the Eighth Plan expenditure in respect of UCIL, the Department, in a written reply, *inter-alia*, stated that the project proposals of UCIL initially formulated under the '10,000 MW Nuclear Power Profile of 1984-85' at an estimated cost of Rs. 495.54 crore were modified, as a result of which the project costs were brought down to Rs. 342.02 crore thereby reducing the requirement of funds during the VIII Plan. The actual budget provision during the VIII Plan period was Rs. 256.70 crore against which Rs. 216.70 crore was expended. The shortfall in expenditure during the Plan period was Rs. 39.93 crore.

1.27 On the reasons for declining profits and the likely loss to be incurred by UCIL during 1996-97, the Department has stated that the loss of Rs. 34.85 crore indicated for 1996-97 was a tentative figure 'based on the pre-revised rate of compensation for yellow cake approved for the year 1995-96' and that the 'rate of compensation will be refixed before the finalisation of the accounts of the Company for the year', which would be retrospectively applicable.

1.28 As observed from the Performance Budget (1997-98), the major projects and expansion schemes of UCIL are, Shaft Sinking & Mining Development Works, and expansion of Jaduguda Mill. Whereas the work at III Stage Shaft Sinking has been stated to have progressed, the Jaduguda Mill expansion plant is expected to be commissioned in March, 1998 as against the revised date of completion—September 30, 1995.

1.29 In response to a question on the original cost estimate of Jaduguda Mill Expansion Plant, time schedule of completion of the Project as initially envisaged, subsequent revisions and the reasons therefor, the Department, in a written reply, *inter-alia*, informed as under :—

"The Jaduguda Mill Expansion approved in October, 1994 as part of the modified programme has an approved cost of Rs. 95.37 crore. It is expected that the Mill Expansion will be completed

within the sanctioned cost of Rs. 95.37 crore. According to the original sanction, the Mill Expansion was to be completed by June, 1995."

1.30 Detailing the actual progress of work so far, the Department has informed that, the 1st stage of completion with part production has been achieved in July, 1996; 2nd stage of completion to achieve rated production of 2090 MT ore processing per day is expected to be achieved by the middle of 1997; and 3rd and final stage of the completion of the Project is expected to be achieved by 01.04.1998.

1.31 The reasons for the delay in completion of the project as informed by the Department include, change of layout and site because of constraints encountered during detailed engineering; location of HT cable and water pipeline in areas chosen for installation of new grinding and screening circuit; site constraints; delay in supply of equipment and delay in placement of orders; bad law and order situation; change of contractors for Leaching etc.,

1.32 To a query whether the Jaduguda Mill expansion project would be completed within the approved cost of Rs. 95.37 crore despite the delays in executing the project, the CMD, UCIL stated during evidence :—

"...regarding mill expansion, I would say that it will be completed within the plan budget of Rs. 95.37 crore...In this project, part production has already started in December, 1996 and full scale production is going to start in May, 1997".

1.33 Questioned about the frequent change of contractors assigned with the work of Mill Expansion Project, the CMD, UCIL stated during evidence :—

"The order was given to Andrew Yule because it is a public sector undertaking..... The price preference had to be given. They were coming in the way. They were competing with others and, therefore, we had to give it. They failed, again and again, miserably. The rubber parts were brought by them, but we paid the money to the suppliers. They did not have any money. So, we were paying directly to them. We said that they should make the vessels and we would do the rubber lining. Many changes had taken place and ultimately we had given it to McNally Bharat. The vessels

have now been completed and we are doing the rubber lining. As I mentioned, by May, 1997 this year, they will be commissioned."

**1.34** The Committee observe that the shortfall in utilisation of the 8th Plan outlay for the projects of UCIL has been to the extent of Rs. 33.93 crore. Further, the profits earned by the Corporation have shown a declining trend. Though the likely loss of Rs. 34.85 crore shown for the year 1996-97 has been stated to be a tentative figure which would be revised following a refixation of compensation rates for Yellow Cake, the Committee would like to be apprised of the financial performance of the Corporation during the year. The Committee also hope that the reasons for the shortfall in utilisation of the 8th Plan outlay as well as the declining profits of the Corporation would be analysed in detail and the performance of UCIL improved.

**1.35** The Committee note with concern that the Jaduguda Mill expansion project which was initially envisaged to be completed by June, 1995 is now expected to be completed by April, 1998. The reasons advanced for the delay of nearly three years in executing the project include, delays in placement of orders for equipments; delays in supply of equipment; and frequent change of contractors due to their inability to complete the works assigned. In this very project, the Committee have been informed that there has been change of contractors on as many as five occasions. The Committee takes serious note of this state of affairs. If huge projects are subjected to series of changes, there would be no finality in the implementation of the projects and would only lead to cost and time overruns. With a view to avoid delays in the execution of the projects of the Department, the Committee feel that it is essential to undertake measures such as fixing of responsibilities for delays in placement of orders for equipment and imposition of penalties for delays on the part of contractors and suppliers. The Committee trust that suitable measures would be undertaken to ensure completion of the projects in a time bound and cost effective manner. Also, considering the delay in completion of the Jaduguda Mill Expansion Project, the Committee are not convinced with the Departments contention that the project would be completed within the sanctioned cost of Rs. 95.37 crores. The Committee expect a clarification in this regard.

### III. Appraisal of Eighth Plan Nuclear Power Programme

1.36 At the beginning of the VIII Plan, the installed capacity of nuclear power projects was 1785 MWe. As observed from the Performance Budget (1997-98) and other information furnished by the Department, the VIII Plan proposals of the Department in respect of nuclear power envisaged a nuclear power capacity of 7700 MWe by 2002 A.D. The proposals of the Department were based on commencing construction of Tarapur 3&4 (2 x 500 MWe), Rajasthan 5 & 6 (2 x 500 MWe), Kaiga 3 to 6 (4 x 220 MWe) and additionally the Russian aided Kudankulam Project (2 x 1000 MWe) at an outlay of Rs. 15,125 crore. Against this, the approved Eighth Plan outlay was Rs. 4261 crore with budgetary support of Rs. 761 crore.

1.37 During the VIII Plan, a capacity addition of 1100 MWe from ongoing projects, viz. Kakrapar Units 1&2 (2 x 220 MWe), Kaiga 1&2 (2 x 220 MWe) and Rajasthan unit-3 (220 MWe) was targeted. Against this, as observed from the Performance Budget of the Department (1997-98), the actual capacity addition during the VIII Plan is only 440 MWe from Kakrapar and the balance 660 MWe from Kaiga and Rajasthan is slipping to IX Plan.

1.38 As informed by the Department, the delay in execution of the Kaiga and Rajasthan Projects has been owing to the delamination incident which occurred in Kaiga in May, 1994.

#### **Kaiga 1 & 2 (2 x 220 MWe) & Rajasthan 3, 4 (2 x 220 MWe) Projects:**

##### **(a) Time Schedule of Completion of Projects:**

1.39 Asked to furnish details of the extent of delays caused in the execution of Kaiga 1 & 2 (2 x 220 MWe) and RAPS 3 & 4 (2 x 220 MWe) Projects since the initial sanction of the Projects, the Department furnished the undermentioned information:

##### **(i) Kaiga Atomic Power Project—1, 2 (2 x 220 MWe)**

Criticality Date	Unit-I	Unit-II
a. Original	31.06.95	31.12.95
b. Latest Approved	30.06.96	31.12.96
c. Anticipated	30.11.98	30.05.98

**(ii) Rajasthan Atomic Power Project—3, 4 (2 × 200 MWe)**

Criticality Date	Unit-III	Unit-IV
a. Original	31.05.95	30.11.95
b. Latest Approved	30.11.96	30.05.97
c. Anticipated	30.05.98	30.11.98

1.40 As informed by the Department, financial sanction was accorded by the Government for Kaiga 1 & 2 in June, 1987 and for RAPP 3 & 4 in November, 1986.

1.41 The Department has informed that the project activities in respect of both Kaiga 1 & 2 and RAPS 3 & 4 were proceeding as per the original schedule till early 1989 when a hold was placed by AERB on main plant civil works for a review of design and further soil investigation. This resulted in a delay of 12 months in case of Kaiga 1 & 2 and 18 months in case of RAPS 3 & 4. Accordingly, the date of criticality for Kaiga 1 & 2 was revised to June, 1996 and December, 1996 respectively and for RAPS 3 & 4 to November, 1996 and May, 1997 respectively.

1.42 Detailing the extent to which the incident of delamination of I.C. dome which occurred in Kaiga in May, 1996 contributed to further delays in the execution of the Projects, the Department, in a written reply, *inter-alia*, stated as under:

“Till April, 1994 almost all project activities were proceeding as per revised schedule of criticality of June, 1996 and December, 1996 for Kaiga 1&2 and November, 1996 and May, 1997 for RAPP 3&4 respectively...Consequent to the incident (of delamination) a hold was placed by AERB on the Civil construction work of inner containment structure of Kaiga 1&2 and RAPP 3&4. Based on the balance activities pertaining to containment structure, it is estimated that Kaiga, 2 and Kaiga 1 may be completed by May, 1998 and November, 1998 respectively and RAPP 3&4 by May, 1998 and November, 1998 respectively.”

1.43 As informed by the Department, ‘the overall time overrun due to dome incident is about 23 months in the case of Kaiga Atomic Power Project 1&2 and 18 months in the case of Rajasthan Atomic Power Project 3&4.’

1.44 On the present status of obtaining necessary clearances from Atomic Energy Regulatory Board (AERB) for proceeding with the construction works on the Projects, the Department, *inter alia*, informed as under:

"AERB Clearance for commencement of construction of IC dome of Kaiga 2 and RAPP 3&4 is expected to be obtained by the end of April, 1997. The design report for Kaiga 1 is expected to be submitted by end April, 1997 and AERB clearance for the commencement of construction of Dome is expected to be obtained by September, 1997."

(b) *Project Costs :*

1.45 The original estimated cost, revised cost, total expenditure incurred upto 1995-96 in respect of Kaiga 1&2 and RAPS 3&4 projects are as shown below :

	Original Cost	Revised Cost	Expenditure Incurred (upto 1995-96) (Rs. in crores)
1. Kaiga Atomic Power Project (1&2)	731.00	2275.00	1495.00
2. Rajasthan Atomic Power Project (3&4)	712.00	2107.00	1157.00

1.46 The cost overruns of the two projects has been to be extent of 200%.

1.47 Asked to specify the extent to which the hold up in the construction works of Kaiga & Rajasthan Projects following the 'delamination incident' contributed to the cost overruns of the Projects, the Department, in a written reply, stated that in case of Kaiga 1&2, the cost overrun due to the delamination incident' is estimated at Rs. 355 crore. In case of RAPP 3&4, the cost overrun due to the delamination incident has been estimated at Rs. 210 crore.

1.48 The Committee note that the Eighth Plan proposals for the Nuclear Power Sector were based on an ambitious programme of

achieving a nuclear power capacity of 7700 MW by 2202 A.D. Advance action was also initiated for procurement of 'critical long delivery equipments' for projects to be taken up in future. The Eighth Plan proposals were based on commencing construction of Tarapur 3&4 (2 x 500 MWe), Rajasthan 5&6 (2 x 500 MWe), Kaiga 3 to 6 (4 x 220 MWe) and additionally the Russian aided Kudankulam Project (2 x 1000 MWe) at an outlay of Rs. 15,125 crore. Against this, the approved outlay was only Rs. 4216 crore with a budgetary support of a mere Rs. 761 crore. During the Eighth Plan, as against a capacity addition of 1100 MWe envisaged from ongoing projects, *viz.*, Kakrapar units 1&2 (2x220 MWe), Kaiga 1&2 (2x220 MWe) and Rajasthan 3&4 (220 MWe) the actual addition has been only 440 MWe from Kakrapar and balance 660 MWe from Kaiga and Rajasthan is slipping to IX Plan. The wide disparity between the Eighth Plan proposals of the Department and the approved outlay, the meagre budgetary support provided to the Nuclear Power Sector during the plan period as well as the shortfall in achieving the capacity targets for the plan period speak of serious deficiencies in the planning for the nuclear power sector. The Committee have been informed that the capacity of Nuclear Power Corporation to generate sizeable surpluses for funding the Nuclear Power Projects is limited. Added to this are the difficulties in mobilising sufficient borrowings from the capital market. The Committee, therefore, urge the Government to review its approach to Nuclear Power Sector and provide adequate funding to the Department. The Committee also expect the Department to undertake effective steps to ensure timely completion of projects so as to avoid slippages as witnessed during the Eighth Plan period.

1.49 The Committee feel constrained to note that the Kaiga 1&2 and RAPS 3&4 Projects which were envisaged to be commissioned in 1995 are now expected to be completed in 1998. The delay of nearly three years in commissioning the projects has been attributed to a hold up in the construction of the projects by Atomic Energy Regulatory Board (AERB), at first in early 1989, and secondly following the incident of delamination of IC dome at Kaiga in May, 1994. As informed by the Department, necessary clearances for commencement of construction of the redesigned dome in respect of both the projects are yet to be obtained from AERB. Considering the extent of delay in execution of the projects caused due to the delamination incident at Kaiga, the Committee expect the Department to take up the matter of obtaining the necessary clearances from AERB in the right earnest and ensure that the projects are

commissioned within the extended time frame. That the hold up in the construction work of the projects has contributed significantly to the escalation in the costs of the Projects is brought out in the next paragraph.

1.50 The Committee observe that cost overruns in respect of both Kaiga 1&2 and RAPS 3&4 projects which were envisaged to be completed in the 8th Plan period is to the extent of 200%. Whereas the original costs of Kaiga 1&2 and RAPS 3&4 Projects were Rs. 731 crore and Rs. 712 crore respectively, the revised costs of the projects have been estimated at Rs. 2275 crore and Rs. 2107 crore respectively. As informed by the Department, the 'delamination incident' at Kaiga and the resultant hold up in the construction of the projects has contributed to an escalation of as much as Rs. 355 crore in the projects costs of Kaiga 1&2 and Rs. 210 crore in the costs of RAPS 3&4. Such huge escalations in projects costs are indicative of serious deficiencies in project planning and implementation. The Committee expect that efforts will be made to ensure commissioning of the projects within the revised costs.

1.51 The Committee are of the view that the choice of Nuclear Energy as a source for meeting the country's energy requirements acquires added importance in view of the limitations of the commercial energy sources viz., coal, oil and natural gas. Though the country has developed comprehensive capability for the entire nuclear fuel cycle-production of heavy water and fuel, exploration, mining and processing of the uranium ores and culear waste management-nuclear power as an option for meeting the energy needs has, unfortunately, not merited consistent consideration in energy planning. The Committee express the need for a committed and continuous nuclear energy development programme so as to ensure the progress and development of the nation. The Committee feel that it is essential to have a new thinking for implementation of Nuclear Power Projects in the Ninth Plan in the light of experience gained during the Eighth Plan period.

NEW DELHI;  
April 25, 1997  
Vaisakha 5, 1919 (Saka)

JAGMOHAN,  
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.	1.19	<p>The Committee observe that during the year 1995-96, the actual expenditure of the Department was short of the Budgeted amount of Rs. 2961.03 crore by as much as Rs. 453.59 crore. Whereas shortfall in expenditure to the extent of Rs. 342.62 crore is attributable to non-realisation of Internal and Extra Budgetary resources as envisaged in the Plan Budget, a net amount of Rs. 110.97 crore was not expended by the Department from the Budgetary Support component under the two Grants <i>viz.</i> Grant No. 88—Atomic Energy and Grant No. 89—Nuclear Power Schemes. The inability of the Department to generate the envisaged internal and extra budgetary resources appears to be owing to the low operating base of the installed nuclear capacity to generate sizeable surpluses as well as the problems associated with mobilizing significant borrowings from the Capital Market. Yet, what the Committee are troubled to note is the inability of the Department to utilise the budgetary resources provided under the two Grants. The Committee feel that the shortfalls in expenditure—shown as</p>

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savings in the Grants—are indicative of Poor budgeting or shortfall in performance for which corrective measures are required to be taken. The Committee are of the view that such shortfalls in expenditure imply a miserable failure on the part of the organisation to utilise the allocations. That the shortfall in expenditure is more pronounced in the Industry and Minerals (I&M) Sector is brought out in the succeeding paragraph.

2. 1.20

From the figures relating to Budget Estimates and Actual Expenditure for the year 1995-96, the Committee observe that the shortfall in Capital Expenditure on Schemes covered under the Industry and Minerals (I&M) Sector has been to the extent of Rs. 103.33 crore. Of this, shortfall in 'Plan Expenditure' to the extent of Rs. 70 crore has been attributed to the reduction in financial assistance to public sector undertakings due to delay in their projects and, reduction in plan capital expenditure for projects/schemes of I&M Sector. On the Non-Plan side, shortfall in expenditure to the extent of Rs. 33 crore has been attributed to postponement of annual maintenance of Heavy Water Plants at Baroda and Manuguru and six months outage in the Heavy Water Project at Tutticorin. Though the Department has indicated that the shortfall in expenditure earmarked for the operational expenses of Heavy Water Plants has not affected

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the production of the plants, the Committee are not convinced of this possibility. Either the Budgeting was faulty or the information furnished by the Department about the performance of Heavy Water Plants during 1995-96 incorrect. The Committee expect a clarification in this regard.

3. 1.21

The Committee feel constrained to observe that a significant amount of the shortfall in capital expenditure of I&M Sector as well as the Nuclear Power Sector has been owing to delays in execution of Projects/procurement of equipments. The Committee observe that the resources available are meagre and the allocations low. Yet, there is shortfall in expenditure on sanctioned projects. The Committee, therefore, urge that appropriate measures need to be taken to ensure that the projects/schemes of the Department are implemented in a time bound manner. The Committee also emphasise that estimates for each project/scheme should be framed accurately after a careful and indepth examination of the requirement of funds.

4. 1.34

The Committee observe that the shortfall in utilisation of the 8th Plan outlay for the projects of UCIL has been to the extent of Rs. 33.93 crore. Further, the profits earned by the Corporation have shown a declining trend. Though the likely loss of Rs. 34.85 crore shown for the year 1996-97 has been stated to be a tentative figure which would be

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revised following a refixation of compensation rates for Yellow Cake, the Committee would like to be apprised of the financial performance of the Corporation during the year. The Committee also hope that the reasons for the shortfall in utilisation of the 8th Plan outlay as well as the declining profits of the Corporation would be analysed in detail and the performance of UCIL improved.

5. 1.35

The Committee note with concern that the Jaduguda Mill expansion project which was initially envisaged to be completed by June, 1995 is now expected to be completed by April, 1998. The reasons advanced for the delay of nearly three years in executing the project include, delays in placement of orders for equipments; delays in supply of equipment; and frequent change of contractors due to their inability to complete the works assigned. In this very project, the Committee have been informed that there have been change of contractors on as many as five occasions. The Committee takes serious note of this state of affairs. If huge projects are subjected to series of changes, there would be no finality in the implementation of the projects and would only lead to cost and time overruns. With a view to avoid delays in the execution of the projects of the Department, the Committee feel that it is essential to undertake measures such as fixing of responsibilities for delays in placement of orders for equipment and imposition of penalties for delays

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on the part of contractors and suppliers. The Committee trust that suitable measures would be undertaken to ensure completion of the projects in a time bound and cost effective manner. Also, considering the delay in completion of the Jaduguda Mill Expansion Project, the Committee are not convinced with the Departments contention that the project would be completed within the sanctioned cost of Rs. 95.37 crore. The Committee expect a clarification in this regard.

6. 1.48

The Committee note that the Eighth Plan proposals for the Nuclear Power Sector were based on an ambitious programme of achieving a nuclear power capacity of 7700 MW by 2002 A.D. Advance action was also initiated for 'procurement of critical long delivery equipments' for projects to be taken up in future. The Eighth Plan proposals were based on commencing construction of Tarapur 3&4 (2 x 500 MWe), Rajasthan 5&6 (2 x 500 MWe), Kaiga 3 to 6 (4 x 220 MWe) and additionally the Russian aided Kudankulam Project (2 x 1000 MWe) at an outlay of Rs. 15,125 crore. Against this, the approved outlay was only Rs. 4216 crore with a budgetary support of a mere Rs. 761 crore. During the Eighth Plan, as against a capacity addition of 1100 MWe envisaged from ongoing projects, viz., Kakrapar units 1&2 (2 x 220 MWe), Kaiga 1&2 (2 x 220 MWe) and Rajasthan 3&4 (220 MWe) the actual addition has been only 440 MWe from Kakrapar and balance 660

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MWe from Kaiga and Rajasthan is slipping to IX Plan. The wide disparity between the Eighth Plan proposals of the Department and the approved outlay, the meagre budgetary support provided to the Nuclear Power Sector during the plan period as well as the shortfall in achieving the capacity targets for the plan period speak of serious deficiencies in the planning for the nuclear power sector. The Committee have been informed that the capacity of Nuclear Power Corporation to generate sizeable surpluses for funding the Nuclear Power Projects is limited. Added to this are the difficulties in mobilising sufficient borrowings from the capital market. The Committee, therefore, urge the Government to review its approach to Nuclear Power Sector and provide adequate funding to the Department. The Committee also expect the Department to undertake effective steps to ensure timely completion of projects so as to avoid slippages as witnessed during the Eighth Plan period.

7. 1.49

The Committee feel constrained to note that the Kaiga 1&2 and RAPS-3&4 Projects which were envisaged to be commissioned in 1995 are now expected to be completed in 1998. The delay of nearly three years in commissioning the projects has been attributed to a hold up in the construction of the projects by Atomic Energy Regulatory Board (AERB), at first in early 1989, and secondly following the incident of delamination of IC dome at Kaiga in May, 1994. As informed by the

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Department, necessary clearances for commencement of construction of the redesigned dome in respect of both the projects are yet to be obtained from AERB. Considering the extent of delay in execution of the projects caused due to the delamination incident at Kaiga, the Committee expect the Department to take up the matter of obtaining the necessary clearances from AERB in the right earnest and ensure that the projects are commissioned within the extended time frame. That the hold up in the construction work of the projects has contributed significantly to the escalation in the costs of the Projects is brought out in the next paragraph.

8. 1.50

The Committee observe that cost overruns in respect of both Kaiga 1&2 and RAPS 3&4 projects which were envisaged to be completed in the 8th Plan period is to the extent of 200%. Whereas the original costs of Kaiga 1&2 and RAPS 3&4 Projects were Rs. 731 crore and Rs. 712 crore respectively, the revised costs of the projects have been estimated at Rs. 2275 crore and Rs. 2107 crore respectively. As informed by the Department, the 'delamination incident' at Kaiga and the resultant hold up in the construction of the projects has contributed to an escalation of as much as Rs. 355 crore in the project costs of Kaiga 1&2 and Rs. 210 crore in the costs of RAPS 3&4. Such huge escalations in project costs are indicative of serious deficiencies in project planning and implementation. The Committee expect that efforts will be

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made to ensure commissioning of the projects within the revised costs.

9. 1.51

The Committee are of the view that the choice of Nuclear Energy as a source for meeting the country's energy requirements acquires added importance in view of the limitations of the commercial energy sources viz., coal, oil and natural gas. Though the country has developed comprehensive capability for the entire nuclear fuel cycle-production of heavy water and fuel, exploration, mining and processing of the uranium ores and nuclear waste management-nuclear power as an option for meeting the energy needs has, unfortunately, not merited consistent consideration in energy planning. The Committee express the need for a committed and continuous nuclear energy development programme so as to ensure the progress and development of the nation. The Committee feel that it is essential to have a new thinking for implementation of Nuclear Power Projects in the Ninth Plan in the light of experience gained during the Eighth Plan period.

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## **PART II**

### **MINUTES OF THE THIRTEENTH SITTING OF STANDING COMMITTEE ON ENERGY HELD ON 9TH APRIL, 1997 IN COMMITTEE ROOM 'C', PARLIAMENT HOUSE ANNEXE, NEW DELHI**

The Committee sat from 11.00 to 13.00 hours.

#### **PRESENT**

**Shri Jagmohan — *Chairman***

#### **MEMBERS**

2. **Shri Karia Munda**
3. **Prof. (Smt.) Rita Verma**
4. **Shri Gyan Singh**
5. **Shri Muni Lall**
6. **Shri Manoj Kumar Sinha**
7. **Shri Sriram Chauhan**
8. **Shri Sriballav Panigrahi**
9. **Shri Parasram Bhardwaj**
10. **Shri Ishwar Prasanna Hazarika**
11. **Shri Sandipan Thorat**
12. **Shri Ram Kirpal Yadav**
13. **Shri Anand Mohan**
14. **Shri Chitta Basu**
15. **Shri Ramendra Kumar**
16. **Shri M. Rajasekara Murthy**
17. **Shri S.M. Krishna**
18. **Shri Ved Prakash Goyal**
19. **Shri Gaya Singh**
20. **Shri Rajnath Singh 'Surya'**

## SECRETARIAT

1. Smt. Roli Srivastava— *Joint Secretary*
2. Shri G.R. Juneja — *Deputy Secretary*
3. Shri A.S. Chera — *Under Secretary*

## WITNESSES

## Department of Atomic Energy

1. Dr. R. Chidambaram, Chairman, AEC and Secretary, DAE.
2. Shri Anil Kakodkar, Member, AEC and Director, BARC.
3. Ch. Surendar, Executive Director (O), NPCIL.
4. Shri B.K. Saha, Additional Secretary, (I&M).
5. Shri K.K. Sinha, Chief Executive, NFC.
6. Shri S.P. Mukherjee, Chief Executive, HWB.
7. Shri K.B.S. Chopra, Chief Controller of Accounts.
8. Shri R.C. Joshi, Executive Director (F), NPCIL.
9. Shri J.L. Bhasin, Chief Managing Director, UCIL.

The Committee took oral evidence of the representatives of Department of Atomic Energy in connection with the examination of Demands for Grants (1997-98) of Department of Atomic Energy.

2. The following important points were discussed by the Committee:

- (i) Power Generation Programme.
- (ii) R&D activities.
- (iii) Shortfalls in Expenditure.
- (iv) Delays in execution of Projects.
- (v) Advance Procurement Action for Future nuclear projects.
- (vi) Capital Structure of Nuclear Power Corporation of India Ltd.
- (vii) Safety of nuclear installations and spent fuel management.

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

*The Committee then adjourned.*

EXTRACTS OF MINUTES OF THE FIFTEENTH SITTING OF  
THE STANDING COMMITTEE ON ENERGY HELD ON  
19TH APRIL, 1997

The Committee sat from 11.00 to 11.45 hours.

PRESENT

Shri Jagmohan — *Chairman*

MEMBERS

2. Prof. (Smt.) Rita Verma
3. Shri Sriram Chauhan
4. Shri Sriballav Panigraphi
5. Shri Tariq Anwar
6. Shri Iswar Prasanna Hazarika
7. Shri P. Kodanda Ramiah
8. Shri Ram Kirpal Yadav
9. Shri Anand Mohan
10. Shri Prem Singh Chandumajra
11. Shri Chitta Basu
12. Shri Madhavsinh Solanki
13. Shri M. Rajasekara Murthy
14. Shri Ramji Lal
15. Shri Ved Prakash Goyal
16. Shri Rajnath Singh 'Surya'

SECRETARIAT

1. Shri G.R. Juneja — *Deputy Secretary*
2. Shri A.S. Chera — *Under Secretary*

2. The Committee considered and adopted the following Draft Reports :

(i)	**	**	**
(ii)	**	**	**
(iii)	**	**	**
(iv)	Draft Report on Demands for Grants (1997-98) relating to Department of Atomic Energy.		

3. The Committee also authorised the Chairman to finalise the above mentioned Reports and present the same to Parliament.

*The Committee then adjourned.*

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\*\* Paras 2(i), (iii) of the Minutes relating to consideration of three other Draft Reports on Demands for Grants (1997-98) have not been included.