

**COMMITTEE ON PUBLIC
UNDERTAKINGS
(1981-82)**

(SEVENTH LOK SABHA)

FORTY-FOURTH REPORT

ON

BHARAT HEAVY ELECTRICALS LIMITED

(Ministry of Industry—Department of
Heavy Industry)

Presented to Lok Sabha and

Laid in Rajya Sabha on 28-4-1982



**LOK SABHA SECRETARIAT
NEW DELHI**

April, 1982/Vaisakha, 1904 (Saka)

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(1981-82)**

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3. Shri S. P. Chanana—*Senior Financial Committee Officer.*

* Ceased to be Member consequent on his appointment as Deputy Minister on 15 January, 1982.

** Ceased to be a Member consequent on his retirement from Rajya Sabha on 2 April, 1982.

STUDY GROUP III ON BHARAT HEAVY ELECTRICALS LTD.,
ENGINEERING PROJECTS (I) LTD., AND CERTAIN ASPECTS
OF HINDUSTAN MACHINE TOOLS LTD., JESSOP & CO.
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4. Shri Chandradeo Prasad Verma
- *5. Shri Swami Dinesh Chandra

* Ceased to be a Member consequent on his retirement from Rajya Sabha on 2 April 1982.

INTRODUCTION

1. The Chairman, Committee on Public Undertakings having been authorised by the Committee to present the Report on their behalf, present this Forty-Fourth Report on Bharat Heavy Electricals Ltd.

2. The Committee took evidence of the representatives of Bharat Heavy Electricals Ltd. on 31 December, 1981, 1, 6 and 7 January, 1982 and of Ministry of Industry (Department of Heavy Industry) and Ministry of Energy (Department of Power) on 11 and 12 February, 1982.

3. The Committee considered and adopted the Report at their sitting held on 22 April, 1982.

4. The Committee wish to express their thanks to the Ministry of Industry (Department of Heavy Industry), Ministry of Energy (Department of Power) and Bharat Heavy Electricals Ltd. for placing before them the material and information they wanted in connection with the examination of the subject. They also wish to thank in particular the representatives of the Ministry of Industry (Department of Heavy Industry), Ministry of Energy (Department of Power) and Bharat Heavy Electricals Ltd. who gave evidence and placed their considered views before the Committee.

NEW DELHI;
April 26, 1982
Vaisakha 6, 1904 (S)

BANSI LAL,
Chairman,
Committee on Public Undertakings.

PART I

BACKGROUND ANALYSIS

I. BHEL AND THE NATIONAL PLANS

The Bharat Heavy Electricals Ltd. was established in November, 1964 with three manufacturing plants located at Hardwar, Hyderabad and Trichy. On 1st January, 1974 Heavy Electricals (India) Ltd., Bhopal was merged with BHEL. BHEL have set up four new manufacturing units, viz. Central Forge and Foundry at Hardwar, Transformer Factory at Jhansi, Control Equipment at Bangalore and Seamless Steel Tubes at Trichy. The two subsidiaries of the company, namely Radio and Electrical Mfg. Co. Ltd. and Mysore Proce-lains Ltd. merged with BHEL from 1-4-1980.

A. Physical and Financial Targets

2. BHEL occupies a crucial position in the energy sector of our economy. Plan targets and achievements in relation to (a) production of equipments in physical terms for the planned creation of additional installed capacity for power generation; (b) value added correlated to the sectoral rate of growth indicated in the plan; (c) capital investment and (d) generation of internal resources for capital investment correlated to the resources forecast of the plan are important indices for assessing the performance of the BHEL in the perspective of the national plans. The Committee were, however, informed by the BHEL in a note, that the Five Year Plans do not indicate the targets of value added and generation of internal resources and that the Company draws up its annual budget fixing targets for these.

3. The Committee enquired during the examination of the Department of Heavy Industry, if the Five Year Plan did not indicate at the macro-level the resources to be generated internally by Public Undertakings for investment and if so, whether there was no system of distributing that and fixing targets for generation of internal resources for each undertakings during the plan period. The Secretary, Department of Heavy Industry replied in evidence:

"As far as the first part of the question is concerned you are absolutely right in saying that. But if you go into details you will find that the figure has been arrived at after a few discussions with each one of the public sector organisations either through the medium of the Ministry or direct. In some cases, documents may not be indicative of this but there is a lot of work which has gone behind it."

The Chairman and Managing Director of BHEL also stated in this connection during the examination of BHEL:

“The question was whether the planning Commission fixed any target for internal resources for us. To that my answer is that they have not fixed any target.”

4. Asked whether there was no plan target for the value added in respect of each undertaking correlated to the sectoral rate of growth of the relevant sector indicated by the plan, the Secretary, Department of Heavy Industry stated in evidence:

“No sir, when the individual organisations do the plan we review it.”

In reply to a question as to whether the Department of Heavy Industry had not indicated the value to be added during the Plan period to the Planning Commission at the beginning of the Plan, the Secretary, said ‘No’.

5. Asked what was the basis for fixing the budget targets for value added and generation of internal resources, the Chairman and Managing Director (CMD), BHEL stated:

“Budget targets are fixed in physical and financial terms keeping in view the customer commitments, national programme and order book position. Value added and generation of internal resources are derived based on the production targets and cost of inputs.”

6. The Committee enquired whether there was any correlation in regard to budget targets with the sectoral rate of growth and the resources forecast as given in the plans. The CMD, BHEL explained “Our plans are derived from national sectoral plans, like power, railways, fertilizers, petrochemicals, steel, oil, etc. Based on internal resources calculation, we give a commitment to the Planning Commission for internal resources for five years. We also provide for dividend at 6 per cent towards the national resources generation programme.”

7. The CMD, BHEL admitted that if the order book is not adequate the production target would be low, “unless we are able to divert the capacity which is the balance between availability and the orders to other products or advance some of the orders and take up the production”. He also added: “We plan sufficiently ahead and we look to the future for the next 3 or 4 years. We anticipate where there is going to be shortage of orders. We take action to get orders.

If we come to the conclusion that we cannot get orders, we try to see what alternative lines of production could be taken up to fill up the gaps." He continued further and said:

"We are largely able to fill up our capacity except for some small pockets where the production mix may not be optimum."

B. Shortfalls in Achievements

8. The targets and actuals of capital investment as per National plans and value added and generation of internal resources for capital investment as per company budgets as furnished by BHEL during 1974-79 and for 1979-80 and 1980-81 were as follows:

	(Rs. crores)					
	1974-1979		1979-80		1980-81	
	Target	Actual	Target	Actual	Target	Actual
<i>As per National Plan</i>						
(a) Capital Investment	193.20*	191	52	43	64	53
<i>As per Company budgets</i>						
(b) Value added	1150	1218	360	326	325	333
(c) Generation of internal resources for capital investment	20	21	10	1	21	10

*As sanctioned by the Planning Commission.

9. During the years 1979-81 there was a shortfall of Rs. 20 crores in capital investment (actual Rs. 96 crores against the target of Rs. 116 crores). Similarly, there was a shortfall of Rs. 20 crores in the generation of internal resources for capital investment (actual Rs. 11 crores against the target of Rs. 31 crores). The Committee enquired whether the fall in capital investment during the years 1979-81 was due to lower generation of internal resources. The CMD, BHEL replied that that would not be wholly correct and said "If we go into the question of delay, we will find that in a number of cases we could not have paid the money because the machinery never arrived as per our expectations. So, the question whether the programme suffered because we did not generate internal resources can be clarified after discussing the reasons for the shortfall".

10. Quantifying the major factors which contributed to the shortfall in capital expenditure for the period 1979—81, the CMD, BHEL stated: The shortfall on account of delay in receipt of machine tools and equipment—Rs. 514 lakhs; delay in ordering of machine tools and equipment—Rs. 365 lakhs; township scheme—Rs. 206 lakhs; and procedural delay (a) delay in sanction of new schemes—Rs. 405 lakhs and (b) delay in the performance test in seamless tube plan—Rs. 282 lakhs. In addition to all these delays which accounted for a total shortfall of Rs. 1832 lakhs, there are stated to be various miscellaneous reasons which contributed to the rest of the shortfall in capital investment.

11. The shortfall in generation of internal resources, according to the CMD, was due to reduced profits on account of four factors viz. (i) unexpected increase in the rate of interest by three and a half per cent, (ii) unforeseen import of steel at higher prices due to non-availability of steel indigenously, (iii) increase in the customers' outstandings resulting in higher cash credit utilisation and (iv) counterveiling duty imposed on imports by BHEL.

12. On being enquired whether there was price increase during the years 1979—81, the witness claimed that BHEL had not increased the price of its products during the period because of the increase in price escalation or higher cost of steel. The witness added, "When we adopted the plan, the prices of the products were known. They had already been under the contract. We could not increase it in order to reflect the increase of higher interest rate. These were the unexpected extra burden on us." The witness further added that in all the contracts, where price escalation had been provided, the price escalation had not been related to these four factors.

13. Replying to the question as to whether the price escalation was not related to the cost of steel, the witness stated in evidence:

"It was related to the cost of indigenous steel. When we planned production, we planned on the consideration that we would get sufficient indigenous steel. When the steel production did not materialise during the course of the year we were forced to buy steel from abroad. The price of Steel from abroad was different to that of we got from indigenous sources. What we have referred here is the difference between the price that we would have paid on

the indigenous steel and the price that we have actually paid on the imported steel. If I were to get steel from the market, then that much additional burden I would not have carried."

The witness further stated:

"When the price formula was worked out by the BICP and others, they provided for a price escalation relating to certain indices. But if we increase the content of imported steel, that is not reflected."

14. When the Committee pointed out that there was no relevance of the JPC price in the cost of the final product and suggested that an escalation clause for the imported steel must be provided for in BHEL's contracts, the CMD, BHEL pleaded:

"Where we cannot get steel from indigenous sources and we have to buy at a higher price, the Steel Ministry should subsidise the purchase as they now propose doing for export orders. The general principle is being drawn up that if you have to buy steel from outside at a higher price, then the additional burden is subsidised."

15. Asked why the matter should not be taken up with BICP the witness assured the Committee that it would be followed up. He, however, admitted that the past things had not been taken up with BICP.

16. When the Committee enquired whether the Ministry reviewed the performance of the BHEL against the plan targets and wondered how the achievements and shortfalls were not related to the plan targets either in the Ministry's Annual Reports and performance Budgets or in the Annual Reports of the BHEL, the Secretary, Department of Heavy Industry replied:

"That is the objective. To meet the objective, so many people will have to do certain things before BHEL even comes into the picture. Now take a project—project 'A'. Now for that project some people have to prepare the feasibility report and get it cleared from the Central

Electricity Authority, go to the Planning Commission and get it cleared. In what time frame they do all this is not written in the plan. Some body does it in six months and there are others who take 3 years, but whoever does it later to that extent, the project gets delayed.”

He continued further and said:

“Again before he places an order on BHEL he has to place number of orders. Supposing he places an order on BHEL in time, there is a date by which time the project has to be completed and then four years earlier he has to place the order. Suppose he has placed the order on us but he has not placed orders for other things like steel, foundation, etc. then the project will not be completed in time.”

17. Regarding plan targets the Secretary, stated that the total Five Year Plan did not come with much of the detailed targets. He, however, added:

“My answer is that the internal targets are there many times higher. We intentionally fix a theoretically high target to generate a certain pressure inside the organisation but somebody should not judge me on the basis of the target because that is an internal target theoretically fixed, but you should judge me on the basis of my actual growth rate. If that is creditable, I think that should be enough.”

18. The Committee felt that it would not be enough and suggested that performance should be judged against plan targets. Responding to the suggestion, the witness said:

“There I do agree. You can do wherever there is a plan target in which there is no external control of commissioning of power station etc.”

C. Contribution to power generation

19. The Ministry of Energy is reported to have fixed targets for the commissioning of additional installed capacity for power generation from year to year based on its assessment of requirement and progress of various power projects and assigning the share of the BHEL therein. The Committee were informed by BHEL in a note that the total installed capacity at the end of 1977-78 was 23,669 MW (Utilities). Targets for 1978-79, 1979-80 and 1980-81 and BHEL's

share in these targets and achievements as furnished by BHEL are given below:—

Year	Target National	(MW) BHEL'S Share	BHEL Achievement (MW)
1978-79	3857	3610	2935
1979-80	2813	2393	1544
1980-81	2687	2162	1497

20. The Committee noted that the national target and the BHEL's share have been progressively sealed down and even then the achievement was poor inasmuch as it was only about 2/3rd of the BHEL's share. Asked about the reasons for sealing down the national targets and BHEL's share in the creation of additional capacity for power generation during the years 1978—81, a representative of BHEL stated that the annual target for the schedule of commissioning of the power station was pre-fixed by the Central Electricity Authority within the overall frame of the plan targets. That schedule was prepared based on the actual studies on the progress of various activities on the power stations and depending on the information furnished by the Electricity Boards. The witness further stated that the commissioning target of the country was coming down because the rate of progress of other activities at the power stations was not matching so that units could be fully commissioned. A representative of BHEL claimed that in every unit, BHEL equipment had been supplied to match the commissioning requirements.

21. The Committee wanted to know when the targets of the BHEL's share in creation of additional capacity for power generation were fixed and what advance action was taken to fulfil the BHEL's commitment to the nation in the power sector. The CMD, BHEL, stated during evidence:

"The targets for commissioning of capacity on account of the BHEL equipment are fixed every year during the finalisation of annual commissioning programme. CEA fixed up the commissioning programme targets for the country keeping in view the factors like preparedness of site, progress in engineering, funds availability, availability of various other inputs and equipments etc. BHEL draws its programme from Central Electricity Authority's projections and all efforts are made to see that the BHEL's

commitments are adhered to. BHEL supplies constitute only 45 per cent or so of the total power plant and even in some cases, out of this, the boilers are supplied by AVB."

22. The Actual value added during the period 1974—81 was more than the target fixed by the BHEL in its budget. Similarly, the actual financial out-turn was slightly more than the budget. When asked if the budget targets were not co-related to the needs of additional creation of capacity for power generation utilising BHEL equipment. BHEL stated in a written reply that budget targets were closely related to the creation of additional capacity in thermal area by the system of harmonograms already introduced. It was assured that in the field of Hydro, where problems were of a much lesser magnitude, harmonogram system would also be progressively introduced.

23. Asked who ensured that the targets of BHEL in relation to production co-related to the needs of additional creation of capacity for power generation utilising BHEL equipments, the Secretary, Department of Heavy Industry stated during evidence:

"It cannot be one person who ensures this. Targets vis-a-vis BHEL or any equipment supplier are related to the date of ordering. There cannot be a central person who can decide the dates of ordering in all these cases."

He added:

"A single agency like the CEA comes into the picture later."

24. Explaining the shortfall in achievement consistently in all the three years during 1978-81. BHEL stated in a written reply that in so far as BHEL sets included in the commissioning programme were concerned, BHEL's responsibility was to ensure that supply of equipment matches the programme to facilitate commissioning and stated further that most of the slippages were due to reasons not attributable to BHEL. In another written reply furnished to the Committee, however, BHEL indicated four cases where the delayed supplies by BHEL could be one of the factors contributing to delay in commissioning.

25. The Ministry of Energy have, however, stated in a post-evidence reply that they do not agree with the contention that BHEL was not responsible for delaying commissioning of power projects during the period 1978—81. According to them while there were some delays on the part of the State Electricity Boards in the completion of works, such as site preparation, civil works, etc.,

there were also delays on the part of the equipment suppliers including BHEL which delayed the commissioning of several projects. The thermal projects which could not be commissioned during the last five years due to delayed supply of BHEL equipment are stated to be Amarkantak Unit-1 and Harduaganj Unit-2 scheduled to be commissioned during 1976-77, Badarpur Unit-4, Sontadih unit-3, Ukai-3, during 1977-78 Satpura Unit-6, Nasik Unit-3, Bhusawal Unit-2, Ukai Unit-4, Tutikorin Unit-1, Vijayawada Unit-1, Panipat Unit-2 and Santaldih Unit-4, during 1978-79, Nasik-4, Satpura-7, Tuticorin-2, Vijayawada-2, Faridabad Unit-3, Parli-3 and Bongaigaon Unit-1 during 1979-80 and Korba East and Talcher-5 during 1980-81.

26. Pleading that performance judging from their commissioning only was not correct, the CMD, BHEL claimed in evidence that in the meeting held in the Planning Commission to review the progress of 1980-81, it had been recorded that slippage was not on them. In appreciation of that, the Planning Commission is stated to have decided to draw up the harmonogram. New harmonograms have been drawn up from this year 1980-81 with the participation of CEA, customers and BHEL. These have identified the commitments by BHEL as also the inputs to be made available by customers for fulfilment of BHEL commitments.

27. The CMD, BHEL deposed before the Committee that commissioning was not the responsibility of BHEL and the commissioning figures of creation of additional capacity for power generation would not reflect on the achievement of BHEL. He also clarified that BHEL's achievements in the creation of additional capacity for power generation meant what they had produced year-wise. The megawatt-wise production figures for 1978-79 was reported to be 2714; for 1979-80—2030; and for 1980-81—2883.

28. Asked why the targets for commissioning should be shown as BHEL's share when the responsibility for commissioning is not of BHEL, the CMD stated that the discrepancy only related to terminology: "We have tried to get this terminology changed but we could not succeed."

29. The sixth plan projection for commissioning of thermal and hydro sets as furnished in a post-evidence note are:

	Thermal	Hydro
National Programme (Sets/MW)	97/14208	109/4768
Ordered on BHEL	74/12612	77/4371

Against this programme, BHEL have already supplied upto March 81, 45 thermal sets and 43 Hydro sets and have planned to supply the remaining sets before the end of 1983-84. On the question of commissioning of these sets, the CMD, BHEL, however, stated:

“This does not mean that all these sets will get commissioned by that time. This means that as far as BHEL portion is concerned, we would have finished our work.”

He added:

“If there is any shortfall somewhere and the project is not completed by 1984-85, they will show that in the BHEL's account.”

30. Asked if there was no coordination between the Ministry of Energy and the Ministry of Industry to see that the National plans are translated into reality, the BHEL has stated in a written reply that in setting the national targets for production and commissioning of power equipment, discussions are held between the Ministry of Energy, CEA, Ministry of Industry and BHEL and expressed the hope that a system of introducing harmonogram and monitoring production based on these would further strengthen this co-ordination.

31. The Committee desired to know whether there was a perspective plan for the energy sector and if so, how plan in respect of BHEL, was related to the needs of the energy sector as a whole. The Secretary, Department of Heavy Industry replied.

“The first question is for any perspective plan, there is to be a period. Now a certain period which may be adequate for one type of industry may not be one same for another industry. Our planning system which has been evaluated so far for the last 30 years or so, is projected in regard to individual projects only in terms of 5 years. For a period beyond that, it is made as a projection. Now, one question can arise as to whether that period adequate for a sector like power where right from the date of sanction of the project to completion it is depending on various constraints, how efficient the operation may be. The period may be varying from 7 to 10 years.”

The witness further stated:

“On account of my past association with the Ministry of Energy, I am aware that last year this process was started that we might have a 15-year power plan which would indicate in terms of time the starting point and the ending point of each of the projects to be started and completed during the next 15 years and that type of plan should also have the blessings of the Planning Commission so that it became somewhat of an investment plan also. For, future, I thought if that happened, it would be much better because planning would be more realistic.”

32. Stating that the Planning Commission always draws the plan against the long term growth perspective around 10 or 15 years, a representative of the Department of Power stated:

“In this plan, they have taken a long term growth perspective of 1994-1995. In this perspective, energy sector has also been projected. Electricity has a major share in the energy sector. So, the plan of electricity has also been projected in this manner. There is a working group formed by the Department of Power along with the State Electricity Boards, Department of Heavy Industries etc. The Department of Heavy Industries has also formed another working group.”

The witness went on to say:

“Naturally, the two working groups also have to take into account the capacity of Bharat Heavy Electricals—not only BHEL, there are other manufacturers whose capacities also form part of the plan. This is integrated into the overall process taking into account their capacity, their ability to supply equipment and the requirement of the power sector and also the on-going projects and the projects at various stages and the hydro-projects on which feasibility reports are ready.”

II. MAJOR PROJECTS

A. Projects Commissioned

1. There were 5 projects costing Rs. 5 crores or more each commissioned during the period 1974-81. These are:

- (i) Transformer factory, Jhansi, (ii) CFFP, Hardwar, (iii) SSTP, Trichy, (iv) Boiler plant, Phase-II, expansion, Trichy and (v) R&D Complex, Hyderabad. The original estimated cost, revised cost, up-to-date investment and date of commissioning in respect of these projects as intimated by BHEL are given below:—

(Rs. in Crores)

Name of Project	Original Cost as Sanctioned by Govt.	Revised cost as Sanctioned by Govt.	Uptodate Invest-ment (31-3-81)	Commissioning date Scheduled	Time Lag in commis-sioning date.
1. Jhansi	16.22	20.99	20.03	3/ 81	Nil
2. CFFP	22.40*	34.20**	32.07	12/77	,,
3. SSTP	58.20	58.20@	57.40	10/79	,,
4. R & D	15.89	17.45	16.14	3/82	,,
5. Phase —II Expansion (Trichy)	12.12	17.86	17.86	10/78	,,

* Brief project report approved by Government in Sept., 1973.

** Detaild Project Report.

@ Approved by BHEL Board, the increase being within 10 per cent.

There was considerable cost overrun in the case of the project at Sl. Nos. w(2), and (5). There was, however, no time over-run.

2. The financial returns on investment as envisaged in the project report and its comparison with actuals in respect of these projects as furnished to the Committee are:—

(Rs. in Lakhs)

Profit after interest, before tax.

	1978-79	1979-80	1980-81
Jhansi			
As per D.P.R.	—77	48	437
Actuals	—295	—577	—271
CFFP			
As per DPR	423	525	1058
Actuals	—133	—382	—413
SSTP			
As per DPR	—54	—99	—64
Actuals	—676	—821	—855
Boiler Phase —II			
As per DPR	2524	2582	2680
Actuals	2614	2279	1829

3. While examining the undertaking, the Committee enquired about the internal rate of return of each of these projects as anticipated initially and as per the revised estimates. The Committee were informed that the original rate of return and the revised rate of return were 10.1 per cent and 11.0 percent respectively for Jhansi, 14.7 per cent and 14.3 for SSTP and 10 per cent and 13 per cent for Boiler Plan Phase-II expansion. For CFFP, the original project report was prepared in 1973 whereas only return of capital investment was worked out at the rate of 7.2 per cent. The internal rate of return in the revised project report was 18.5 per cent.

B. Transformer Factory, Jhansi

4. It has been stated that the internal rate of return in respect of Transformer Factory, Jhansi was revised upwards from 10.1 per cent to 11.0 per cent because of the product-mix change. The anticipated product-mix was stated to be of a higher range of transformers. Asked to explain the huge losses, the CMD stated:—

“This basically arose because the product-mix that we got for actual production was not as we had visualised, though we picked up in production in the 3 years successively. This year our production is higher than any time before, even now although the number that we are going to produce fairly matches with what had ben visualised MVA wise, we are much below than what we had visualised. While in numbers, we would be achieving the capacity, in financial term and in MVA we will be far below the capacity.”

5. BHEL had, however, stated in a note submitted to the Committee earlier that “the production itself was kept more-or-less in line with the DPR projections (except in 1979-80). During 1979-80 the excessive power cuts resulted in heavy loss of production and increased the losses disproportionately.”

6. BHEL is stated to be facing competition for transformers from TELK (Kerala), NGEF, Bangalore, GEC, Bharat Bijilee and Transformer and Switchgear, Madras. Asked if there was any cut in prices in view of competition, the witness stated:

“When we made the DPR we made some anticipation, and projection about prices—as we considered the market then. Later on, when so many manufacturers came to the field and we found that we could not get as many orders as we projected, naturally we had to keep our

price line in comparison with what the other's were offering. As a result, the prices that we got were not as we visualised in the project report. So, we say that in the face of stiff competition, our prices did not materialise as earlier visualised."

A representative of BHEL deposed that the projected price did not materialise in spite of inflation.

7. Asked whether the installed capacity for the manufacture of transformers in the country was in excess of what was required, a representative of BHEL replied 'Yes'. The CMD, however, added that for selected products or ranges that was the case. Capacity utilisation of transformers in terms of percentage is stated to be roughly about 75 per cent. The CMD, however, expressed optimism that they would be able to utilise the capacity substantially to break even after two years. In this connection he stated:

"We have made a detailed study of the market conditions. Based on that we have come to the conclusion that in traction transformers we have got a very good market. In instrument transformers, we are leaving all the smaller versions and going into higher ones. Last year, our budget was much better than before. This year we will do better than last year's. Now the participation and involvement of an average worker in Jhansi is so great that it gives me the greatest confidence to achieve our targets."

8. Asked whether there was excess capacity in the country as a whole the department of Heavy Industry have stated that for transformers the installed capacity plus the capacity covered by letters of intent is of the order of 37,000 MVA while the capacity utilisation is about 60 per cent and the estimated average annual demand during 1980-85 is 30,455 MVA. Thus taking the normal 80 per cent capacity utilisation, the installed capacity, according to them, should match the demand. However, it has been stated that specific areas such as in the very large transformers of 150 MVA and above, some increase in capacity may have to be provided. Taking into account the above approach, the present thinking is stated to be against allowing new units to enter the field of transformers.

9. BHEL had entered into collaboration agreement with Associated Electrical Industries of UK in 1956 for 15 years. This agreement expired in 1971. In 1974 when the Jhansi Factory came into

existence the collaboration had already expired. During evidence, a representative of BHEL informed the Committee that some of the competitors for transformers had recently arranged tie-ups with some good companies abroad. Asked if the technology of BHEL was outdated compared to that of their competitors, a representative of BHEL said:

"In certain ranges yes. But in certain ranges, we have been very competitive."

The CMW, BHEL added:

"We would accept that our technology in transformers needs further updating and we are in the process of finding out from where to take collaboration."

Regarding cost effectiveness, the witness stated:

"In a given design, considering what can be done to reduce the cost, we are very cost effective. But when we recognise that there is need to further update our technology, we certainly recognise that by updating our technology, we will be able to face the competition much better."

C. CFFP, Hardwar

10. According to the information furnished during evidence and in a post evidence note the production targets as anticipated in the DPE and as budgeted and the actuals during the years 1978-81 at CFFP, Hardwar were as follows:—

(Rs. in lakhs)

	1978-79	1979-80	1980-81
DPR	1100	2800	3800
Budget	1218	1905	2141
Actuals	1081	1425	1476

11. The Committee were informed by BHEL in a note that the production was much lower than anticipated and that changes in demand pattern had also left some portion of capacity under-utilised in CFFP. Asked what precisely those changes in the demand pattern were and how those changes could not be anticipated

earlier, BHEL, stated in a written reply that the change in demand pattern related to unit size in thermal sets and that the demand for power rating sets like 110 MW and 120 MW had virtually disappeared. This switchover had been stated to be much faster than anticipated earlier. The demand pattern had also been reportedly influenced by the introduction of new technology in thermal power equipments.

12. Asked as to what was the extent of underutilised capacity on account of the changes in demand pattern the witness stated:

“Our present utilisation is only 40—45%.”* However, according to the information furnished by BHEL earlier to the Committee, the capacity utilisation of the unit during 1980-81 works out to less than 20%.”

13. The major problems faced by the unit have been extensive power cuts and difficulties of technology absorption in the field of intricate alloy steel castings and forgings for thermal and hydro sets. Explaining the difficulties in absorbing technology, a representative of BHEL stated:

“The CEFP is a complex plant to meet the internal requirements of steel forgings for steam turbines which we manufacture in Hyderabad, Bhopal and Hardwar. We are having different collaborations for each of these projects and the technology is quite different. It has taken time to manufacture each one of the product and absorb that. Had we manufactured one type of turbines, perhaps the technology need for this would have been simpler.”

In this context, the CMD, BHEL suggested:--

“If we segregate the developmental work and production work, the progress will be faster.”

Asked about the persistent losses in this unit the CMD, BHEL stated: “We are learning from experience.”

14. The total value of purchase of castings and forgings during 1980-81 was reported to be Rs. 45 crores out of which Rs. 22 crores

*At the time of factual verification, BHEL clarified that the 40-45% utilisation mentioned here refers to the financial outturn compared to that reported in the DPR in 1980-81.

constitutes import and Rs. 21 crores indigenous purchase. Justifying this purchase, the CMD, BHEL stated during evidence:

"Considering the circumstances, the urgency to supply items in time and to have a reliable source of supply, this purchase of the value of Rs. 43 crores was necessitated. This amount of Rs. 43 crores consists of both elements—imports and also indigenous production including CFFP. There is nothing very serious about the situation."

15. When the Committee expressed their impression that on the one hand BHEL had a spare capacity in Hardwar unit and on the other, they were buying a large quantity of forgings and castings from indigenous sources and from abroad, the witness stated:

"When we are developing all these technology our experience does not give us enough confidence to be able to depend entirely on our supply."

He further stated:

"There has been a very close study of every single item that could be manufactured at the Hardwar unit within its capacity, but it has still to come from other sources either in India or from abroad. We have seen as to how optimally to use the capacity and master the technology of all those items so that they come from within our own Foundry. Some of them have not been reflected because the value and the quantity is very small as compared to the general outlook. But the benefit of that will come as soon as we cross the mastering of technology and then we would give a batch order."

On the question of making this unit viable, the witness deposed:

"Our demands from this unit are increasing every year. At the same time we are now looking forward to other markets there. We should be able to utilize the installed capacity. I can produce simpler things which can sell in the market. They can make my unit viable, but as far as the goods that I require are concerned, we have limitations."

16. Asked about the figures of self sufficiency anticipated to achieve at the time of commissioning the project, the CMD, BHEL stated:

"I will have to work out the exact figures but my own estimate is that something like 75% we would have covered ourselves and 25% we would have left from other sources."

When enquired why BHEL was still going in for Rs. 22 crores, worth of forgings and castings from abroad, a representative of BHEL stated that with the present capacity, self sufficiency in respect of forgings had not been achieved.

D. SSTP, Trichy

17. The SSTP, Trichy started production in 1978-79. The targets of production of this project for 1978-79 was 6,500 tonnes, for 1979-80—7000 tonnes and for 1980-81—8,000 tonnes. The actual production, however, was 3359 tonnes, 3555 tonnes and 6472 tonnes respectively. The main reason for poor performance of this unit is stated to be the low production due to power cuts and higher cost of inputs as compared to the DPR projections. Technological absorption is also stated to be taking longer time than anticipated.

18. Asked about the prospects of this factory becoming viable, the CMD, BHEL stated that SSTP was expected to be viable by 1984-85. Speaking about the losses incurred in this unit, the witness stated:

"This trend has reverted now. My SSTP losses have started declining. The question is, at what rate I can make it decline to be able to come down to zero."

19. During evidence, the Committee were informed by BHEL that the production of SSTP was expected to be 13,000 tonnes during 1981-82. The Committee enquired why it was proposed to have only 13,000 MT of production when its installed capacity was 24,000 MT. A representative of BHEL replied:

"The production is planned on the basis of the demand needed for the Trichy's boiler production needs. The plant itself has been designed to meet about 67 per cent of the tube requirement of the boiler plant."

The witness stated further:

"Taking the next year's production requirement, it has been planned such that this part which can be manufactured

within the seamless tube plant is to be fully met from the tube plant. That is how a lower requirement has come up at the moment. We are assessing the demand of spares that are needed and also the tubes that are needed for free sale all over the country. Perhaps this year the assessment will be complete. We will be able to step up production to 30,000 tonnes next year."

The witness, however, admitted, "If the demand could have been there, we could have produced 24,000 tonnes."

20. The Secretary, Department of Heavy Industry however, did not agree that demand constraint in SSTP was a long term problem. According to him, the problem in SSTP was relating only to that of getting the right type of steel. Subsequently in a written reply furnished to the Committee, the Department of Heavy Industry, however, agreed that adequate effort would also be needed on the marketing side to reach the capacity production of 40,000 tonnes per annum.

21. A representative of BHEL informed the Committee during evidence (January 1982) that the demand study started 18 months back and that BHEL started intensifying the study since April 1981. The study is done by SSTP, Trichy. Enquired whether BHEL had a Central Marketing Organisation and if so why it should not be used for the demand study of tubes, the CMD, BHEL, stated:

"I agree we have a market organisation for all the products. But purely for the tubes, my submission is that tubes come only from Trichy SSTP."

22. As regards international market, the CMD, BHEL stated "We have got the first export order from USA though it is only of about Rs. 1 crores." He stated further "The Soviet Union people have also made promises that they may place a large order with us." When the Committee suggested setting up of a Central Marketing Organisation to explore international market the CMD assured:

"We will do it. As far as our marketing outside India is concerned, our export division requires strengthening."

23. Explaining higher cost of inputs as a reason for low production in SSTP, the CMD, BHEL stated during evidence:

"The input to these tubes—the billets—is either imported or made indigenously. The indigenous cost is much higher—about 90% higher—than that of the imported ones. The

tubes are an input to the boiler. We reckon the tubes at the imported cost. If we take the imported billets and produce the tubes, it is all right. But if we take the indigenous ones and fit them into the tubes, then we keep on losing because we have paid a higher price for the inputs."

24. Asked whether BHEL had taken up the question with the Ministry of Finance or with the controlling Ministry either to increase the customs duty on imported ones or to reduce the excise duty on indigenous ones, the witness stated, "for the last two years we have been taking up this matter." The witness also stated:

"We are approaching the BICP that either the price of indigenous billets should be pegged down or the price of our tubes should be linked up with the increase in the price of indigenous billets."

25. Admitting that so far government was permitting them to import for their requirements of the boilers, the CMD, stated that they had not raised the question of import of billets that they might use for manufacture for outside consumption. He also stated that they were purchasing indigenous billets in a limited way. Explaining the reasons for indigenous purchase, he said:

"I had approached for the import of billets because we expected that we would be given the whole lot. After two months, we were told that unless we buy from Mahendra and test their product and see whether these billets are usable or not, the import cannot be released. The import was subject to the condition that we would simultaneously carry on experimenting with the indigenous billets. Initially when we got the billets from Mahendras, we said that we were not getting satisfactory quality and they said that we might try another batch which they had. We are now in the process of trying that also."

On the question of purchase of billets made indigenously, the Secretary, Department of Heavy Industry stated:

"On account of a small production their prices may be higher compared to foreign producer but that is a different issue. But in sense they are meeting the quality. I think we will not be allowing imports of billets any further."

According to him, in certain cases the price for self reliance will have to be paid.

26. The Committee were informed by the CMD, BHEL that there was no collaboration for seamless tube and that BHEL had only purchased equipment from abroad. The Committee were also informed that DEMAG MEER (Suppliers) had got to demonstrate that the plant was working satisfactorily, and that this performance testing of the machine could not be done within the guarantee period due to non-availability of power. One year's delay is reported to have taken place so far. As a result, the technological absorption which was originally scheduled to be completed by 1983 is now reported to be delayed by one year.

27. It transpired during evidence of BHEL that power interruptions had resulted in damage twice to the rotary hearth of SSTP plant once in June 1980 and then in August 1980 for which extensive repair had to be undertaken. It was stated that when the furnace was commissioned, it was not visualised that there would be such frequent interruption of power and that the damage did not come as a Surprise as there were some indications about it. The cost of the repair was reported to be not Prohibitive but only the time element was stated to be the problem as the furnace had to be shut down for 7 or 8 weeks. The Committee enquired whether it was not possible to provide a generator so that the furnace was maintained above the limits of temperature where the damage could occur. A representative of BHEL replied: "When the plant was designed, we had asked each and every supplier what would be the emergency power that would be required for the safety of the equipment in case of power break down. They all said that except for lighting and some instrumentation control, power was not required in an emergency."

28. The Committee enquired the Department of Heavy Industry while examining them whether it could be said that the project formulation in these cases was quite satisfactory. The Secretary, Department of Heavy Industry, replied "By and large, I would say 'yes'" and continued:

"For losses there are many other reasons also. In UP power supply has been one of the causes. In the case of CFFP,

they had to undergo re-orientation, because the main product for which CFFP was to produce forging and casting changed. So, they had to re-orient this. They might have gone wrong—that is why I said by and large. Most of the people inside and outside the Government feel that the absorption of foundry and forging technology is simple. Actually, it takes a longer time even in the manufacturing stage. To that extent the formulation of the project report had gone wrong.”

On the question of cost escalation in these projects, the Secretary, Department of Heavy Industry said:

“These things will happen only because there is no change in the guidelines of the basic system. Our total planning concept is at current prices. It cannot always be fulfilled because the price-rise is bound to be there. So, the whole thing is not in the hands of the project organisation to change the total concept.”

29. The Committee were informed by Secretary, Department of Heavy Industry during evidence that various review meetings had been held to review these projects. Asked what was the outcome and what directions were given to the BHEL for timely corrective steps to make these viable, the Department of Heavy Industry stated in written reply that BHEL was directed to form an operation monitoring Committee to review the operation of the SSTP project. The Department further stated in this connection that while it could be said that the entire machinery and equipment for producing 40,000 MT was available in SSTP, the full production capability of the system was yet to be developed as other inputs were yet to be fully acquired.

E. Projects under execution

30. There are 5 projects costing Rs. 5 crores or more which are currently under execution by the BHEL. These are (i) Hydro sets expansion, Bhopal; (ii) large-size TG sets at HEEP, Hardwar; (iii) Boiler Plant, Phase III expansion, Trichy; (iv) Boiler auxiliary plant, Ranipet, and (v) Bowl Mills, Hyderabad. In all these cases cost escalation is indicated but no delay in commissioning is anticipated. Asked to indicate the extent of cost escalation and the

change in the anticipated internal rate of return in respect of these projects, the following figures were furnished to the Committee during evidence:

	Sanctioned cost (Rs. lakhs)	Revised cost (Rs. lakhs)	Original internal rate of return	Revised internal rate of return
(i) Hydro sets, Bhopal	642	705	15.65%	14.59%
(ii) LSTG, Hardwar	4308	5035	11.8%	*
(iii) Boiler plant, Phase III	2983	3548	13.6%	11.01%
(iv) Boiler Auxiliaries project, Ranipet	2159	3202	18.55%	13%
(v) Bowl Mills, Hyderabad	1858	2038	15.5	*

*Under finalisation

F. Delay in project approvals

31. According to the information furnished by the Department of Heavy Industry last year (1980-81), one of the major problems faced by BHEL which was raised in the performance review meeting is considerable time taken for clearance of various investment proposals by government. Asked what was the maximum time taken for the clearance of project proposals and how it was proposed to reduce that, the Secretary, Department of Heavy Industry stated that the maximum time taken was 2 years in case of Research and Development Facilities project and the minimum was 8 months in respect of the Central Foundry Forge Plant. About the time taken for clearance of projects under construction, the witness informed: "Bowl mill—took one year one month. Boiler auxiliary plant at Ranipet took 1 year and 10 months. Phase II expansion also took 9 months and LSTG at Hardwar took 8 months. Bhopal additional facilities for hydel sets—1 year and 3 months." He has opined that the reasonable time on the basis of the system as it exists for clearance of project proposals should vary from 6 to 9 months and stated: "sometimes there are difficulties, one has to go into various reasons; there are cases where some of these delays were justified." Explaining the delay in respect of R&D project he stated: "There were opinions that this is the first time BHEL is going to set up R&D facilities and that it should go for a comparatively smaller project. It went all the way to PIB and then it went backward for a review and all that time got included. A new project had to be evolved—a smaller project. The original project

was Rs. 38 crores and the revised project was very much smaller... Another suggestion was that the scientists and their technology should also be involved. So the reworking took a considerable time."

32. According to the information furnished to the Committee by BHEL there are 5 cases which took more than one year for clearance by Government. These are (i) Hydro sets expansion, Bhopal; (ii) SSTP, Trichy; (iii) Boiler auxiliary plant, Ranipet; (iv) R & D projects, Hyderabad and (v) Bowl Mills, Hyderabad.

III. PRODUCTION PERFORMANCE

A. Capacity utilisation

1. The actual value of production ranged from Rs. 474 crores to Rs. 816 crores during the period 1976—81. From the detail of actual production *vis-a-vis* installed capacity the Committee observed that there have been huge shortfalls in respect of (i) thermal sets at Bhopal and Hyderabad, (ii) hydro sets at Hardwar, (iii) nuclear steam generation equipment at Trichy, (iv) other transformers at Bhopal, (v) Control panel at Bhopal, (vi) Industrial electrical machines, Hardwar, (vii) pumps at Hyderabad, (viii) power devices at Bangalore, (ix) Ceramic insulators at Bangalore, (x) Casting and forging at CFFP, Hardwar and (xi) capacitors at Bangalore.

2. Accounting for the under-utilization of capacity of thermal sets at Bhopal, the CMD, BHEL stated in evidence:

“Regarding thermal sets at Bhopal the capacity was created for 120 MW sets for which we do not have adequate demand. In fact, most of the demand has disappeared. We have now changed over from that technology in that range. And the question of continuation of these sets with the original technology at Bhopal is under our active consideration.”

In regard to Thermal sets at Hyderabad the position regarding capacity utilisation is stated to be similar to that of Bhopal because of deficiency in demand for 110 MW sets. The CMD, BHEL admitted that the capacity at Hyderabad in the context of 110 MW is under-utilised.

3. Reportedly there are two factors for under-utilization of capacity of hydro sets at Hardwar. One is inadequacy of orders which can come only from the national plans. The second is about the product mix that was obtained. Every hydro set has to be tailor made to suit the conditions obtained in that hydro set. Therefore sometimes, the MW order is reported to be small and it is not possible to utilise the capacity fully as indicated in the DPR. It has also been admitted that there is under utilisation of capacity in nuclear generators at Trichy. In this context, CMD said that

"this is a highly sophisticated and complicated technology. As we are learning and going along whatever job we have done that is not causing any problem."

4. Regarding other transformers at Bhopal the witness said "after the capacity at Jhansi was created, manufacture of these transformers was taken up at Jhansi. Substantial facilities provided for these transformers were also transferred to Jhansi. Of course, the space and other things were still available at Bhopal. We have started using these facilities for larger transformers."

5. In regard to industrial electrical machines at Hardwar the witness said that the variety was very large in the product mix obtained and observed: "We did not get a long series of production of the same type...When we first manufacture, it takes a long time and it created a lot of difficulties."

6. As regards the pump set at Hyderabad, he said that they "are made according to the customer needs, the smaller ranges for the Bharat Pump Compressors. The number actually may not reflect the total capacity as such, because if we take the higher size pumps the work content can be different."

7. Enquired whether the under utilisation of capacity or inadequacy of existing capacity of the BHEL came to the notice of the Government in the course of the performance review meetings the Secretary, Department of Heavy Industry replied:

"As per the present performance as also the recent years' performance, the items where there is inadequacy to the existing capacity are in the case of Hyderabad Unit, particularly the TG sets. It is a factory meant for manufacturing smaller sets and at present orders for smaller sets are not coming forth in adequate number. The other areas in Hyderabad factory where similar position is existing are compressors, etc."

He, however, expressed the hope that "position should get reversed because during this year a sizeable number of orders—I think about 27—from the Fertilizers industry have been received by them. Now, so many new plants are coming up and therefore orders are being placed with the BHEL, Hyderabad, for the supply for compressors."

He continued further and said:

"Now the energy meters at the Bangalore Unit of BHEL was not doing well...That unit was manufacturing meters

which were useful for the agricultural purposes. Now in the States they were not required to put up these meters and hence, there was no demand for these meters. For domestic purposes also these were not required. For some period, this problem may have to remain. These points have definitely come in the review."

8. On the question of capacity constraint, the witness said:

"There was a case earlier in boilers but there was an answer for that. Supposing there was a constraint for drums, they imported the drums fabricated by Japanese, but they were able to produce if they got that item imported, instead of importing the whole boiler."

9. The Committee wondered how in spite of significant under utilisation of capacity the targets of production in financial terms had been fixed in such a manner that the actuals had been by and large more than the targets. The CMD, BHEL then informed the Committee that their system of preparation of annual budget was based on customer commitments on the anticipated orders for the building up of work in progress, - their capability, material availability etc. If there was any area after taking into account what they provided for production as a replacement or additional jobs where adequate orders were not available, to that extent that much capacity in the budget itself was left out. Asked whether they made an allowance for under-utilization of capacity at the time of preparation of budget the CMD, BHEL stated that wherever adequate orders were not available the under utilization of capacity was allowed and that budget targets for new units were not formulated on the basis of full utilisation of capacity.

10. It has been stated in a note furnished to the Committee that owing to the customer preference for thermal sets of higher ratings viz. 200/210 MW, 500 MW at Bhopal demand for lower unit ratings of 30 MW and 120 MW at Bhopal and 60 MW and 110 MW at Hyderabad has been gradually tapering off and that the capacities originally created are being utilised for the manufacture of turbo sets of higher/different ratings and other products. Enquired if there was not still under-utilised capacity at Bhopal and Hyderabad the CMD, BHEL stated:

"If I get orders of 120 MW, there is no underutilised capacity."

11. In this context when the Committee enquired about the demand in under-developed countries for lower unit ratings, it has been informed that those countries had small requirement and in their grid 120 MW was a big thing. Because of low utilization of manufacturing facilities all over the world there is stated to be stiff competition in the international market. The CMD, expressed the hope that with the adoption of modular concept BHEL would be favourably placed in the years to come. He, however, felt that the price at which they enter the market may be a problem initially.

B. Production constraints

12. The BHEL's products cover broadly 22 groups and 5 of these reportedly face production constraint and 7 face demand constraint. The production constraints are stated to be largely in the nature of power cuts, non-availability of wagons, special steel imported components and insulating materials and delay in receipt of sub-contract items.

Steel

13. The Committee desired to know the quantity of steel imported and the quantity of steel purchased from the open market and the additional expenditure on account of inadequate availability of J.P.C. category steels from indigenous sources and resorting to imports during the years 1976—81. Following figures were furnished to the Committee by BHEL during evidence:

Quantity of steel

	Imported (in tonnes)	Purchased from open market (in tonnes)	Additional* expendi- ture (Rs. in lakhs)
1976-77	19761	1800	472
1977-78	18100	800	426
1978-79	39062	1000	584
1979-80	56870	2000	715
1980-81	57740	800	451
1981-82 (budget)	5500

*This is the difference between the imported price and the price available in stockyard for receipt.

14. Justifying the large quantity of steel imports a representative of BHEL stated that the required quality specifications I.S. 2062 and the required quantity of steel was not available in the open market. Regarding the supply of JPC category of steel it was stated that BHEL's frantic efforts in 1980-81 to sort out hold up items could not succeed. Steel is a canalised item and bulk imported through SAIL under back to back arrangement. BHEL informed the Committee that upto 1979-80 they were virtually not getting any buffer though they made a good deal of effort. The price difference is stated to be approximately Rs. 300 per M.T. if the supply is made from the buffer stock. In the beginning of 1980, BHEL is said to have approached Ministry when the shortfall reached all-time high and for the first time in 1980-81 they got a buffer allocation of nearly 19,000 tonnes out of which 15,000 tonnes they actually got.

15. Enquired about the extent of delay in getting notified of the allocation of buffer steel at present, BHEL has informed in a written reply that the time lag is six months from the date of submission of BHEL's requirement to J.P.C. However, time lag between the time J.P.C. has allocated steel to Department of Heavy Industry after an overall allocation by Steel Priority Committee to various sectors of economy and the time lag for sub-allocation by the Ministry to BHEL is stated to be of the order of 2-4 weeks.

16. The Department of Heavy Industry had intimated to the Committee in 1980 that "a system has also been devised to assist the public sector units on priority basis with regard to supply of steel in close association with the Department of Steel/SAIL/JPC." Asked since when the BHEL had been taking up with the Ministry the non-availability of steel and when was the system of getting priority allocation of steel to BHEL introduced, the Secretary, Department of Heavy Industry stated during evidence that BHEL had been taking up with the Ministry continuously and "in that system during the current year the import of steel by BHEL directly is going to be 55-60 per cent of last year." He also stated "For 1979-80, BHEL imported 66,770 tonnes, in 1980-81-57,740 tonnes. This year so far it has received 33,500 tonnes of imported steel. In these balance two months or so another four or five thousand will be imported. It will be less than 40,000 against the order of 60,300."

17. Stating that the significance of buffer steel system is losing ground, the witness stated, "(when the system was introduced) the Indian steel was much cheaper. But today on the one hand prices have gone up and there is steel glut outside." He has, however,

clarified that there is shortage and production capacity within the country is also much less in steel plates which BHEL is importing predominantly.

Wagons

18. The Committee desired to know whether there was any inter-ministerial coordination in regard to the wagon requirements. The CMD, BHEL stated:

“Most of our problem relates to special type of wagons of 90 tonnes or 180 tonnes capacity. We have to get even the sanction of the Railway Board for movement and get it expedited. This is being continuously coordinated as we have a cell dealing with this wagon movement....”

In regard to shortages of wagons, that is being continuously coordinated and if need be, I will personally intervene and the response is very good.”

19. Asked how the wagon requirements shot up from 8148 in 1979-80 to 11709 in 1980-81, it has been stated in a written reply furnished by BHEL after evidence that during 1980-81, BHEL faced difficulties as Railway Board strictly enforced the stipulation of moving box wagons in a rake of ten or twenty to a particular destination. In order to meet despatch targets, BHEL had to resort to underloading of the wagons or ask for more number of KC wagons which are half the size of tax wagons. It is noted that both the moves pushed up the requirement of number of wagons for the year.

20. Asked about the suggestion regarding building special wagons at the cost of BHEL or specially for BHEL, a representative of BHEL stated that as regards the special wagons the railways themselves have got 8 nos. of 130—tonne wagons and 10 nos. of 90—tonne wagons BHEL also own 3 nos. of 180-tonne wagons and 2 nos. of 90-tonne wagons and have further ordered for 3 nos. of 150-tonne wagons which is reported to cost over Rs. 50 lakhs. The delivery is expected in mid 1982. Informing the Committee that the Railways themselves have ordered for some more wagons, the witness expressed the hope that BHEL's requirements of wagons would be met if the wagons from railways and their own wagons are taken into account.

21. Asked what was government's reaction to the suggestion of the BHEL for (i) priority allotment of steel wagons and cement; (ii) for assured power supply from Electricity Boards and (iii) for direct import of steel, the CMD, BHEL deposed.

"The Government have been responding to our request and to the extent they could allow, they have been allowing us priorities. For the priority allotment of steel, we have been continuously saying that we should get the same priority as for Defence. We have created sufficient sympathy to get that priority...For cement also, we are successful in convincing them that we should have the same priority as No. 1 for any other sector."

BHEL's complaint is stated to be against the suppliers who are unable to make supply area making the commitment.

22. On being enquired about the action taken by the Department of Heavy Industry for the priority allocation of wagons, cement etc. the Secretary of the Department informed the Committee that to finalise these systems the Department recently held meetings with the Chief Executives of the Public organisations under their control and that the Department had a session attended by the Minister of Industry, members of Planning Commission, Chairman of Railway Board and the Secretaries of the Department of Steel, Coal and Power. Pointing out that this type of meetings was something new, the Secretary stated:

"If all the organisations are put together in the Department of Heavy Industry, in the last 3-4 months our production has increased as compared to the earlier year; and we will be able to increase it by 23-24 per cent by the end of the year. Then we decided in the meeting that next year none of our organisations will have production target of less than 25 per cent over and above that of current year."

C. Demand constraints

23. As regards the demand constraint the products such as oil rigs, compressor, switch-gears, billets and blooms, seamless, tubes, meters and capacitors have been mentioned. Asked whether it was not possible to diversify the manufacture of rigs to cater to the Mineral Exploration Corporation and Geological Survey of India etc. BHEL replied in negative and stated in a written reply that "it is not possible, since the type of rigs made by BHEL would not be technically suitable for applications other than on-shore oil exploration."

Compressors

24. The Committee desired to know in how many cases at the instance of the foreign consultants Compressors of foreign make had been imported into the country during the 5 years. In a written reply furnished to the Committee BHEL indicated the following items and reasons therefore for import:

Project	Year	Item	Reasons for import
1. RCF THAL Project 2x1350 TPD Ammonia Plant.	1981	1 No. Synthesis Gas compressor with drive turbine.	Consultant recommendations.
2. KRIBHCO Hazera 2x1350— TPD Ammonia Plant.	1981	2 Nos. Synthesis Gas Compressors with drive turbincs.	As per consultant BHEL did not have adequate experience and hence disqualified from bidding.
3. GNFC 900 TPD Ammonia Plant.	1977	(a) 1 No. Air compressor with drive turbine.	On the advice of the consultants, customer wanted axial compressor which is not in the scope of BHEL.
		(b) 1 No. Ammonia compressor with drive turbine.	On the advise of the consultant customer wanted injection/extraction compressor for which BHEL do not have reference.

It has been stated that in all these cases, BHEL's compressors would have served the purpose equally well.

25. Explaining the reason for allowing import of these items, the CMD, BHEL stated "For the performance of the total plant, the consultant is required to guarantee the performance and this they are reluctant for every compressor varies from the other. In some cases, we have met their requirements and in some other cases there may be some minor variations. They say 'where is your compressor running'? That we are unable to give though we have very good collaboration. So we allow them to import."

26. The Committee wanted to know whether the Ministry was aware of the import of these compressors and if so whether it was taken up with the Ministry concerned and satisfied that the import

was inevitable. The Secretary, Department of Heavy Industry admitted: "I agree that precaution has not been taken from the very beginning" and assured: "I am personally going to take up with the Department of Fertiliser as to why their specification was not taken care of." stating that the real precaution has to be taken much earlier, he assured: "We will see to it that it is done."

27. In a written reply regarding import of compressors furnished to the Committee subsequently, the Department of Heavy Industry have stated that on further discussions, the customers in the case of Thal Project have agreed to give a letter of intent for the subsequent sets. It has also been stated that in the case of Hazeera Project, the customer has now assured BHEL that they will extend all possible help in obtaining the order for other machines i.e. ammonia carbon dioxide compressor.

28. In the opinion of CMD, BHEL the solution to the problem of compressors lies in going in for standardisation. He stated in this context "At one time our design institute were very well advanced but somehow or other they have deteriorated. If that design institute can come up, it will go a long way in meeting this problem. Some of the best people have left it. Wherever we are the only consultants it is very simple for us to standardise."

Switch gear

29. It has been stated that in recent years SF6 technology for Circuit Breakers have developed very rapidly and these Circuit Breakers are becoming increasingly competitive and are being preferred by the costumers to the Air-blast and minimum oil breakers. Asked who were the main competitors for the switch-gear and who would be the collaborator for updating the technology of the BHEL, the Committee have been informed that Transformers and Electricals Kerala Ltd. (TEIK), Aluminium Industries Ltd., Hindustan Brown Boveri Ltd., Tata Merlin Gerin, NGEF and Crompton are the main competitors to BHEL. The Committee have also been informed that BHEL has entered into a technical collaboration with M/s. Siemens, West Germany for manufacture of SF6 Circuit Breaker who are considered to be leader in SF6 technology and is confident that with this collaboration their supply position will substantially improve.

30. According to the Department of Heavy Industry the installed capacity for H.T. circuit breakers in 17,954 Nos. per annum and 1984-85 demand has been estimated at 12052 Nos. It has been stated that this is an area where technology upgradation has been keenly

felt because of the rapid changing technology and the emphasis, therefore, is to allow the industry to have better technology base by importing the new development. The demand is also stated to be on the increase for products conforming to latest international standards.

Larger Size Forged Blooms

31. The demand for the larger size forged blooms is stated to be not sufficient for full utilisation of the installed capacity. The Committee wondered how then the capacity was created and asked how it was proposed to utilise the excess capacity. BHEL has stated in a written reply that at the time of preparation of DPR, it was envisaged that 40 per cent of this capacity will be utilised by other sister units of BHEL and balance would be sold to outside market. The other sectors, which could have consumed these sophisticated billets and blooms, however, reportedly have not grown that fast to utilise the capacity. Besides commercial types of billets and blooms available at cheaper rates are being used by small forging units, and they are available at cheaper rate because of being produced by concast process. It is also stated that the change in the present profile of BHEL also had an impact on the demand pattern of blooms/billets by bringing down the demand from 1600T to 800T.

32. BHEL has stated that in order to utilise the above capacity, they had approached Integrated Steel Plants, Defence and Nuclear, Fuel Complex. As a result of these efforts BHEL is stated to have got trial orders from some of them on a very limited scale. Besides a trial order of 100 MT. of spade-slabs has been booked from M/s SAIL, Rourkela. On successful completion of this order it is stated that a load of around 3000 MT of slabs is expected per year.

Meters

33. The demand for energy meters was stated to be satisfactory upto 1980-81 but when there has reportedly been a sudden slump during the current year 1981-82 due to non-metering policies by some state Electricity Boards for agricultural use. The order book position for water meters is also not satisfactory, Enquired about the remedy for the lack of demand of meters, BHEL has stated in a written reply that the following steps can be taken:—

—Explore export market

—Explore markets for systems which will use energy meters as sub-system.

—Convince SEBs to reconsider the question of metering agricultural connections.

It has also been stated that the point about the low demand of Energy Meters was raised by BHEL during the last Power Ministers Conference and it was impressed upon the various SEBs to reconsider their approach about metering of agricultural connections.

Capacitors

34. The Committee have been informed that "capacitors" are used for power factor correction in electrical transmission and distribution networks and systems and for better voltage regulation, thereby reducing power lossess to the minimum.

The order book position is poor for both LT and HT capacitors because of poor demand and stiff competition from a large number of small and medium manufacturers. Enquired whether it would be feasible to make the use of the capacitors compulsory and it would then result in fuller utilisation of the capacity of the BHEL, CMD stated during evidence:—

"There is no enforcement in the use of capacitors but the Indian Electricity Act and Rules stipulate that the meters and other industrial devices should not perform at power factors below a specified value. In case system power factors are lower than stipulated it will become obligatory for the user to improve the power factor of operation by installing static capacitors. However, in practice these are not strictly enforced. In case, these practices are enforced it will result in a fuller utilisation of the sub-transmission networks and also in a larger order book for capacitor manufacturers."

35. The Committee enquired as to who was the authority to enforce relevant provision of the Indian Electricity Act and Rules and why it was not being strictly enforced. Informing that this is enforced by the State Government, a representative of the Deptt. of Power stated "There is an incentive to maintain power factor in the tariff itself. The industrial consumers perhaps may utilize this. But in the case of rural consumers, there is no such incentive. More States are moving in the direction of flat rate tariff." Stating that "from the Central Government we have been trying to encourage the use of the capacitors in the rural areas" the witness felt that in the rural areas definitely the capacitor should be installed in greater numbers. The prices of the capacitor reportedly vary from Rs. 135 to 480 depending on their capacitors rating.

D. Licensing policy constraint

36. On being enquired whether BHEL has any suggestion in regard to the licensing policy of the government. On the basis of their experience with products facing demand constraint, the following suggestions were made by CMD during evidence:

"In some areas over-capacity has been licensed for certain range and types. In general, licence for sophisticated technology and higher rating products should only be given to those manufacturers who have demonstrated/ absorbed the technology for lower ranges and who have a sustained interest in these products and related R & D works. This, would avoid proliferation of manufactures in high technology areas, ensure better utilisation of scarce resources and discourage entering of not so serious businessmen in these areas. In areas like transformers, switch gears, capacitors insulators, meters, motors etc., further licensing has to be very carefully regulated.

2. In technology field also, in sophisticated ranges, not more than two to three streams of technology should be permitted in the country.
3. There is a ban on further licensing in urban areas. We hope this would not hamper our working in Hyderabad, Bangalore etc. where BHEL should be allowed to expand production within the given premises especially for straight technology products in core sectors.
4. The licences to BHEL should not be tied to a location. This will help BHEL in better utilisation of total resources available in various manufacturing locations also. Whenever a system is supplied by BHEL different components may be manufactured at different locations. Locational independence will help in this process.
5. When BHEL has licence for products like steam turbines, boilers etc. a separate licence is not necessary for these assemblies and auxiliary systems like controls, excitation

systems etc. The control systems are becoming increasingly electronic based and micro-processor based systems are utilised. In order that BHEL is able to supply contemporary complete systems, the main equipment, the licence could cover components such as process computers, programmable logic controllers, special controls, micro-processor system etc.

6. The need for products of importance to more than one PSE is being felt increasingly, e.g. controls for micro-tools. In such cases, the manufacturing licence could be given for a new unit, under a joint ownership of the concerned public sector."

37. Some of these problems are stated to have been taken up with the Government and others are in the process of being taken up. BHEL has stated in a written note furnished after evidence that their views regarding regulation of the number of unit of high technology items and of the streams of technology have been recorded, and form part of the recommendations of the "Working group on Electrical equipment" published by Government.

38. On the question of capacity creation in high technology areas (transformers, switch-gears and capacitors) and diversity of technology, the Department of Heavy Industry have stated in a written reply that while granting fresh licenses for these and other items, the Government have to consider not only the internal demand as projected but also the possibility of export that exist for these products and make necessary provision for this in the capacity that is created. The installed capacities, according to them, should not just be viewed *vis-a-vis* the internal demand alone to decide whether demand constraint exists. The Government is stated to be of the opinion that adequate capacity (in fact a little over the projected demand) as also valid technologies should be available so that competitive edge of the Indian manufacturer is maintained both in the domestic as well as international market.

E. Competition

39. Till April, 1978, thermal sets, Hydro sets and Traction Equipment were reportedly in the monopolistic range of BHEL and their prices were fixed by BICP, BPE and Chief Costs Accounts Officer of the Government of India respectively. Since the liberalisation of import policy in April, 1978, the power generation equipment is stated to have been included in the list of items allowed for global tendering. Therefore, at present these products

are also stated to be not in the monopolistic range of BHEL. Though in a note furnished to the Committee, BHEL had indicated Seamless Steel Tube as one of the items facing competition within the country the Committee have been informed during evidence that as far as the basic product is concerned they are the sole manufacturers and its price is to be fixed by the BICP.

40. Asked how many contracts BHEL had lost on account of global tendering and what was the value of these contracts BHEL in a post evidence reply, indicated two projects viz. (i) Ramagundam, NTPC (3 X 200 MW TG sets/boilers) and (ii) Trombay power station (Electrostatic precipitators and feed heating plant for 500 MW) and informed that the total value of these contracts was Rs. 127 crores.

41. Enquired to what extent the underutilisation of BHEL's capacity for production of power generation equipment was the result of the global tendering permitted by government, the CMD, BHEL stated: "The orders which we have lost now will get reflected in the utilisation of plant capacity from 1984-85." He, however, admitted that due to loss of contracts on account of global tendering BHEL already suffered in capacity utilisation in the areas of hydro or thermal sets of a smaller range. The Secretary, Department of Heavy Industry has, however, stated in evidence that there has not been really any adverse effect on the BHEL on account of global tendering permitted by government and said:

"Firstly, 1984-85 order book position, I would not say is being affected very badly. I think it should be all right. But even if it gets affected, I would not say that it is on account of imports. That we will not allow."

42. Informing the Committee that BHEL is at a disadvantageous position while quoting against non-IDA global tenders compared to foreign suppliers on account of various types of duties and taxes that have to be paid by them, BHEL has suggested that since BHEL is importing items for use at various projects import licences should be endorsed for project import and only preferential rate of duty should be levied against such import. In this connection, the Secretary, Department of Heavy Industry has made out a recommendation that duties on import of such materials which are not available in the country should not be more than the price of a component which is manufactured abroad and stated that this matter has been taken up with the Ministry of Finance.

43. Department of Heavy Industry have informed the Committee in a written note furnished after evidence that according to the customs tariff, imports of components and raw materials, etc. for specific power or industrial projects are eligible for flat rate of duty of 50 per cent *ad valorem* whereas, if assessed separately, not as project import, they attract varying rates of duty from 50 per cent to 130 per cent. This is, however, subject to the conditions laid down in this regard. These regulations require that the details of all items to be imported have to be recommended by DGTD and attested by the Licensing Authorities. This procedure has to be completed before the imports arrive which in practice is stated to have been found very difficult.

44. The Department of Heavy Industry have informed that the question of amending Project Import Regulations so that the BHEL can avail of this concession based on the certificate issued by the concerned General Manager of BHEL has been taken up with the Ministry of Finance by the Department of Heavy Industry and a final decision is yet to be arrived at.

45. The problems relating to import of equipment for power plants, fertilizer plants, captive power plants for steel mills etc. and their impact on order book of BHEL are stated to have been referred to the Department of Heavy Industry for taking up with the concerned Ministries. When the Committee enquired about the action taken by that Department in this regard, the Secretary of the Department stated "It was a collective decision of Government as such that certain items should be put on OGL. But to protect the indigenous industry the Government at the same time formed a committee called the Empowered Committee and in fact the Secretary, Heavy Industry is the Chairman of that Committee. The Department itself is involved in the procurement of equipment. If there are individual reasons for allowing the import and if that does not hamper the indigenous capacity then it is a different thing. Otherwise the clearance of this Committee is not given."

46. It has been informed that there is stiff competition encountered in IDA tenders in India from foreign firms which has affected the performance of the BHEL adversely. The Committee, however, noted from the information furnished to them that during the last 5 years only one IDA contract was lost to the BHEL and enquired whether in order to win the contract the BHEL deliberately quotes below cost against the commercial interest. Replying that in international tenders BHEL quote prices considering compe-

tion and benefits which will accrue to BHEL in World Bank Contract the CMD, BHEL submitted that BHEL never quote below covering their direct costs and variables which are reported to be nearly 33 to 40 per cent. In a written reply furnished to the Committee BHEL claimed that of the 4 IDA contracts secured by BHEL in the power generating equipment sector except for in the first contract viz. Singrauli, in other 3 contracts BHEL quoted applying normal estimation method with a reduced profit margin. These contracts are stated to be at various stages of execution and the final cost returns are yet to come in. In the case of Singrauli, it has been stated that being the first contract, the estimates were made on the basis of marginal cost and the loss of this contract *vis-a-vis* the total cost is expected to be Rs. 25.0 crores.

Material Group

	1978-79			1979-80			1980-81		
	Imported	Indi- genous	Total	Imported	Indi- genous	Total	Imported	Indi- genous	Total
1 Ferrous	63	35	98	66	29	95	72	31	103
2 Bare Copper & Non-ferrous	5	7	12	3	8	11	2	8	10
3 Insulated Conductors & Insulating materials	11	9	20	15	9	24	11	9	20
4 Castings & Forgings	18	18	36	20	20	40	22	21	43
5 Components & bought out	109	64	173	154	71	225	176	94	270
6 Indirect materials	9	32	41	6	36	42	8	36	44
TOTAL	215	165	380	264	173	437	291	199	490

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48. The total annual purchases of raw materials and components and stores and spares of the BHEL ranged from 380 crores to Rs. 490 crores during 1978-81. Asked whether it would not be advantageous to have a centralised system of purchases to obtain competitive price on account of the bulking advantage, a representative of BHEL stated: "For 80 per cent of our purchases, specifications differ from product to product and plant to plant. It is only possible to certain categories of steel, copper and a few materials like cement etc." Apprehending that it would be more cumbersome to centralise all purchase, the CMD, BHEL assured the Committee:

"Whether we should centralise those items, which should be common to everybody or smaller amount can be centralised, that we will examine."

49. Pointing out that more than 60 per cent of BHEL's purchase came from abroad, the Committee enquired whether in such a situation, the progress of indigenisation of production in BHEL could be said to be satisfactory. Claiming that the progress in that is satisfactory, BHEL in a written reply has stated that CFFP has been gradually stabilising production of castings and forgings and this effort may yield a saving of foreign exchange of Rs. 10 crores in 1981-82. Similarly SSTP is also stated to have been stabilised manufacture of 30 sizes of carbon steel tubes.

50. It has been stated that in case of bought out items imports have to be resorted to when specific make is insisted by the customer e.g. gravimetric feeders required by NTPC even though volumetric feeders have been developed by Trichy, Turbovisory services of foreign make by some Electricity Boards even though the same have been developed by ECIL.

51. It has been stated that import substitution effort within BHEL units have identified high value of items amounting to Rs. 36 crores on which they are concentrating these efforts for import substitution.

52. Asked what was the anticipation in DPR in regard to indigenisation of raw materials/components the Committee have been informed that there was no specific programme of indigenisation mentioned in earlier DPRs for plants established at Hardwar, Bhopal and Trichy. However, for recent investments like CFFP, SSTP and LSTG it has been stated that indigenisation programme is adopted formally.

53. As regards the steps taken by the BHEL to develop indigenous production of raw materials/components the following have been mentioned:

- Taking up initiative in setting up of plants within BHEL.
- Entering into new collaborations for starting manufacture within BHEL.
- Liaison with other organisations for setting up facilities.
- Gear up production within BHEL.

However the following environmental factors are stated to militate against these efforts:

- Electricity Boards asking BHEL to get spares for imported equipment.
- Product to system sales trend.
- Necessity of updating technology so as to remain in the market and produce more reliable equipment.
- Short deliveries demanded in I.D.A. or export contract.

54. On the question of coordination with Department of Industrial Development and DGTD in regard to the steps taken by BHEL to develop indigenous production, the Committee have been informed that DGTD clears BHEL's every proposal for import only after it is satisfied that the items are either outside manufacturing capability of BHEL or any other party in the country. Whenever the items pertain to areas where investments have already been mentioned for BHEL, DGTD examine indigenisation development programme. At times, DGTD is also stated to help BHEL in locating potential sources for development.

IV. CONSUMER SATISFACTION

A. *Delivery of Equipment*

From the details of user-wise sale of plant and equipment by the Bhopal and Hyderabad units of BHEL costing Rs. 3 crores and above in each case the Committee noted that in a number of cases there were long delays in delivery and serious complaints regarding quality. For instance, delivery of thermal sets to Gandhinagar—II (GEB) expected in December, 1975, thermal sets for Santaldih—IV (WBSEB) expected to be delivered in September 1976/March 1977 by the Bhopal Unit, supply of plant and equipment to PSEB Guru Nanak III expected to be delivered in March, 1975. for Guru Nanak—IV in September, 1975, for NFL, Bhatinda in June 1977, for NFL, Panipat in October 1977, for FCI, Sindri in October, 1977 for GNFC-Bharuch in August/November 1979 by the Hyderabad Unit hydro sets for Lower Sileru—II (APSEB) expected to be delivered in May 1976, for Loktak-II and Loktak-III NHPC expected to be delivered in September 1978 (Unit III) by the Hardwar unit were all delayed by more than a year. Observing that such long delays reflected badly on the performance of the BHEL, the Committee enquired to what extent these were totally unavoidable. In a written reply furnished to the Committee, BHEL has stated that even though there were delays in completing the supplies from BHEL, compared to the contractual date, the units were commissioned much later after the receipt of equipment at site. Major reasons for delay in timely supply from BHEL are stated to be as follows:—

- (i) Delay in receipt of bought out items.
- (ii) Delay in supply of materials and equipment for critical piping, power cycle piping, instrumentation and control turboservisory and other auxiliary systems.
- (iii) Power cuts.
- (iv) Delay in the availability of special wagons.
- (v) Delay in identification and re-ordering components cannalised for operating units.
- (vi) Delay in the supply of components for fans, valves and components of electrostatic precipitators due to capacity

constraint in the manufacturing units of boiler equipment.

BHEL has informed the Committee that most of these reasons for delay were beyond the control of BHEL.

2. As already mentioned in Chapter I, the Ministry of Energy (Deptt. of Power) have not agreed with the contention that BHEL was not responsible for delaying commissioning of power projects during the period 1978—81. They indicated 22 units in respect of which major delays occurred in project completion and the specific delays in the supply of equipment supplied by BHEL that contributed to the project slippages.

3. The Committee have been informed by BHEL in a note that BHEL has been able to supply the main turbine and generator equipment in time. But delays have occurred in respect of purchased items and certain boiler house auxiliaries like valves, fans, piping etc. where there has been a capacity constraints. Asked when was this capacity constraint noticed and what action was taken since then to augment the capacity, the Committee were informed in a written reply that the capacity to manufacture boilers and auxiliaries was analysed in 1977. The load projections of VI plan revealed that the capacity should be increased to an equivalent of 4000 MW per annum in a period of 6 years from 1978-79. It has been stated that action to augment this capacity was taken in the year 1977 in the form of preparation of investment reports. The project reports were, however, completed in March, 1978 and were approved by Government in June 1979/July 1980.

4. To meet the additional requirements of steam generating equipment comprising of boilers and auxiliaries on account of inadequate capacity with BHEL, it has been stated that imports of Rs. 59 crores were resorted to during the period 1978—81.

5. Asked how soon would it be possible to standardise the equipment specification and lay-outs for improving delivery of equipment at sites, BHEL has informed in a written reply that deliberations have been held by the Standardisation Committee formed by CEA with participation from leading Electricity Boards, Consultants, NTPC and BHEL on boiler and TG packages for 210 MW sets. It has been further informed that final lay-out for TG package has been issued by BHEL to CEA on 26th November, 1981 and standard lay-out for boiler package was finalised in November, 1981. Schemes including instrumentation and control are stated to have

been finalised in December, 1981. Based on these BHEL has stated that they would finalise the parameters and specifications for major auxiliaries for TG package and would issue to CEA in April, 1982. As regards boiler auxiliaries standardisation is stated to be not possible due to wide variations in coal quality available for different projects. However, the possible alternatives are reported to have been circulated by BHEL to the Committee members.

6. The Department of power have informed the Committee in a written note furnished after evidence that the manual on "Standard Design of Thermal Power Stations with 200/210 MW Units having KWU turbine" is under compilation and is expected to be released within a few months.

B. Performance of Equipment

7. The Committee were informed by the Ministry of Energy (Department of Power) in a written note that the all-India average plant load factor for the thermal (including nuclear power system) ranged from 4.7 per cent to 48.4 per cent during the years 1978-81. From the details of the plant load factor of BHEL make units furnished by the Ministry, the Committee noted that during the year 1980-81 as many as 4 units of 200/210 MW group, namely, Koradi-5, Ukai-4, Satpura-7 and Parli-3 and 8 units of 110/120 MW group, namely Chandrapura-4, Chandrapura-5, Ukai (TI-2, Kothagudem (B)1(5), Patratu-7, Kothagudem C-I, Harduaganj Extn-I and Bhatinda-4 attained load factor less than 25 per cent. Asked whether this did not primarily indicate the poor performance of the BHEL equipment, the CMD, BHEL said 'No', and stated that "the plant load factor of a unit depends upon continuous loading of the unit, load demand pattern of the system like the system load factor, availability of the hydro and thermal generator capacity-type, quality and quantity of coal availability at the power station, proper commissioning and functioning of control systems such as cooling water system, coal handling and ash handling system and electrical traction system, expertise, skill and experience of operational staff and maintenance practices adopted and management of spares and other factors, plant and routine maintenance of equipment system and availability of trained staff and adequate spares for doing the maintenance". In this view, if all these factors were correct the plant load factor would be ideal.

The witness explained in this context:

"Our equipment was designed for a certain type of coal. That coal is not available. We have introduced modifications to match and respond to the availability of coal also.

The first set of 200 MW was tested on 3-12-1973 and commissioned in 1978. We were in the dark about its operation for a number of years. Any manufacturer in the world would make such a set run it, gain experience and apply correctives. We could not do that. In October, 1980, there were 13 sets operating. All of them have been manufactured even without testing the first set. We have now identified what are the modifications required and we have made those modifications. After that the sets have started functioning."

On the question of quality of coal, the CMD stated:

"The basic thing is that if coal contains silica so have adverse effect to the same parts which are meant to run for longer period . . . But when they gave us specification of coal, it was not intended for use of the coal now being supplied. They gave us huge ash content which means bigger volume; that is everything has got to be bigger. Similarly, Milling system will not be adequate. The worst of it is that several times there are reports that metal pieces get into the coal."

According to him the solution to that problem lies in installing washeries or putting large number of people to do the picking. About washeries, he felt that it is a question of investment and said: "There are two things. One, whether the coal can be transported by slurry. This has been tried in America. That idea will take quite some time to develop. We proceed selectively in this matter." Enquired whether it is physically possible to have washeries in plants, he stated that "there is no difficulty if money is there."

8. Submitting that it is true that plant load factor taken in isolation will not give an absolute indication regarding the performance of the equipments and that to a limited extent, it depends on systems design, quality of coal, quality of maintenance and other management factors, a representative of the Department of Power felt that the plan load factor on two plans working under similar conditions, in respect of these items, would give an indication of the performance of equipments.

9. Asked whether it was not desirable to make it obligatory for the BHEL to prove the performance of its generating sets upto the marked capacity, the witness said "It is desirable to make it obligatory". Informing in this connection that the contractual management

was one of the weak areas, he said that there were no detailed contractual obligation laid down between the BHEL and the Electricity Boards. Stating that they have learnt from many of the mistakes that has occurred in the past, the witness said that in the NTPC contract they had made it clear that the BHEL would show 72 hours duration of operation and then only the customer would take it. This obligation is stated to have been laid down in contracts from February, 1978.

10. Enquired whether this obligation is in force now, the Secretary, Department of Heavy Industry has stated in evidence (February 1982) that the first unit is expected to be commissioned in six months and that when the commissioning of other equipments are complete, the test would be insisted upon. In this context, the Committee have been informed by the Secretary, Department of Heavy Industry that they are trying to get the State Electricity Boards to insist on this obligation in future for which a model contract has been prepared by them. This contract is reportedly being finalised after the discussion of Central Electricity Authority with BHEL and other suppliers.

11. Suggesting that there should be a high-powered Committee for ensuring quality coal for power production, the CMD, BHEL stated during evidence:

“Sir, there are several Committees. There is a Committee for infra-structure even at the Cabinet level. But in relation to power sector itself there should be a high-powered Committee where representatives of all those who can specifically point out the generation deficiencies and how to make it up as far as coal is concerned should be associated. That, I think, is a positive step by which we can ensure that what is promised to the plan is ensured and even when there is some difficulty we can cut-off a plant which is un-important. Now, what happens is that a plant which is giving good results is cut-off.”

In this view that Committee should consist of Chairmen of Central Electricity Board, BHEL, Railways, Instrumentation Ltd., Kota, Coal India etc. and “should periodically meet and then identify the problems and apply correctives.”

12. Informing that in 1964 when BHEL took first collaborations for boiler, they could not get any country to give them collaboration except Czechoslovakia, the CMD, stated that the Czechoslovak design of boilers was not suited to Indian conditions and that the

boilers which have been directly imported from Czechoslovakia performed far worse than BHEL boilers. Stating that BHEL's 200 MW boilers are designed to combustion engineering design, he said:

"We and our customers are of the opinion that they are of much better design boilers and they are capable of working with little regulation of coal maintenance practices giving full rated capacity."

13. Informing that Kothagudem No. 6 is not performing well, the CMD has stated that it ran for a very short period and is not running now. The Committee were also informed that Koradi-5 was shut down for maintenance during the current year.

14. On the question of coordination in the construction of new plants the witness said:

"I am keeping a watch. In Badarpur, there will be a lot of improvement. But basic improvements cannot be done. If all the dust goes on to motor because of design, nothing can be done."

The Committee pointed out that whatever be the reasons, poor performance of Power plants brought bad name to BHEL, the witness stated: "I agree, because of that, we are going to every station and trying to ensure that it gives a very good performance."

15. Enquired if they cannot adopt the same system of sending their experts to all BHEL units and prove the maximum load capacity, the CMD said:

"It is a very correct thing, the right system is that when we sell the right equipment abroad then it is all right. Here the conditions are totally different and here they want to commission it even when there is no arrangement made for it. Then how can you prove anything under these circumstances?"

16. The Committee have been informed in a written reply that the average generation per day improved from 21 million Units in September, 1980 to 36 million units in May 1981. This improvement is stated to be the result of the modifications carried out in the equipments of the first thirteen 200/210 MW units commissioned by BHEL. In regard to 120/110 MW units, it has been stated that the problems arising due to use of coal and other environments were analysed and action plants have been prepared for carrying out these improvements.

17. Enquired whether all the thermal plants manufactured by BHEL are improving the CMD, BHEL said "They are very much improving. It is reflected in the overall improvement. We worked out the figures. I will not say it because of BHEL's contribution; but I would say that in respect of day-to-day improvement, the quota of BHEL's contribution is above 70 per cent."

He continued further and said.

"But comparatively, I can say that only from the original Czech designs of 110 MW, we will get trouble.... Except for these sets, all others are capable of giving full output. We are in a position to demonstrate each one of them."

18. Enquired about the performance of units not using BHEL equipment, the CMD explained:

"The IP unit in Delhi-imported units are: one of 35 MW, and three units of 61.5 MW. There is only one BHEL unit. In 1979-80, operating availability of imported units was 81, and that of BHEL 85. In 1980-81, the imported unit availability was 71, and BHEL's 94. The plant load factor in 1979-80 of imported unit was 71 and BHEL's 72. In 1980-81, that of imported units was 79 and BHEL's 72... At Harduaganj there were items of imported equipment, 2X50 Magawatt and BHEL had 2X60 and 1X60, that is three units. In 1979-80 the operating availability of the imported units was 46, ours was 62; in 1980-81 it was 36 for the imported units and 68 for our units. In 1980-81 their plant load factor was 26 and ours was 45. Thus at Obra for the five units of 50 MW each imported from Soviet Union we had correspondingly three units of 100 megawatts of BHEL. The operating availability in 1979-80 was 52 for the imported units and 86 for our units; in 1980-81 it was 63 for the imported units and 70 for BHEL's units. Their plant load factor in 1979-80 for the imported units was 44 and for ours was 60; in 1980-81 for the imported units, it was 45 and for ours it was 40—of course, this need to be examiner."

He informed that by and large BHEL units, by all accounts were better.

19. The Committee referred to the performance of generating sets brought out in Chapter IV of their sixteenth Report (1980-81)

on Damodar Valley Corporation where the performance of BHEL units were reported to be poor compared to other units as follows:—

“The performance of various generating sets installed by the DVC in terms of generation of power in KWH per KW of installed capacity against the norms of 5000 KWH of power per KW of capacity during the years 1976-77 to 1979-80 as furnished by the DVC is shown below:—

Name of the Units	1976-77	1977-78	1978-79	1979-80
GE Units	5371	5281	4920	4059
MAN Units	4996	4393	4249	2700
BHEL Units	1100	1310	3391	2828

Commenting on the information the CMD stated, “Regarding DVC, the sets are imported and at Chandrapur for the boiler we supplied the turbo-generator. The trouble is, it is not specified whether the defect is with the boiler or the turbo-generator. Boiler is being supplied by AVB. Nowhere have we heard about AVB. They are not our supplies at all.”

20. The Committee also referred to the following paragraphs from Chapter VI of the thirteenth Report of Estimates Committee (1980-81) on “power generation—Central Electricity Authority”—

“6.3. An expert on Power has stated in his Memorandum that the sets supplied by BHEL have many design/manufacturing defects with the result that the availability as well as the output of these sets is very poor. A State Electricity Board has identified 32 design/manufacturing defects in the sets supplied and these defects, it is stated, have been accepted by BHEL as well as their foreign collaborators.

6.4. A State Electricity Board has stated that 94.38 per cent of the operational hours lost in a power unit were attributable to equipment failure, design defects and deficiencies. The percentage in respect of two other units was 85.23 per cent and 87.28 per cent.”

Regarding the 32 design/manufacturing defects referred to in this report, the CMD admitted that “that is true” and said “But the

first design was a Czech design. At that time no collaborator accepted the Czech design. We had no choice."

21. The Committee were informed during evidence that BHEL had taken up a turn key project in India. It was in Parli. It has been informed that it was completed in the record time of 42 months and was synchronised in October, 1980. However, performance test is reported to have been not undertaken in this project. A representative of BHEL stated in this context. "According to the contract trial run is conducted on every set before handing over. The set must run 14 days continuously with 72 hrs. at full load. After that the performance test should be done within three months. But it can also be done within one year with correction curves. But we would not undertake this test for lack of facilities, e.g. coal supply, cooling water, instrumentation etc." Enquired about extension of guarantee period, the Committee have been informed that it is automatic till the trial test is given. The set is reported to have touched full load of 210 MW for 4 days in July, 7 days in August, 1981 and 7 days in September, 1981.

22 In a note furnished to the Committee it has been submitted that project renovation was launched in September, 1977 and it included 31 thermal units at 14 thermal power stations and 8 hydro units at 3 hydro power stations. An amount of Rs. 2.48 crores was spent in 1977-78, Rs. 7.72 crores in 1978-79; Rs. 4.50 crores in 1979-80 and Rs. 1.76 crores in the year 1980-81. During evidence a representative of BHEL pleaded that "This word 'renovation' is a little bit unfortunately used" and said "The correct word is 'modification or improvement.' "

23. In regard to 200/210 MW sets it has been stated that there were 13 sets operating in October 1980 and all these sets were manufactured before even one set was running. Modifications in these sets had to be carried out as a result of actual experience of the coal availability and of the conditions available. Regarding the question of expenses involved in modification the CMD submitted that "where the amount is not so much and where the modification will improve our future design, we thought it prudent to bear it ourselves." A representative of BHEL stated in this context that "in our estimates we keep a certain percentage reserved for such things and when complaints are there which are genuine where modification or improvement has to be done, we accept it as a sort of commercial obligation and do it free of charge."

24. Enquired about the technological improvements made in the products of BHEL as a result of the renovation programme. The following were mentioned in a post evidence reply:—

- (i) Platen binder coil modification.
- (ii) Link mechanism for ID and FD Fan.
- (iii) Leak-proof Dampers in PA Fans.
- (iv) Economiser modification.
- (v) Super heater (convection) modification.
- (vi) Steam Atomisation in Oil Burners.
- (vii) Air Heater modification.
- (viii) Water level Gauge Glass problem.
- (ix) Passing of valves.
- (x) BFP circulation valve problem.

25. The Committee desired to know whether there was any review at the government level of the position of power generation after the project renovation undertaken by the BHEL and if so, whether it could be said that the position in regard to the performance of the BHEL generating sets has become satisfactory. The Secretary, Department of Heavy Industry replied during evidence that the reviews had been done by the Ministry of Energy in all those cases and that, to his knowledge, the renovation operation had been carried out in Unit 2 of Badarpur power station where there was a positive improvement.

26. Expressing the difficulties involved in project renovation, the Secretary, has submitted that "In order to carry out renovation, they are basically manufactured according to the old designs in which old boilers have been built. There a long period of shut down is required. But the customer does not want it."

27. Regarding the performance of units in which renovation has been carried out, a representative of the Department of power has stated that of the 11 units which have been renovated 6 units have shown some improvement and in 5 units there is a little uncertainty. In the case of 110 megawatt units, he has stated that BHEL is still facing some problems. There are some basic problems with the milling plants. He has added that there are also two imported units which have not improved.

28. From the post evidence information furnished to the Committee by the Department of Power, it is observed that the plant load factor has actually deteriorated from 59 per cent in 1979-80 to 27 per cent in 1980-81 and 23 per cent in 1981-82 (upto Oct. '81) in Obra-3 which cost BHEL Rs. 149 lakhs for renovation. The plant load factor has also gone down during 1979-81 in Santaldih-2 from 36 per cent to 28 per cent, in Chandrapura-1 from 42 per cent to 16 per cent, and in Chandrapura-2 from 35 per cent to 15 per cent. The PLF in all the four units in Ennore has also declined during this period.

29. Informing in a post evidence note that equipment defects are one of the contributory factors for the unsatisfactory performance of the thermal plants, the Department of Power feel that while renovation of the equipment is necessary for improving the performance of the units, it would also be necessary to improve the overall operational management of the units for enhancing their availability and Plan Load Factor. In respect of the units which have not shown improvement after renovation, the Department have stated that it would be necessary to identify the factors that are responsible for the low availability and low capacity utilisation.

30. The Department of Power have informed that Central Electricity Authority has constituted inter-disciplinary teams to go into these aspects in detail and initiate necessary remedial action.

C. After Sales Service

31. In order to render an effective after sales service, BHEL has set up in 1976 a separate division viz. power projects and Services Division which provides after sales service both during the guarantee period as well as the post guarantee period.

32. Regional repair groups with specialists from products and systems areas have been located at Regional centres and these groups would facilitate prompt attention to technical problems arising out of operation and maintenance of equipment. Asked how soon the regional repair shops would be set up the Committee have been intimated that the repair shops will be established within two years after the scheme is approved and finances are made available.

33. In a note furnished to the Committee BHEL has informed that as on end March, 1981 the total value of overdue orders for spares was about Rs. 8.5 crores. This is expected to be liquidated

by the end of the current financial year. The orders due for delivery during 1981-82 is planned to be liquidated by June 1982. The value of spares supplied by BHEL during the last three years has risen from Rs. 25 crores in 1978-79 to Rs. 65 crores in 1980-81.

34. Asked what was the demand for spares for each of the last five years and to what extent was this demand met, the Committee have been informed in a written reply that in the past there was no planning by the power station authorities for spare parts. Orders were placed on BHEL sporadically. As a result BHEL could not plan the manufacture of spares on a systematic basis. By end 1980 spare parts catalogue were prepared by BHEL giving price and delivery period and was made available to the customers. It has been stated that the customers have now started placing orders on an annual basis which will help BHEL to plan the production activities.

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V. WORKING RESULTS

A. Overall Profitability

1. The division wise profit/loss of BHEL for each of the last five years is reported to be as below:—

Division	(Rs. crores.)				
	1976-77	1977-78	1978-79	1979-80	1980-81 (Provisional)
Bhopal	18.7	2.9	4.0	1.29	7.1
Jhansi	(1.6)	(1.4)	(2.9)	(5.8)	(2.7)
Hardwar	10.3	16.1	5.6	20.0	10.8
CFFP	(3.6)	(2.4)	(1.3)	(3.8)	(4.1)
Hyderabad	6.8	8.4	12.7	13.8	13.0
Trichy	23.5	33.1	26.1	22.8	18.3
SSTP	(0.4)	(2.6)	(6.7)	(8.2)	(8.6)
PPD	2.5	3.2	3.9	5.6	2.7
OPD		(7.7)	(0.7)	(5.7)	(0.4)
BHEL after corporate adjustments	62.9	57.42	50.5	43.3	36.0

2. The Committee observed that the overall profits of BHEL had come down gradually from Rs. 62.9 crores in 1976-77 to Rs. 36 crores in 1980-81. The Jhansi, CFFP, SSTP and OPD divisions were incurring losses throughout the period 1976—81. Bhopal division has shown considerable deterioration in regard to profitability. Asked what would be BHEL's corporate strategy to arrest this deteriorating trend in profitability and stabilise the profits at a reasonable level in order to create sufficient internal resources for future needs, the CMD submitted before the Committee:

“We have studied this question very carefully. Firstly, our new units are making determined efforts that at the earliest they break-even and contribute and make profits. The focus is on increasing the capacity utilisation, plugging the snags and improving the marketing position. Secondly, our inventory is higher than what it should be. These

several factors play a part and we are finally of the opinion that our efforts should now be to standardise the sets and improve the order book position. That will enable us to do far better planning of materials well in time. If the orders are not sufficient with us, the advantage of scale are not available at the time of planning. But now, we have succeeded in our efforts to get orders. In the first nine months of 1981-82, we have already received orders for 20 sets of 200 MW. That would enable us to standardise and plan better. We should be able to reduce the cost also."

3. When the Committee pointed out that in many areas the position has actually deteriorated during 1980-81, the witness said that "I can talk of the situation very clearly from September, 1980. I can say the position is improving continuously very fast. In September 1980 the situation was that my stocks were lying in the customs house and I did not have the money to release the stocks and production was suffering because material was not available."

4. Regarding the deteriorating trend in profitability the Secretary of the Department of Heavy Industry said that "the trend is being reversed. This year we expect that the profit would be much higher than last year."

5. According to the Review of Accounts for the year ended March 1981 by the Indian Audit and Accounts Department published in the Annual Report of the BHEL the position of gross and net profit after past period adjustments and tax provision for the years 1978-81 were as follows:—

	(Rs. in crores)		
	1978-79	1979-80	1980-81
Profit for the year	50.49	42.18	37.52
Less past period adjustments	- 0.34	- 4.55	- 10.88
Profit before tax	50.15	37.63	26.64
Tax provision	25.00	5.00	Nil
Profit after tax	25.15	32.63	26.64

6. The Committee referred to the extraordinary past period adjustments made in the accounts of 1980-81 and pointed out that this indicated that the accounts for the previous years were not

drawn up correctly. A representative of BHEL stated in evidence that the estimates which they made on various accounts were not cent-per-cent correct and admitted that "there is need for streamlining this area." He, however, added that sometimes such adjustments became unavoidable.

7. According to the Annual Report (1980-81), no tax provision was necessary in that year on account of tax benefits availed on the past losses of the subsidiaries. The profit and loss account showed that the profit before and after tax was Rs. 37.52 crores. During examination of the representatives of the BHEL, the Committee asked whether there was no tax liability at all. The Committee were informed that the tax liability for the year 1980-81 after taking into account the losses was Rs. 4.25 crores. In a note furnished subsequently, the BHEL indicated that the taxable income for the year was Rs. 7.13 crores.

8. The Committee enquired whether profit after tax should not have been shown less by the tax liability, a representative of the BHEL stated: "I agree with you, Sir. It does not give the correct position, since the tax liability has not been shown in the current year's accounts." He, however, clarified: "Since the provision already available in the accounts was adequate to cover current year's tax liability, no fresh provision was made and the profit before and after tax was shown as Rs. 37.52 crores."

9. The reduced tax liability for the year 1980-81 was partly on account of losses of erstwhile subsidiaries taken over by BHEL. A loss of Rs. 10.11 crores was adjusted in the profit and loss account of the BHEL for the year ended 31 March 1981. The Committee pointed out that when the actual net profit was reckoned all the losses should have been taken into account. A representative of the Department of Heavy Industry stated: "We could have done it. The tax advice given to us was like this. I will go into it further."

10. There were a number of comments on the accounts of the BHEL for the year 1980-81 by the Comptroller and Auditor General of India under Section 19(4) of the Companies Act, 1956. The effect of the comments was that the profit was overstated in the accounts to the extent of Rs. 20 crores though the comments were not summed up. During the examination of the representatives of the BHEL, the Committee desired to know the reaction of the C&AG to the replies of the company to his comments on the accounts as published in the Annual Report and suggested that the replies of the company taking into account such further developments as may have occurred might be got vetted by the C&AG and furnished to them.

On six such replies received by the Committee subsequently it was seen that the C&AG did not agree with the management views on any of them. These related to the follows:

1. Comment No. I(B)—Excess reckoning of income from engineering services (Rs. 256.71 lakhs).
2. Comment No. I(C)—Accountal of claims by/against the company—overstatement of profit Rs: 755.22 lakhs.
3. Comment No. II(a) (iii)—Valuation of the 5 MW set meant for South India Viscos Ltd. Overstatement of profit : (Rs. 46.06 Lakhs).
4. Comment No. II(d) (2)—Short provision of interest liability—Rs. 239.78 lakhs.
5. Comment No. II(d) (3)—Bank guarantee for Tripoli West Contract Lack of provision of accrued liability Rs. 4.17 crores.
6. Comment No: III(a)(I)—HPLP By-pass system—over-statement of profit—Rs. 1124.86 lakhs during 1979-80 and 1980-81 (Rs. 580.28 lakhs in 1980-81).

11. When the Committee observed that it appeared that according to CAG, BHEL's accounting policies have been defective in some respects a representative of the Department of Heavy Industry said during evidence that "this is the matter which is under discussion with the CAG."

12. Department of Heavy Industry have assured in a post evidence note that the provisions falling under prior period adjustments, export incentives, taxation etc. as also accounting policies would be gone into further while closing the accounts for 1981-82.

13. Expenditure during the years 1980-81 included cash discount of Rs. 9.32 crores as against Rs. 0.19 crore in 1979-80—*vide* schedule 16 of the Accounts for the year 1980-81. Enquired about the details regarding cash discount, the Committe have been informed in evidence by a representative of BHEL that those who opened LC against BHEL supplies were given cash discount of 10 per cent. Justifying this discount another representative said:

"The other alternative was to reduce the price. Everybody was pressing us to reduce the price, because we got profitability. The Electricity Boards were saying we are

not making profits, but the manufacturers are making profits'. We said that we will give a discount if cash payment is made."

14. The question of giving cash discount was reported to have been decided at the Ministerial level. Asked about the commercial justification for giving 10 per cent cash discount, the Secretary Dept. of Heavy Industry admitted that there was no justification and said:

"There was no formal advice as such from the Ministry. I have not been able to find any paper. I agree it is a large amount. Firstly, it should not have been given. Normally, it has to be the other way round; there should be a penalty for late payment."

In this context when the Committee referred to the announcement made by the Union Minister of Industry in the Power Minister's Conference in July 1976 regarding cash discount, the Secretary said, "that is more from the records of the Ministry of Energy. There was no discussion within the Ministry of Industry." Referring to the cash discount he said "the practice is not there now."

B. Losses on Exports

15. There were 6 major turn-key projects abroad costing Rs. 3 crores and above each completed during the last 5 years by the BHEL. There were losses on all these projects except one. The details are as follows:—

(Rs. in lakhs)

S. No.	Project	Profit/Loss
1.	Tuanku Ja' after power Station Stage II, in Malaysia	—136
2.	TJPS—STAGE III, Malaysia	—225
3.	Morogoro Transformers, Tanzania	—13
4.	Prai Power Station, Malaysia	—133
5.	Wadi Jizan Electrification Project, Saudi Arabia	527
6.	Tripoli West Power Station, Libya.	—2304

16. The total value of physical exports (earnings) amounted to Rs. 210 crores approximately during the last 5 years. The Committee have been informed during evidence that the total loss after

taking into account the export incentives on these exports is approximately Rs. 20 crores. Informing that this loss was not anticipated, the CMD BHEL stated. "In all contracts where we were making the first entry, we anticipated that there will be no profit and no loss except the Wadi Jizan contract where we anticipated a profit of Rs. 3.5 crores or so but actually the profit was much higher than that". Regarding the contracts which ended in a loss, the witness said:—

"There were some overruns in executing the whole thing and in some cases we came across conditions which we did not anticipate. Actually our civil construction works in Tripoli did not turn out the way that we had anticipated. Soil conditions and other things did not come as per our anticipations."

17. Stating that all these export projects have been reviewed critically, the Secretary, Department of Heavy Industry felt that the loss on exports might be less than Rs. 20 crores. He stated in this connection:

".....BHEL is making certain claims for certain things. There were certain delays which are not attributable to the BHEL's performance but are due to certain failures on the part of the customers. There is our claims are accepted the loss will definitely come down."

18. Asked about the prospects for increasing the exports and at the same time ensuring that there is no loss on export, the Secretary said that "There are good prospects" and continued:

"For very large projects discussions are going on. We take extra care to see that we do not get into the same kind of situation once again."

C. Capital Structure

19. The paid up capital of the BHEL at the end of March 1981 was Rs. 150 crores. Outstanding Govt. loans were of the order of Rs. 222.91 crores and Public Deposits were Rs. 14.42 crores. As the government policy is to have debt equity ratio of 1:1 the Committee enquired whether the BHEL took up with the government for more of equity in order to restore debt equity ratio to 1:1. The Committee have been informed in a written reply that the matter was taken up with the Government and that they have agreed to

release part of the budgetary support in the form of equity. The release of funds in 1980-81 and 1981-82 is stated to be on the following basis:

(Rs. in crores)

	1980-81	1981-82
Equity	20	23
Loans	23	28

20. The working capital at the close of the three years ending 31 March, 1981 amounted to Rs. 253.51 crores, Rs. 345.91 crores and Rs. 390.31 crores respectively and represented 4.97, 5.86 and 5.82 months value of production at cost. The working capital was financed partly through case credit and loans from banks, partly through loans from Government of India and partly from internal resources. Bank borrowings which ranged from Rs. 29 crores to Rs. 86 crores during 1976-79 suddenly jumped to Rs. 167.59* crores in 1979-80. Asked what was the reason for this extraordinary borrowing from banks during 1979-80, BHEL has informed in a written reply that the increase in borrowings is due primarily to shortfall in collection from customers and consequent increase in receivables from Rs. 170 crores in 1978-79 to Rs. 223 crores in 1979-80 and Rs. 295 crores in 1980-81. The bank borrowing at the end of the year 1980-81 is Rs. 172.8* crores.

21. The Committee noted that the working capital had been looked up in inventories and trade credits. The inventory holding as at the end of March 1981 was of the order of Rs. 670.09 crores. The volume of book debts as at the end of March 1981 was Rs. 305.61 crores representing 38.24 per cent of the sales during the year 1980-81. In reply to Committee's query as to whether the present level of inventory is justified and whether it is possible to reduce it by better material and inventory management, BHEL has admitted in a written reply that the present level of inventory is somewhat on a higher side and has informed that the measures have already been initiated to bring it down.

22. Informing that receivables are mounting because of the failure of the customers to pay BHEL's bills promptly, a representative of BHEL has stated that "As far as customer outstandings and our bills

*At the time of factual verification, BHEL indicated that the bank overdraft for the years 1979-80 and 1980-81 was Rs. 90 crores and Rs. 119 crores respectively.

against various customers are concerned, the position is still not very much bright. It is almost at the same level. Even to-day, I have an outstanding of about Rs. 300 crores." The witness further stated that as far as receivable were concerned the period from 1979 to 1980 had been bad. Asked why interest should not be charged on delayed payment, the witness said that their contract provided for interest payment after 30 days. Another representative of BHEL said further: "Till four years back in our contract the interest clause was not there. For the last four years we are insisting it. That is one of the reasons why customers are not signing contracts, informing that BHEL is making a model contract with the Ministry of Energy the witness has said that the model contract has been submitted to the State Electricity Boards. The question of receivables is reported to have been taken up at the level of the Finance Minister.

23. In a post evidence reply furnished to the Committee, BHEL has made the following suggestions regarding recovery procedures:

- (i) The customer should be persuaded to revise the payment terms providing for progress payments against items under manufacture at the shop floor.
- (ii) In the case of projects included in the 5-year plans the Government may consider direct allocation of funds to BHEL against outstanding bills as accepted by the customers i.e. State Electricity Boards, for supply of equipment.

D. Net Foreign Exchange Outgo

24. The Foreign exchange outgo and the foreign exchange inflow in respect of the BHEL during the years from 1977-78 to 1980-81 as furnished by them are as given below:

Outgo	(Rs. crores)			
	1977-78	1978-79	1979-80	1980-81
Value of Imports (CIF)				
Raw Materials	49	63	75	57
Components	64	94	106	120
Capital Goods	21	11	14	20
Other Expenses	25	38	32	20
TOTAL	159	206	227	217

Inflow

Export of goods	15	72	32	28
Interest	1	1	1	2
Erection Charges	11	32	20	9
Misc. Income	3	0	1	1
TOTAL	30	105	54	40

25. There has been net foreign exchange outgo of the order of Rs. 129 crores in 1977-78, Rs. 101 crores in 1978-79, Rs. 173 crores in 1979-80 and Rs. 177 crores in 1980-81. In view of increase in net foreign exchange outgo, the Committee enquired whether it is not necessary to put through schemes for faster indigenisation of raw materials and components, augment exports of goods and services. Admitting that it is necessary the BHEL in a post evidence reply has stated that there is need for faster indigenisation and augmentation of export of goods and services.

26. Justifying the large imports BHEL has however, submitted that during 1980-81 they imported a total of Rs. 291 crores of which Rs. 114 crores as customs paid. Of the remaining Rs. 177 crores, imports of raw materials and components worth of Rs. 141 crores (about 80 per cent of total imports) was stated to be absolutely unavoidable.

27. Pointing out that about 60 per cent of the cost of production of BHEL is accounted for by consumption of material and about 60 per cent of the purchases of raw materials and components are accounted for by imports. The Committee enquired, in such a situation, whether it could be said that the progress of indigenisation of production in BHEL is satisfactory. Clarifying that 60 per cent value of foreign purchases also includes customs duty and incidentals, the Department of Heavy Industry have informed that if one takes out the element of customs duty and incidentals, foreign exchange component is of the order of about 22 per cent of cost of production.

28. The Department considers that the progress of indigenisation of production in BHEL has been satisfactory over the years. Illustrating this point, the Department have stated that in products like hydro turbines, hydro generators, turbo-generators boilers, steam turbine of USSR design, AC Motors, DC Motors, air pre-heaters, transformers, switch-gears, they have already achieved significant progress so far as possibilities within BHEL are concerned.

29. On the question of net foreign exchange outgo, the Secretary, Department of Heavy Industry submitted before the Committee:—

“The out-flow is not only on such items which were indigenised by BHEL. Quite a major portion is imported steel. The indigenisation process is important. But in some cases even finished products can be justified. If there is constraint the solution available to the country is either to import the total boiler, or import certain components, which could not be manufactured. They can not be indigenised. They have been indigenised for special reasons in certain areas.”

30. Then the Committee pointed out that import of the components by BHEL is on the high side and that the matter should be examined by the Government, the Secretary said:—

“Yes, Sir. The purchase of components is also mainly half the percentage of the total production value. The purchase of components total will always go up if production is to go up.”
He assured that the question of indigenisation can certainly be examined.

31. Some of the steps taken to speed up the rate of indigenisation are:—

- creation of special cells at Unit and Corporate levels.
- stabilising operations of CEFP and SSTP.
- progressive indigenisation of components and bought out items.
- C&I packages under development at CED, Bangalore.

BHEL has stated that simultaneously, greater emphasis is also being placed on augmentation of exports of goods and services. Deliberate steps have already been taken to draw up a clear plan for increasing exports, to established markets, exploring new market possibilities and stepping up export of services to developing countries.

E. Performance Review

32. Although the Ministries are required to take performance review meetings once a quarter, the Committee have been informed by the Department of Heavy Industry that during the 4 year period, 1977—81, there were only 4 performance review meetings as against

the required number of 16 meetings. There appeared to have been no such meeting during the year 1980-81. Asked to explain the absence of systematic and regular reviews of performance of the BHEL, the Secretary, Department of Heavy Industry argued that he would not personally support holding four meetings a year. In support of his argument he said:—

“Unless the base information is there, the review is not really effective. Secondly there are 19 large public sector organisations in this Department. Some of these organisations like BHEL, HMT have a number of units. We think there will be 30 reviews required and if we do four times, it will be 120 reviews a year. The Ministry with the present way we are organised, it would be literally impossible even if we are doing only that work. It would probably not possible.”

33. He, however, felt that with the data bank system which they are trying to organise, the reporting system twice a year should be aimed for. Illustrating his point that there are reviews in the Ministry, he has stated that before the annual plan is submitted to the Planning Commission, for each organisation they conduct a very detailed review. He has also claimed that Planning Commission conducts at least 5 reviews a year.

34. The Department in a written note submitted after evidence have informed in this connection that recently they have finalised and circulated new formats for management reporting with a view to further streamlining the review and monitoring of the performance of Public Sector Undertakings under the administrative control of that Department. The Department have expressed the hope that with the introduction of this, the review performance of undertakings will become more effective.

35. Asked what was the system of monitoring and appraisal of the performance of the BHEL by the Board of Management, the BHEL has informed in a written reply that the Board of Directors of BHEL review and monitor the performance of the Company from time to time *vis-a-vis* the targets set up for different areas of operations in the annual budgets approved by them. The Board of Directors have also adopted a number of policy papers like purchase policy, works policy sales policy etc. and have delegated adequate powers to the heads of various operating units for fulfilling the targets under the board framework of these policy decisions, thereby giving them con-

siderable operational autonomy. Under such a system the performance review and monitoring by the BHEL Board of Management is stated to have become a very meaningful and effective exercise. A comprehensive management information and reporting system have also reportedly been devised in the company.

36. On being asked of specific directions given by the Board to the Management for improving the performance in the last 5 years, the Committee have been informed in a post evidence reply that the specific directions given by the Board are generally in the areas of inventory management i.e. keeping the inventory position close to Tandon Committee's norms, cash management, indigenisation through increased R&D efforts, absorption of technology from the collaborators, linkage between product development and design and export strategy. In addition to that the Board also directed that every effort should be made to achieve a target of 7 or 8 per cent every month to the annual target besides improving the performance of new projects such as CFFP, Seamless Steel Tube Plant and Jhansi Plant. All these directives have reportedly been implemented to a large extent for the improvement of the performance.

37. The Committee observed from the agenda of the Board's meetings furnished to them that the Board of the BHEL did not appear to specifically monitor and review such important areas of performance as export performance, project implementation and performance, progress of supply of equipments for core project etc., although the Ministry obtains a number of returns at periodic intervals from the undertaking. The Committee asked what was the assessment of the Department of Heavy Industry about the role played by the Board of the BHEL in regard to the monitoring and appraisal of the performance of the Company and enquired whether it could be said that all returns that go before the Ministry were also reviewed by the Board at periodic intervals. The Department of Heavy Industry have intimated that depending upon the date of the Board meetings, critical returns like the annual budgets generally come up before the Board before they are sent to the Ministry. At every Board meeting, the latest available performance are tabled and discussed.

38. The Department of Heavy Industry have further stated that they are satisfied that the Board of the BHEL is monitoring the appraisal of the performance of the different units from time to time.

This view, according to the Department, is based upon the agenda papers and copies of the minutes of the Board meetings which are available to the Ministry.

39. From the management ratio reports furnished to the Committee, the Committee noted that no data on the labour and machinery utilisation were available. The Committee desired to know how it is ensured that the factors of production are put to optimum use in the absence of the system of ascertaining the extent of and reasons for the under-utilisation of manpower and machine capacity. It has been stated by BHEL in a written reply that in an Engineering Organisation like BHEL labour and machine hour utilisation alone do not reflect performance and has submitted that the following important ratios covering the areas of production, finance, material etc. are used as key indicators of productivity:

- (i) Growth in turnover
- (ii) Growth in outturn
- (iii) Outturn per employee
- (iv) Value added per employee
- (v) Profit per employee
- (vi) Direct material cost to total cost of production
- (vii) Total inventories to outturn.

BHEL has stated further that at the shop level, in each plant the optimum utilisation of various factors of production is ensured by timely delivery of products, shop output, material consumption, quality of products and actual hours of production against standard/norms hours for both machine and manpower. Each unit also regularly monitor actual utilisation of critical and unique machines as well as direct labour.

40. The Committee wanted to know whether the BHEL had made any inter-divisional comparison especially in regard to productivity and financial management. Replying 'Yes', the BHEL has informed that they do make regular comparisons between the various divisions. These comparisons are made in respect of outturn per employee, value added per employee, ratios of profit before tax to outturn, ratio of profit before tax to capital employee etc. making due allowances for such factors as nature of products, market and environmental conditions.

41. Asked whether BHEL has made any inter-firm comparison in order to improve the performance of the BHEL, CMD stated during evidence:

“Inter-firm comparisons we have made only in parts not at a regular study because whatever we get through should be examined and compared with those from the other competitors.”

Referring to the huge loss on the seamless steel tubes factory of BHEL at Trichy, the Committee desired to know the performance of its competitor in the field namely Indian Tube Co., Jamshedpur. The Committee were informed that the Seamless Mill of Indian Tube Company having been established in 1959, made a profit of Rs. 2.16 crores in 1978-79. Its production was 26,000 tonnes against its capacity of 52,000 tonnes. In 1979-80, its production was 24,000 tonnes and profit Rs. 3.13 crores.

F. Restructuring of BHEL

42. When the Committee enquired of the representatives of BHEL as to whether they didn't think that the BHEL has become somewhat too unwieldy to have an effective management control, the BHEL has conceded in a written reply that it is a fact that BHEL has grown over the years and its operations have also become more complex and diverse in nature. The BHEL has, however, argued that more growth in size or complexity does not necessarily make an organisation unwieldy or unmanageable. It has been submitted that with proper organisation structure to take care of changing requirements, clarity of roles and responsibilities, proper delegation of authority commensurate with responsibility, adequate systems for planning, monitoring and control etc., size and complexity do not really pose a constraint for effective management. On the other hand, integration of similar operations is stated to lead to more effective utilisation of available resources.

43. Stating, in this context, that Government has not taken a view on this question at the moment, the Secretary, Department of Heavy Industry has viewed that the size of an organisation is not a constraint for better management. Informing that there are organisations in the world which are very large, he opined that in certain things, they have to be large. He referred to Siemens in this context. From the competition angle, the Secretary, however, felt that “there is an argument that for every type of item we should have more organisations—whether it is a small item in terms of small organisation or large item in terms of large organisation.”

44. The Secretary, submitted that for the sake of competition, there could be at least two organisations. He, however, said:

“At the moment, I do not think, it is very right, if we straightaway at one stroke, break it.”

He submitted further in this context:—

“We are awaiting for a detailed study which the Ministry of Energy is engaged on developing a 15 year power plan. Once that comes out, it will indicate what type of future projections are there and what type of additional facilities are needed and whether those should be set up by expanding the present capacity or should be done by creating new companies. On these questions, the Government can then decide.”

PART II

CONCLUSIONS/RECOMMENDATIONS OF THE COMMITTEE

1. The Bharat Heavy Electricals Ltd. occupies a crucial position in the energy sector of our economy. The company has been making profit. But the profit is not the only index of its efficiency. However, the profit has declined steadily during the period 1976—81. Almost all the major projects commissioned during the period 1974—81 have fared badly. The capacity utilisation is poor in respect of a number of products. The company is reportedly facing demand constraints as well as production constraints. The exports sales have on the whole resulted in losses. There have been heavy slippages in delivery of equipments for power plants. The performance of a number of power plants installed with BHEL equipments is not satisfactory. There is considerable net foreign exchange outgo as a result of operation of the company. There is scope for better indigenisation of production and augmenting exports to minimise the foreign exchange outgo. The Committee's conclusions and recommendations arising out of the examination of these issues are set out in the following paragraphs.

2. The Company draws up its annual budget fixing targets for production, value added and generation of internal resources. Even though the plan document does not indicate these targets, the Committee feel that the plan targets for (a) production in physical terms of equipment to match the projected additional capacity for power generation; (b) value added correlated to the sectoral rate of growth indicated in the plan and (c) internal resources derived from the resources forecast of the plan should be fixed by the Administrative Ministry in consultation with the Planning Commission. In future, the plan target for capital investment and targets as derived from the plans for production, value added and generation of internal resources as well as the achievements should be brought out in the Annual Reports and Performance Budgets of the Administrative Ministry and the BHEL.

3. During the years 1979—81 there was a shortfall of Rs. 20 crores in capital investment and in generation of internal resources. The shortfall in capital investment was attributed to a variety of factors including delay in ordering of machine tools and equipment and procedural delays. The shortfall in generation of internal resources

has been attributed to reduction of profits which was caused, among other things, by import of steel at high cost and accumulation of outstanding dues from customers. In the opinion of the Committee the shortfall could have been avoided to some extent with better care. Incidentally the price formula of the BICP is stated to be unrelated to imported steel price. The Committee feel that the BICP ought to take into account the higher cost of import of inputs wherever import becomes necessary.

4. The Ministry of Energy is reported to have fixed targets for the commissioning of additional installed capacity for power generation from year to year assigning the share of the BHEL therein. The national target and the BHEL's share have been progressively scaled down during the period 1978—81 and even then the achievement of the BHEL was poor inasmuch as it was only about 2/3rd of the share assigned to it. The Committee have, however, been informed by BHEL that the commissioning figures would not reflect its achievement and that there was hardly any case where the commissioning was held up solely on account of non-supply of equipment by the BHEL as per schedule. According to the BHEL there were only 4 cases where the delayed supply could be one of the factors contributing to delay in commissioning. The Ministry of Energy did not, however, agree with the contention of the BHEL. According to that Ministry, while there were delays on the part of the power plant authorities there were also delays on the part of the equipment suppliers, including BHEL which delayed the commissioning of several projects. The thermal projects which could not be commissioned during the last 5 years due to delayed supply of BHEL equipments were stated to be 2 scheduled to be commissioned in 1976-77, 3 in 1977-78, 8 in 1978-79, 7 in 1979-80 and 2 in 1980-81.

5. The Committee received an impression that in the past there was no effective coordination among all concerned to see that the national plans in regard to creation of additional capacity for power generation were translated into reality. They have been informed that recently at the instance of the Planning Commission harmonograms have been drawn up with the participation of CEA, customers and the BHEL and a system of monitoring production based on these introduced for bringing about effective coordination in implementation of power projects. The Committee hope that BHEL would take care to see that it fulfils its commitments in future taking note of its past failures.

6. The BHEL has contended that the present system of reviewing its performance on the basis of figures of commissioning of power projects was not just. In support of this contention figures of megawatt-wise production of power equipments during 1978—81 were

given to the Committee and these figures looked impressive. The Committee desire that a satisfactory method of assessing the performance of the BHEL in regard to production of power equipments should be evolved in consultation with the CEA and the Planning Commission.

7. There were 5 projects costing Rs. 5 crores or more each commissioned during the period 1974—81. There was considerable cost overrun in the case of 3 projects. There was, however, no time overrun. Despite significant cost overrun the projects were expected to be viable. However, there were heavy losses on 3 of these projects during 1978—81, namely, (i) Transformer factory, Jhansi (loss of Rs. 11.43 crores against anticipated profit of Rs. 4 crores); (ii) CFFP, Hardwar (loss of Rs. 9.28 crores against anticipated profit of Rs. 20.06 crores); and (iii) SSTP, Trichy (loss of Rs. 23.51 crores against anticipated loss of Rs. 2.17 crores). The profits on Boiler Plant, Phase-II project, Trichy were not as good as anticipated. The Committee expect the BHEL to improve its projects formulation, implementation and operation.

8. The poor performance of the transformer factory, Jhansi is primarily on account of under-utilisation of capacity, which is caused by stiff competition, higher cost of production and lower price obtained than anticipated. The demand pattern is also not in accordance with what was anticipated. Further, the technology obtained from AEI, U.K. in 1956 has become outdated and the competitors have gone in for better technology. The Committee suggest that updating of technology should be attended to with a sense of urgency and attempts should be made to break-even on this project soon.

9. In the CFFP, Hardwar also production is much below DPR anticipations and it is also less than what was budgeted for annually. Here again the change in demand pattern is stated to be one of the reasons. The tapering of the demand for generation sets like 110 MW and 120 MW is stated to be faster than expected. There is also reportedly difficulty in technology absorption in the field of intricate alloy steel casting and forging for thermal and hydro sets. On account of the poor performance of this project, BHEL had to purchase locally and import castings and forgings to the extent of Rs. 43 crores in one year alone (1980-81). The Committee desire that the problems should be overcome early and the project made viable by also exploring the possibilities of marketing the products outside BHEL.

10. The production in SSTP, Trichy also is much below target. Further, the capacity for production of 40,000 tonnes is yet to be

fully established. The cost of inputs seems to have been underestimated in the DPR projections and there appeared to have been no reliable market survey before the project was taken up. The technological absorption is also reported to be taking longer time than anticipated. However, the Committee have been assured that the losses were expected to come down and that the BHEL have started intensifying demand study since April 1981. The Committee trust that the project will turn the corner early. Surprisingly performance testing of the plant had not been done within the period of guarantee due to non-availability of power. It should be ensured that there is no defect in the plant. On two occasions during the year 1980 power interruption had caused damages to the rotary hearth of the plant. The Committee suggest that the desirability of installing a generator should be examined and suitable action taken early to avoid recurrence of this phenomenon.

11. Incidentally, the Committee noticed that in 5 cases the project approval by government took more than one year. These are (1) Hydro sets expansion, Bhopal; (2) SSTEP, Trichy; (3) Boiler auxiliary plant, Ranipet; (4) R&D Project, Hyderabad and (5) Bowl Mills, Hyderabad. The Committee are of the view that normally it should not take more than six months to clear a project proposal even allowing for time for the various scrutinising agencies. They hope that delays in project approval would be avoided in future.

12. The value of production of BHEL as a whole ranged from Rs. 474 crores to Rs. 816 crores during 1976—81. The targets for production are set by the company on the basis of the expected demand and not on the basis of available production capacity. There is considerable under-utilisation of the capacity. This is in the area of thermal sets of lower rating, hydro sets, nuclear steam generation equipment, industrial electrical machines, compressors, capacitors, energy meters etc. Lack of demand, technological problems and difficulty in matching the pattern of demand with the production capability are stated to be the main reasons for the underutilisation. The Committee have, however, been informed that in regard to thermal sets with the adoption of modular concept, BHEL would be favourably placed in the years to come. The Committee desire that the possibility of exporting the products facing domestic demand constraints should be explored and optimal utilisation of the capacity ensured.

13. The BHEL's products cover broadly 22 groups and 5 of these reportedly face production constraints and 7 face demand constraints. Production constraints are stated to be largely in the nature of power cuts, non availability of wagons, special steel, imported

components and insulating materials and delay in receipt of sub-contract items. Some of these factors are controllable. In this connection the Committee note that the wagon position as well as the indigenous availability of steel have shown improvement lately. The Committee recommend that capacity for indigenous production of insulating materials should be established as early as possible.

14. As regards demand constraints the products such as oil rigs, compressors, switch-gears, billets & blooms, seamless tubes, meters and capacitors have been mentioned to the Committee. According to the BHEL, imports of compressors have been allowed for fertiliser projects on the advice of consultants although BHEL compressors would have served the purpose. The Secretary, Heavy Industry, was of the view that precaution to ensure better utilisation of indigenous capability has not been taken from the very beginning. The Committee desire that the matter should be taken up with the concerned departments like Department of Fertilizer to avoid at least in future import of equipments which could be supplied by BHEL. In this connection the Committee would urge that as far as possible multiplicity of designs should not be inducted into the country and that there should be a measure of standardisation.

15. Demand constraints in regard to switch-gear are on account of outdated technology of BHEL and the competition it faces. However, the Committee note that the BHEL is going in for collaboration with M/s. Siemens of West Germany for SF-6 circuit breakers, which is an area where technological upgradation has been keenly felt. The Committee hope that the BHEL product would become competitive soon.

16. Although it was expected that 60 per cent production of the large-size forged blooms would be sold outside, it did not materialise. Further, price-wise the product does not seem to be competitive. The internal use of the blooms produced is also less on account of the change in the product profile of BHEL. The Committee, however, note the attempts being made to explore sale to steel plants, defence department etc. Optimal capacity utilisation should be achieved early.

17. The capacitors are used for power factor correction in electrical transmission and distribution networks and systems and for better voltage regulation thereby reducing power loss to the minimum. However, the demand does not match the capacity for production available in the country. In this connection, the Committee desire that the State Government should be persuaded to enforce the Indian Electricity Act and Rules making it obligatory for the users

to improve the power factor by installing capacitors. This would be in the national interest of avoiding power losses and incidentally this would also make for better utilisation of the capacity for production of capacitors.

18. According to the BHEL, the licensing policy of the government has also to some extent caused demand constraints for its products. The company has given various suggestions in order to avoid unhealthy competition and make for coordinated efforts to meet the needs of the country. The Committee hope that these suggestions would be taken note of and such corrections to the licensing policy made as would make for optimum utilisation of resources.

19. Till 1977-78 thermal sets, hydro sets and traction equipments were in the monopolistic range of BHEL products. However, after liberalisation of import policy in April, 1978, the power generation equipments are stated to have been included in the list of items allowed for global tendering. As a result, BHEL has lost some business. Further, in non-IDA global tenders, the BHEL is reported to have suffered on account of customs levies on imported raw materials and components which made its products uncompetitive compared to its foreign competitors. However, according to the customs tariff, imports of components and raw materials for specific projects are eligible for lower flat rate of duty of 50 per cent ad valorem subject to the condition that the imports are recommended by the DGTD and attested by the licensing authorities. The difficulties in ensuring this are stated to have been taken up with the Ministry of Finance. The Committee recommend that the question of amending Project Import Regulations should be considered early.

20. The total purchases of raw materials and components, stores & spares of the BHEL ranged from Rs. 380 crores to Rs. 490 crores during 1978-81. The Committee feel that to the extent possible the purchases should be centralised in order to derive the bulking advantage.

21. About 60 per cent of the total purchases of raw material and components came from abroad. In such a situation it cannot be claimed that satisfactory progress has been made in indigenising production. However, the Department of Heavy Industry have informed the Committee that in terms of cost of production the import content is only 22 per cent. Nevertheless the Committee find that the annual net foreign exchange outgo as a result of the operation of the BHEL ranged from Rs. 129 crores to Rs. 177 crores, during 1977-81. In view of the increasing foreign exchange gap it is necessary to put through schemes for faster indigenisation of raw materials and components and augment exports of goods and services.

Since there was no specific programme of indigenisation mentioned in the earlier DPRs, systematic plans should be drawn up in respect of all the old projects and implemented under a time-bound programme. It should also be ensured that the anticipations of the later DPRs in respect of CFFP, SSTP etc. are realised according to the programme indicated.

22. The efficiency of an enterprise like BHEL cannot be assessed properly without regard to the degree of user satisfaction that it has given. The Committee, therefore, went into the performance of the BHEL in regard to timely delivery of equipment and the quality of the equipments installed in the various power plants. Though there are signs of improvement, the performance cannot be regarded as satisfactory yet.

23. From the details of user-wise sale of plant and equipment by Bhopal and Hyderabad units of BHEL costing Rs. 3 crores and above in each case, the Committee have noted that in a number of cases there were long delays in delivery and serious complaints regarding quality. The delays were more than one year in 10 cases. Not all the reasons attributed by the BHEL for the delay were unavoidable. The Committee desire that such delays should be avoided in future. Any capacity constraint in fulfilling this objective should be removed soon. Further, standardisation of the equipment specification and layouts for improving delivery of equipment at sites should be completed without further loss of time. The Committee have already mentioned about the delay in commissioning of projects for which the BHEL was also responsible in as many as 22 cases during the last 5 years.

24. The BHEL has come in for criticism mostly in regard to the functioning of its boilers and generating sets. The Committee have been informed by the Ministry of Energy that against the all-India average plant load factor for the thermal power system ranging from 44.7 per cent to 48.4 per cent during the years 1978-81 the plant load factor of BHEL make units was less than 25 per cent in 1980-81 in the case of 4 units of 200/210 MW group and 8 units of 110/120 MW group. Though according to the CMD, BHEL this did not indicate poor performance of the BHEL equipments and the plant load factor of a unit depended on a variety of factors besides the BHEL equipment, the fact remains that admittedly the old Czech design of 110 MW sets gave trouble and there were also deficiencies in 200/210 MW sets, 13 of which were manufactured without field trial. A project renovation programme was taken up in September 1977 and this covered 31 thermal units at 14 stations and 8 hydro units at 3 stations. A sum of Rs. 16.46 crores have been spent on this programme

during 1977-81. A number of units already renovated have not shown improvement. The problems relating to 110 MW sets have not been fully overcome yet. The Committee recommend that BHEL should keep continuous watch on the performance of its units by sending expert teams regularly in order to make such improvements as may be necessary thereby preserving its image better.

25. The Committee agree to some extent that the performance of power plants depended on systems design, quality of coal, quality of maintenance and other management factors. This calls for an initiative from the Central Electricity Authority for a review in order to identify the factors that are responsible for poor performance of the various power plants in the country. In this connection the Committee note that the CEA has constituted inter-disciplinary teams to go into these aspects in detail and initiate necessary remedial action. This should be completed early. Further there should be a standing high level committee consisting of Chairmen of CEA, BHEL, Railways, IL, Kota, Coal India etc. to periodically meet and identify problems in regard to coal for timely corrective steps. Further in the opinion of the Committee it should be the responsibility of the BHEL to prove the performance of power plants and for this purpose the clients should be encouraged to entrust power plant construction on a turn-key basis to the BHEL.

26. The after-sale-service seems to have been a neglected area of the BHEL's operations until recently. The Committee would urge that the repair shops should be set up in all regions without delay. The provisioning for spares should receive better attention. The overdue orders for spares should be liquidated without delay. In future demands for spares should be ascertained systematically and manufacture planned for timely delivery.

27. The overall profit of the BHEL (excluding prior period adjustment and tax provision) came down gradually from Rs. 62.9 crores in 1976-77 to Rs. 37.5 crores in 1980-81. Four out of 9 divisions of the company were incurring huge losses throughout the period 1976-81. The losses on these divisions (Jhansi, CFFP, SSTP and OPD) aggregated Rs. 70.6 crores. The Bhopal Division has shown considerable deterioration in regard to profitability and the profits came down from Rs. 18.7 crores in 1976-77 to Rs. 1.29 crores in 1979-80 (increased to Rs. 7.1 crores in 1980-81). Taking note of the observations contained in this Report, BHEL should evolve suitable strategy to arrest the deteriorating trend in profitability and stabilise the profits at a reasonable level to create sufficient internal resources for future needs. For this purpose it is necessary that the new units are

made viable, capacity utilisation improved and better marketing of the products ensured. The Committee would await the steps taken in this regard.

28. There were 6 major turn-key projects taken up by BHEL abroad costing Rs. 3 crores and above each completed during the last 5 years. There was aggregate loss of Rs. 22.84 crores in these projects, all except one of which having incurred losses. The Committee would await the outcome of the efforts of BHEL to pursue its claims with their clients. In future care should be taken to see that at least no losses are incurred on exports.

29. The net profit of Rs. 37.52 crores for the year 1980-81 shown in the accounts did not depict the correct picture. This did not include an extraordinarily high prior period expenditure adjustment of Rs. 10.88 crores. It did not also include losses of the order of Rs. 10.11 crores on the erstwhile subsidiaries of the BHEL. Further, though according to the Annual Report (1980-81) no tax provision was necessary in that year on account of tax benefit availed on the past losses of the subsidiaries, the Committee were informed that the tax liability was there to the extent of Rs. 4.25 crores on a taxable profit of Rs. 7.13 crores and that no provision was made as the provision already available was adequate to cover this tax liability. There were a number of comments on the accounts for the year 1980-81 by the Comptroller and Auditor General of India under Section 619(4) of the Companies Act, 1956. The effect of the comments was that the profit was overstated to the extent of Rs. 20 crores. It appeared from the comments that the C&AG was not satisfied with the accounting policies of the company in some respect. In view of all these, the Committee desire that the accounting policies, prior period adjustments, provision for taxation etc. should be gone into in consultation with the C&AG so that a uniform pattern of bringing out the annual accounts could be adopted in a manner that a correct comparative picture of the operation of the company would emerge from year to year.

30. The working capital of BHEL which was Rs. 253.51 crores at the end of March 1979 had increased to Rs. 390.31 crores at the end of March 1981. The working capital was locked up in inventories and book debts. The inventory holdings as at the end of March 1981 was of the order of Rs. 670.09 crores and the volume of book debts was Rs. 305.61 crores. The inventory holding is admittedly higher than what it should be. The years 1978-81 were stated to be bad years in respect of receivables. The Committee would urge that steps should be taken to avoid accumulation of inventory and book debts in future.

31. The Committee are of the view that the performance of the BHEL would have been better had it been kept under close review by the Board as well as the administrative Department. In this connection the Committee note that there were only 4 meetings taken by the Department of Heavy Industry to review the performance during the 4-year period 1977—81. However, they have been assured that there will be effective monitoring and appraisal in future on the basis of the new format for management reporting evolved recently. The Committee suggest that the reviews by the Board and the administrative Department should cover reliable inter-firm comparison with a view to identifying the areas where improvement is possible. Incidentally, the Committee suggest that the question of restructuring of the BHEL in order to make it efficient and competitive should also be kept under constant review.

NEW DELHI;
April 26, 1982

Vaisakha 6, 1904 (Saka)

BANSI LAL,
Chairman

Committee on Public Undertakings.