6

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

RENOVATION AND MODERNISATION OF POWER PLANTS

MINSITRY OF POWER

[Action Taken by the Government on the Recommendations contained in the Eleventh Report of the Standing Committee on Energy (Twelfth Lok Sabha)

SIXTH REPORT

Presented to Lok Sabha on 16.5.2000
Laid in Rajya Sabha on 16.5.2000

LOK SABHA SECRETARIAT
NEW DELHI
May, 2000 / Vaisakha, 1922 (Saka)

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(1999-2000)

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* Ceased to be a member of the Committee w.e.f. 5.5.2000.
* * Nominated to the Committee w.e.f 27.4.2000.
*** Nominated to the Committee w.e.f. 1.5.2000.
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* Ceased to be a member of the Committee w.e. f. 5 May, 2000.

INTRODUCTION

I, the Chairman, Standing Committee on Energy having been authorised by the Committee to present the Report on their behalf, present this Sixth Report (Thirteenth Lok Sabha) on the Action Taken by the Government on the recommendations contained in the Eleventh Report of the Standing Committee on Energy (Twelfth Lok Sabha) on "Renovation and Modernisation of Power Plants".

2. The Eleventh Report (Twelfth Lok Sabha) of the Standing Committee on Energy was presented to Lok Sabha on 10th March, 1999. Replies of the Government to all the recommendations contained in the Report were received on 30th March, 2000. The Sub-Committee on Action Taken Reports considered the Action Taken Replies received from the Government and considered and adopted the Report at its sitting held on 2nd May, 2000.

3. The Standing Committee on Energy (1999-2000) considered and adopted this Report at their sitting held on 11th May, 2000. The Committee place on record their appreciation of the work done by the Sub-Committee on Action Taken Reports.

4. An analysis of the Action Taken by the Government on the recommendations contained in the Eleventh Report (Twelfth Lok Sabha) of the Committee is given at Annexure-III.

5. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in the body of the Report.

New Delhi;
11 May, 2000
21 Vaisakha, 1922 (Saka)

SONTOSH MOHAN DEV,
Chairman,
Standing Committee on Energy.

CHAPTER I

REPORT

This Report of the Committee deals with Action taken by the Government on the recommendations contained in the Eleventh Report (Eleventh Lok Sabha) of the Standing Committee on Energy on the subject "Renovation and Modernization of Power Plants" which was presented to Lok Sabha on 10th March, 1999.

2. Action Taken Notes have been received from the Government in respect of all recommendations contained in the Report. These have been categorised as follows:

(i) Recommendations/Observations which have been accepted by the Government:

Sl. No. 1,5,6,7,8,10,11,12,13, and 14

(ii) Recommendation/Observation which the Committee do not desire to pursue in view of the Government's reply:

NIL

(iii) Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee :

SI. Nos. 2, 3 and 4

(iv) Recommendation/Observation in respect of which final reply of the Government is still awaited:

Sl.No. 9

3. The Committee desire that final replies in respect of the recommendations, which have been categorized as interim replies by the Committee, should be furnished to the Committee at the earliest.

4. The Committee will now deal with the Action Taken by the Government on some of their recommendations.

A. Failure of R&M Programme

Recommendation (81. No. 2)

5. The Committee had observed that Phase-I R&M Programme was launched by Government of India in 1984 and was scheduled for completion during Seventh Five Year Plan. However, due to inadequate flow of funds from State Governments, non-availability of units for shutdown due to drought conditions, liquidation of original equipment supplier firm ABL and additional activities included in R&M works subsequently for pollution control, the programme took 12 years for completion. The Committee had also observed that in spite of taking 12 long years instead of 6 years as originally scheduled, the plant-load factor in case of 13 stations went down after the renovation and modernization. The Committee had desired that the reasons for such down rating and allocation of Rs. 1165 crore which was higher in comparison to the actual expenditure of Rs. 1066 crore over a period of 12 years must be looked into. The Committee had also desired that funds for environmental aspect under R&M Programme should be earmarked separately. Considering that factors other than R&M, such as use of better quality of coal and increased use of machines too can improve generation targets, the Committee had desired that before undertaking a plant for R&M, all non-technical reasons responsible for its poor performance should be identified and attended to so as to reduce its down time and at the same time reduce the cost of R&M.

6. The Ministry of Power in their reply have stated that Power Finance Corporation has recently been approached for devising mechanism to ensure availability of O&M funds to the Power Stations to see that the R&M Programme is put to its intended purpose.

7. In regard to the recommendation for separate allocation for environmental aspect, the Ministry stated that they have noted it for future R&M Programmes. However, in the absence of any dedicated head for E&F, allocation would have to be made under the R&M schemes only.

8. As to Committee's observation on incompatibility between generation target and financial allocation for the Phase 1 or R&M Programme, the-Ministry have mentioned that generation targets were fixed in consultation with concerned SEB/Power Station Authority.

9. The Committee are unhappy to observe that the Government have failed to appreciate the concern of the Committee, in delinking funds meant for Environment & Forests from R&M Programme. The separation of funds is inevitable for bringing transparency both in R&M and Environment & Forests programmes. Surprisingly, although the Government have accepted the recommendation of the Committee in principle, they have deferred the

decision on the grounds of "absence of any dedicated head for Environment and Forests". Reiterating their earlier recommendations, the Committee desire that Government should not only allocate separate funds for R&M and E&F, but also earmark separate heads/sub-heads for them.

10. The Committee had pointed out that a sum of Rs. 1165 crore was sanctioned for phase 1 R&M Programme which was due for completion in the 6 year period. However, Phase 1 took 12 years for completion and only Rs. 1066 crore could he spent. The Committee note that Ministry of Power have not furnished the details of mismatch between higher allocation and lower utilisation of funds. They have also not stated the reasons for Plant Load Factor going down in thirteen plants after R&M works were executed. The Committee reiterate their earlier recommendation and desire that Government should go into details of these aspects, so that proper safeguards could be introduced for the future.

R&M Phase-II Programme

Recommendation (S1. No. 3)

11. The Committee have noted that phase-11 of R&M taken up in the year 1992-93 was to be completed during 8th Five 'Year Plan (1995- 96). But only 53% work had been completed upto June, 1998. A total amount of Rs. 998 crore (41.5%) of total cost had been incurred in same period. Out of 44 stations, work had been completed only in six schemes. Work in other schemes was at different stages of completion. The Committee found that 'Finance' remained the most important cause of poor performance of the scheme, as SEBs were unable to provide their share of expenditure in the scheme. The Committee, therefore, desired that the Government should take immediate concrete steps to meet this problem so that the balance work of the phase-11 could be completed in the minimum possible time. The Committee had stressed that every possible efforts should be made to encourage the States to set up State Electricity Regulatory Commissions, if necessary, in order to improve the financial health of the State Electricity Boards. The Boards or the State Governments should be provided funds for the completion of these R&M projects in time.

12. The Government in their Action Taken Reply have mentioned that PFC has not been found wanting in releasing fund to the SEB. In fact, it has released certain terms and conditions to make more and more SEBs to become eligible to get loan from it and as a part of its reform initiatives, PFC has reoriented its policies to provide technical and financial assistance to this State Governments and the State power utilities to reform and restructure the State power sector. One of the prerequisites for seeking such financial assistance is the commitment of the concerned State Government to reform the power sector and the establishment of the State Electricity Regulatory Commission (SERC). PFC provides technical and financial assistance in the shape of grant/interest free/concessional loans to the

State Governments/ State power utilities to establish and operationalise the SERC. Additional 1% interest subsidy has been provided under the Accelerated Generation and Supply Programme (AG&SP) scheme to the State Governments which established SERC by March, 1999. PFC also organised a seminar in October, 1998 to highlight the need for early establishment of the SERC. PFC is emphasising the need for power sector reforms and establishment of SERC during the discussions with the State Governments at the highest level. Ministry also stated that SERCs have been operationalised in 13 States viz. Orissa, Haryana, U.P., M.P., Andhra Pradesh, Arunachal Pradesh, Gujarat, West Bengal, Maharashtra, Delhi, Karnataka, Rajasthan, Tamil Nadu, Punjab and Goa have issued the notifications for the establishment of SERC thereafter. Other States are in the process of initiating steps in this direction.

13. The Committee are unhappy to note that implementation of Renovation and Modernization Programme is contingent upon power sector reforms undertaken by States/UTs. The Committee are of the view that power sector reforms are unavoidable for improving the financial health of SEB and so is R&M for improving generation, at the least cost. The Committee feel that power sector reforms is a long drawn and continuous process and it should, therefore, not be an excuse to withhold financial assistance for R&M projects. The Committee, therefore, while reiterating their earlier recommendation, desire that PFC, and other Fls should provide adequate funds for completion of R&M projects, without any further delay. At the same time, the Committee desire that P.F.C. should re-evaluate their conditionalities for R&M loans so as to make them more user friendly.

R&M and Uprating of Hydro Power Station

Recommendation (SI. No. 4)

14. The Committee had observed that 55 Hydro Power Stations were selected for R&M and uprating in the year 1987. However, they were distressed to note that out of 55 schemes, only 21 schemes were completed in 11 years period and rest of the projects are yet to be completed. No actions were taken in case of 8 such schemes. As the R&M and uprating of Hydro stations take lesser time and cost, the Committee were unhappy about the delay in project implementation. Realising the fact that no time-frame was earmarked for completion of these projects, the Committee had asked the Ministry to specify the time within which the pending projects would be completed and the reasons for delayed execution be communicated.

15. The Ministry in their reply have mentioned the stages through which these 55 hydel projects were taken up for R&M and uprating. As per the reply of the Ministry a National Committee was set up in 1987 to formulate R&M Programme for Hydro Electric Projects in operation in the country with the following terms of reference:

(i) Identify the hydro power stations/plants in the country requiring renovation/modernization.

(ii) Assess the costs and time frame involved for implementation of the programme.

(iii) Determine the benefits that implementation of the programme. would accrue from

(iv) Recommend the pattern of funding of the Programme.

16. The Committee submitted its report in July 1981. Another joint team comprising engineers from the concerned power stations/ Electricity Boards, CEA and BHEL (where applicable) was formed which initiated the already identified hydro power stations for identification of various problems/constraints adversely affecting the performance of the units and to arrive at mutually agreeable and feasible technical solutions and corresponding scope of work. Based on the recommendation of joint Team, the project authorities prepared the detailed project reports, which were submitted to PFC and CEA. The schemes costing more than Rs. 5 crore (later revised to Rs. 25 crore) were examined in CEA for TEC Schemes costing less than Rs. 5 crore (later Rs. 25 crore) where PFC funding was proposed to be availed were accorded Desk Renew Clearance. After TEC by CEA, these schemes were either funded by PFC or tied up for foreign assistance.

17. On the detailed execution of the project, the Ministry have mentioned that till 1990 DPRs for 20 schemes were received. Thus, actual implementation of some of the R&M Scheme started from 1990 onwards and other schemes progressively till 1995. Another cause of delay as mentioned by the Ministry is that these 55 schemes were not funded through Centrally-sponsored scheme and were to be undertaken by States / utilities from their own resources. These schemes were delayed due to fund constraint and maintenance of grid conditions/ constraints.

18. Ministry of Power in their reply mentioned that out of 55 schemes RM&U works in respect of 25 schemes have already been completed. Furnishing, the latest status of 24 ongoing schemes, the Ministry informed that out of these 24 schemes, 10 schemes are PFC funded. Out of 10 PFC funded schemes, 7 schemes are in advanced stage of implementation and are scheduled to be completed during 2000-2001, 2 schemes in 2001-2002 and balance 1 scheme in 2002-2003. Out of the remaining 14 schemes, 3 schemes of UPSEB have been closed as the project authorities intend to undertake these R&M schemes under phase-11 and 8 schemes have uncertain schedule of completion as most of them are awaiting financial tie up. Three remaining schemes are being taken up by DVCINHPC through own resources. In addition there are 4 more schemes that are yet to be

taken for execution. One scheme i.e. Machkund, A.P. has been held up due to pending settlement of sharing issues between Government of A.P. & Government of Orissa and other two schemes would be taken up after completion/implementation of ongoing schemes. Hence, schedule in respect of these schemes is also uncertain. One scheme of APGENCO & one other scheme of UP Rajya Jal Bidyut Nigam have also been declared closed as they intend to undertake these schemes under phase-11 during Tenth/Eleventh plan.

19. The Ministry have also mentioned that since these projects are not Centrally-sponsored, the role of CEA is limited only to monitoring of RM&U works. Implementation of these schemes depend upon the priority given to them by the implementing authority viz. SEBs/utilities Ministry of Power/CEA are advising them from time to time to expedite the RM&U works in the interest of overall power sector development/operation.

20. The Committee note that out of 55 schemes, RM&U works in respect of 25 have been completed. Keeping in view the slow progress of RM&U works in the selected 55 schemes, the Committee had desired to chalk out a time frame within which all these schemes could be implemented. As of now, the fate of 7 schemes is uncertain, 4 schemes are yet to be taken up and progress in the rest of them tardy. The Ministry on their part have tried firstly to justify. the slow implementation of the projects on the ground that the "actual implementation of some of the RM&U schemes started from 1990 onwards and other schemes progressively till 1995". Secondly, the Ministry have opined that since these are not Centrally sponsored schemes their role is limited to monitoring of works and also advising SEBs / Power utilities to expedite RM&U works. The Committee do not understand the rationality of selecting schemes first by appointing various Committees and thereafter passing the onus on to the States for expeditious implementation of projects. It appears that the concerned State Government/State Electricity Boards have not taken action for execution of these projects expeditiously. The Committee desire that after consultations with State Government/State Electricity Boards and project authorities, a suitable time-frame for implementation of these projects should be laid down. The Central Government should also monitor the works and take necessary steps to encourage the States for implementation of these schemes expeditiously.

RLA Studies

Recommendation (S1. No. 5)

21. The Committee had observed that deficiencies in operation and maintenance practices and irregular, inadequate and improperly planned maintenance programmes had caused prolonged outages of power plants. The cash strapped SEBs had even postponed major replacement works. Besides, lack of adequately trained operation and maintenance staff, non-introduction of

modem management techniques and methods, were the other causes of poor performance of thermal power stations. The Committee were of the view that in order to keep the plants in healthy conditions and to achieve better reliability, availability and plant load factor etc. there was a need to evolve systematic approach to carry out timely inspection and take preventive measures in a phased manner. It is in this context, the engineering studies of Residual Life Assessment (RLA) and Life Extension assume paramount importance. The Committee had been informed that at present there are 77 stations generating power upto 60 MW having age profile of more than 25 years, operating at PLF in the range of 38-45. Another 337 stations generating power in the range of 60-110 MW were more than 20 years old and operate at PLF of 40-50. As against this only 15 thermal stations and 22 units had been identified by PFC to conduct R&M & LE studies during 1998-99. Another 100 units were undergoing R&M. But the Committee had observed that there was no fixed criteria or time period for selecting units for RLA studies. The Committee also noted that there was a common view among the players that units running beyond 100,000 hours or 12-15 years should undergo RLA studies so that Life Extension/R&M could be carried out. In phase-1 or R&M programme, selection of plants was made by Central Electricity Authority on the basis of low plant load factor. Another consideration was forced outages. The plants were also designed to have a particular life on completion of which Life Extension measures were required to be taken. Now-a-days the plant availability factor is also considered. The Committee felt that based on the plant availability factor, a unit should be taken up for Remnant Life Assessment studies before completion of its designed life so that by the time it complete its life, SEB is clear about the corrective steps to be taken to keep the unit in a healthy condition. Such a study should clearly define the scope of R&M works.

22. In their reply the Government have stated that while in phase-11, low PLF, force outages (other than E&P) were the main inputs for devising the R&M programme, for phase-11, CEA had advised the SEBs to have proper O&M /performance data and to carry out RLA studies well before the completion of useful economical life to decide the further line of action for life extension/refurbishment of the units. The vendors have been registered by PFC in association with SEBs for undertaking R&M and LE studies/works in respect of overall power plant & systems and specified categories of plant & systems. Further, model bid documents for studies have been prepared by PFC and SEBS. This may be helpful in undertaking the studies, wherever required in a systematic manner and thus in defining the scope of R&M works taking into consideration the recommendations of such studies.

23. The Committee were apprised that under R&M Phase-11, CF-A had advised SEBs to have proper O&M/performance data and carryout RLA studies well before the completion of useful economical life to decide the further line of action of LE/refurbishment of the units. The Committee re-iterate their earlier recommendation and desire that Remanant Life Assessment (RLA) studies should be undertaken well before the economic life

of the plant, clearly defining the scope of work before handing it over to the executing agency.

Financing R&M Projects

Recommendation (SI. Nos. 7 & 8)

24. The Committee had observed that financing procedure for R&M projects were changed for the Second Phase Programme. During the first phase when the Programme was under CLA Scheme, the interest rate for the loan extended to SEBs was 8%. In the 2nd Phase of R&M Programme, which is funded by PFC the interest rate is 14.5%. The Committee had received memoranda from various SEBS, which were of the view that interest rate is on the higher side and conditions laid down by PFC were not user friendly. The Committee had also found that subsidy scheme of 4% extended was not encouraging enough for SEBs as the duration of this scheme was not mentioned clearly. The Committee had desired that Union Government should provide adequate funds through the budget to ensure proper and timely implementation of R&M schemes. The Committee had also recommended that besides PFC, other Fls should also be encouraged to extend loan of soft terms to SEBs.

25. The Ministry in their reply have tried to justify the existing interest rate of 14.5%. They have pleaded that the interest rate for R&M projects are lower in comparison to interest charged on generation project. In case of R&M projects 70% of the project cost are funded. R&M project covered under the AG & SP carry concessional interest where the State has set up SERC, PFC offer 5% concession in interest rate i.e. the interest rate to SEB is only 9.50% p.a. Further, if such a project is situated in a North-Eastern State, a further concession of 1% in interest is offered. Further, on timely payment of dues by SEBS, PFC offer a further reduction of interest by 0.50%. The Ministry pointed out that when all these aspects are taken into account, the interest rate virtually comes to 8%. Ministry have also argued that PFC's interest rates are very competitive when compared with other Financial Institutions like IDBI, IFCI and ICICI. PFC also does not insist on the criteria of 3% ROR by SEBs as stipulated in Electricity supplies Act, 1948.

26. The Committee are not convinced with the argument put forward by the Ministry that interest rate for R&M projects is about 8% to 9% as was during phase 1 Programme. The Committee had observed that due to stiff terms and conditions imposed by PFC, the SEBs have failed to avail the loan facilities for R&M. The Committee are of the view that linking lower interest rate with string like setting up SERC, etc, would delay the R&M works and deprive the power sector of low cost finance. The Committee had recommended that the Ministry should consult SEBs regarding the interest rate, the penal interest on delayed payments, commitment charges, etc., which hitherto prevented utilization of R&M funds by SEBs effectively. The

Committee are constrained to note that while the funding pattern of R&M projects has not been found to be favourable by the SEBS, the Ministry of Power are content with the attaching conditionalities to lower interest rate. The Committee would like the Ministry to realize the importance of generating additional power through R&M projects, which is the least cost option and provide cheap funds so that SEBs feel at case in receiving/utilizing available funds for R&M.

27. The Committee are unhappy to note that Government have not responded to their recommendation for encouraging other Financial Institutions, besides PFC, in extending soft loan to SEBS, especially for R&M Programme. The Committee desire that Government should take up this matter immediately with Financial institutions to make available cheap funds for R&M works.

Decommissioned and Scrapped Power Projects

Recommendation (81. No. 14)

28. The Committee had noted that the 4 thermal units having capacity of about 250 MW had been decommissioned on account of uneconomical operations. These projects are (Harduaganj 'X 3x30 MW, Korba (E) 1x10 MW, Paras 1x30 MW and Barauni 2x15 MW). Similarly, Durgapur unit of DVC (2x55 MW) was scrapped due to fire accident. As a result, 260 MW of generation capacity was being lost. The Committee were of the view that in the present technologically advanced era, no generating units should be decommissioned or scrapped especially when there was an acute shortage of power in the country. The Committee, therefore, had recommended to explore the possibilities of rehabilitating these units under R&M Programme. The Committee had also asked the Central Government to impress upon the State Government/SEBs about the need of rehabilitating these units by R&M Programme. The Committee had further asked for a techno-economic package by Union Government in this regard. The Committee were of the view that while clearing a new power project all the possibilities of getting optimum power from existing plants in the region through R&M Programme ought to be explored. These projects should be funded on priority basis and monitored closely to prevent fall in generation due to lack of evacuation system and lack of inadequate fuel supply.

29. In their reply, the Ministry have been informed that had [(Harduaganj) 'A' 3x30 MW, Korba (E) 1x10 MW, Paras 1x30 MW and Barauni 2x15 MW] power projects were recommended for closer as cost involved in revamping of these units where prohibitive and it was not considered viable to revive these units. As regard to the recommendations of the Committee that while clearing a new power project all possibilities of getting optimum power from existing plants in the region through R&M, the Ministry have mentioned that care would be taken once

in 10-15 years R&M is finalised and this aspect will also be looked into while clearing a new project in any region.

30. The Committee have noted the arguments put forward by the Government in decommissioning/closing certain units of Harduaganj, Korba, Paras, Barauni and Durgapur (DVC), on account of uneconomic operations. Considering that statutory clearance for them viz. Environment and Forest Clearance, coal and water linkages is already there and no further acquisition of land is involved, Government should consider setting up new units in their place. Alternatively, the Government should explore the possibility of setting up new units by Private developers though international competitive bidding and PPA signed with them, so as to utilise the resources most judiciously to meet the power shortages. The Committee feel that the case of Durgapur plant should be re- examined and efforts should be made to revive the plant. The Committee should be kept informed about the steps taken in this regard by the Government.

CHAPTER –II

RECOMMENDATIONS / OBSERVATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation (SI. No. 1)

The Committee have observed that out of about 56,000 MW installed thermal capacity, 30% need renovation and modernisation. These plants are more than 20 years old and are operating at very low Plant Load Factor (PLF) and availability levels. The Committee also find that most of the imported units installed during the 50s and 60s and indigenous units installed during 70s and early 80s are facing problems due to high ash content coal than their designed capacity and they require major modification/restructuring/renovation and augmentation. The Committee acknowledge that addition to generation of power through renovation and modernisation of Power Plants is one of the most cost-effective options available as the cost of generation through R&M of power project is estimated at only 20% cost of new power plant. Moreover, R&M projects do not require environment clearance, new coal and water linkage and land acquisition. These projects thus, can be completed in a time bound manner and in almost 30% of time taken for new projects.

Reply of the Government

The Government is fully aware of the need for undertaking Renovation & Modernisation of old power plants. As against 69,936.16 MW thermal capacity in the country as on 29.2.2000, a thermal capacity of 13570 NW was covered under R&M Phase-I which has already been completed in March, 1996. During Phase-II of R&M. A total thermal capacity of 20869.43 NIW has been covered and is under implementation. In addition to this, additional thermal capacity has been identified to be covered during 9th Plan. It would, therefore, be seen that R&M of thermal stations is being accorded priority.

[Ministry of Power O.M. No.12/12/97-Th. 3 (Vol.III) dated 30.3.2000]

Recommendation (Sl. No. 5)

The Committee have observed that deficiencies in Operation and Maintenance practices are irregular, inadequate and improperly planned maintenance programmes have caused prolonged outages of power plants. The cash strapped SEBs have even postponed major replacement works. Besides, lack of adequately trained Operation and Maintenance staff, non-introduction of modern management techniques and methods, are the other causes of poor performance of thermal power stations. The Committee are of the view that in

order to keep the plants in healthy conditions and to achieve better reliability, availability and plant load factor etc. there is a need to evolve a systematic approach to carry out timely inspection and take preventive measures in a phased manner. In this context, the engineering studies of Residual Life Assessment (RLA) and Life Extension assume paramount importance. The Committee have been informed that at present there are 77 stations generating power upto 60 MW having age profile of more than 25 years, operating at PLF in the range of 38-45. Another 337 stations generating power in the range of 60-110 MW are more than 20 years old and operate at PLF of 40-50. As against this only 15 thermal stations and 22 units have been identified by PFC to conduct R&M & LE studies during 1998-99. Another 100 units are undergoing R&M.

But the Committee have observed that there is no fixed criteria or time period for selecting units for RLA studies. The Committee also note that there is a common view among the players that units running beyond 100,000 hours or 12-15 years should undergo RLA studies so that Life Extension/R&M can be carried out. In phase-1 of renovation & modernisation programme, selection of plants was made by Central Electricity Authority on the basis of low plant load factor. Another consideration was forced outages. The plants are also designed to have a particular life on completion of which life extension measures are required to be taken. Now-a-days the plant availability factor is also considered. The Committee feel that based on the plant availability factor, a unit should be taken up for Remnant Life Assessment Studies before completion of its designed life so that by the time it complete its life, SEB is clear about the corrective to be taken up to keep the unit in a healthy condition. Such a study should clearly define the scope of renovation & modernisation works to be taken up.

Reply of the Government

While in Phase-1, low PLF, force outages (other than E&F) were the main inputs for revising the R&M programme. For Phase-U, CEA had advised the SEBs to have proper O&M / performance data and to carry out RLA studies well before the completion of useful economical life to decide the further line of action for life extension/refurbishment of the units.

The vendors have been registered by PFC in association with SEBs for undertaking R&M and LE Studies/works in respect of overall power plant & system and specified categories of plant & systems. Further model bid documents for studies have been prepared by PFC and SEBS. This may be helpful in undertaking the studies, wherever required in a systematic manner and thus in defining the scope of renovation and modernisation works by taking into consideration the recommendations of such studies.

[Ministry of Power O.M. No. 12112197-Th. 3 (Vol. III)
dated 30.3.2000]

Comments of the Committee

Please see para 23 of the Chapter 1 of the Report

Recommendations (SI. No. 6)

The Committee are of the view that renovation & modernisation and environmental activities should be clearly and separately defined so that investment on renovation & modernisation work can be ensured to bring in the desired increase in generation capacity and plant availability. The basic idea for selecting a unit for renovation & modernisation should be to obtain maximum technical and economic utilisation of balance useful life in an existing equipment. The Committee note that RLA and R&M work have been taken up as a package. As a result transparency has not been achieved. The Committee emphasize the need for utilising the available expertise and information with the CEA and recommend that both RLA and R&M work should be separated from each other. The Committee also favour that RLA studies should be completed by SEBs/CEA etc. by using finance made available by PFC, for the purpose so that the scope of work can be properly identified and then the project can be offered to vendors for R&M work to ensure transparency and avoid disputes in regard to scope of R&M works.

Reply of the Government

For undertaking RLA studies, PFC could be approached for availing financial assistance by way of grant to SEBs/State Governments etc. under Accelerated Generation and Supply Programme of Govt. of India as well as separate grant/soft loan from PFC from its own funds. PFC in association with SEBs has registered vendors and prepared model bid documents for studies in association with SEBS. The scope of work could be identified by making use of the same as mentioned in reply to recommendation No. 5.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

Recommendation (S1. No. 7)

The Committee find that under phase-I of R&M programme, the Central Government had financed the programme under Central Loan Assistance Scheme. SEBs were given loans carrying 8% interest. However, in phase-II, this scheme was dropped and funding was done by PFC with an interest rate of 14.5%. The Committee observe that due to stiff terms and conditions for funds and other conditionalities insisted upon by PFC, State Electricity Boards failed to receive required amount for R&M programme. Almost all SEBs which sent memoranda to the Committee are of the view that the terms and conditions laid down by PFC were not user friendly. The Committee desire that the conditions regarding penal

interest on delayed payments commitment charges and reimbursement procedure should be gone into and suitably modified in consultation with and according to the suggestions made by the SEBS.

Arranging of finance has been the biggest problem in implementation of R&M scheme. As of now PFC is the only source of finance for this activity. For this other financial institutions should be encouraged to extend loans on soft terms to SEBS.

Recommendation (S1. No. 8)

The Committee note that in spite of the 4% subsidy scheme State Electricity Boards are not interested to opt for the funds as they are not sure of the duration of such subsidy scheme. The Committee therefore, recommend that this scheme should continue beyond the Ninth Five Year Plan so that R&M can get adequate funds and apprehensions in the minds of utilities can be removed. The Committee are of the view that the Union Government should provide adequate financial allocation in the budget to ensure proper and timely implementation of R&M schemes. The Committee find that in Phase- II, funding has been done by PFC with a much higher interest rate than in Phase-I. The Committee desire that funds for R&M works should be provided to SEBs at a much lower rate and without avoidable formalities to ensure that R&M projects do not suffer for lack of funds.

Reply of the Government

PFC accords high priority to Renovation & Modernisation Schemes (R&M). PFC charges the lowest interest rate of 13.50% on R&M schemes (other projects like generation carry higher interest) and gives larger funding of 70% of the project cost. The, R&M project covered under AC&SP carry concessional interest. For instance, if the project is covered under AC&SP and such a project is situated in North Eastern State, a concession of 5% in interest is offered.

Further on timely payment of dues by SEBS, PFC offer a further reduction of interest by 0.50%. There is no reason why a SEB should not avail of all these concessions. Hence if all the above are taken into account the interest rate charged by PFC is about 8%-9% p.a. This compares very favourably with 8% interest charged by Central Government for R&M Programme Phase-1. Further, PFC's interest rates are very competitive when compared with other Financial Institutions like IDBI, IFCI & ICICI.

PFC finances the projects of SEBs subject to certain eligibility criteria like the SEB should cam 3% ROR as prescribed in the Electricity Supply Act, 1948, exposure norms etc. These are normal criteria which any financial institution applied while financing projects.

However, here too, PFC offer some relaxations. For the R&M schemes covered under AC&SP, the condition of 30/a ROR is not insisted upon. For reform committed States, relaxation in exposure norms are allowed based on the progress of reforms.

Thus PFC makes every effort to see that R&M scheme get due importance and finance. the loan terms and conditions are standard and minimum. The terms and conditions go to help SEBs in a large way, about indirectly that the loan funds taken from PFC are used in the specific R&M projects, that the State Govts./SEBs commit their portion of funds for the R&M project, the State Govts. release subsidy to SEBs etc.

In these ways PFC contribute for the speedy completion of R&M projects. PFC's disbursement procedures are very simple. The equipments/items of work for which financing is to be made are determined before-hand. On incurring the expenditure on agreed equipments/items of work, SEBs submit the claims to PFC, which are disbursed within a week's time. PFC also encourages SEBs to send the invoices / bills to PFC with a certificate of materials/equipments received or work completed so that PFC can make direct payment to the supplier/contractor. This helps the SEBs in their liquidity management and use their resources for more R&M projects.

It may please be appreciated that after all PFC as a Company has to function on commercial lines, so that PFC get good credit rating and mobilise funds from market at cheaper rates and finance the projects of SEBs at competitive interest rates.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

Comments of the Committee

Please see para 26 and 27 of the Chapter I of the Report,

Recommendation (S1. No. 10)

The Committee note that one of the statutory functions of CEA is monitoring of all the projects including R&M projects. The Committee find that CEA has a system of monitoring plants performance on a monthly basis and every fault which arises is reported to them. They know the details of each station. The Committee, however, note that the system of monitoring by CEA has been given up due to certain changes in the power sector. The Committee note that a Task Force comprising of senior representatives of the SEBS, power station concerned, CEA and PFC has been set up for ensuring implementation of the schemes as per agreed schedule. But this has not been able to ensure timely completion of R&M projects.

Reply of the Government

The Government have issued instructions to CEA that their engineers together with officials of PFC should visit power stations requiring R&M to study and define the scope of R&M work in order to restrict the overall cost to essential only, and also to monitor the physical implementation by site visits regularly. It is hoped that this would ensure timely completion of R&M projects.

[Ministry of Power O.M. No. 12112197-Th. 3 (Vol. III) dated 30.3.2000

Recommendation (SI. No. 11)

The Committee are sad to note while CEA was fully involved in R&M Phase-1 exercise all over the country starting from identification of the R&M schemes scope of work and also rendering assistance to SEBs in framing proper schemes, project report cost-benefit analysis etc., the monitoring by CEA has been given up in Phase-11 of R&M programme. The Committee deprecate the withdrawal policy of CEA from its statutory functions of monitoring power plants and emphasize that the monitoring by CEA, the best available agency, should be continued even though the PFC is monitoring the progress of implementation to ascertain the utilization of its funds. CEA should ensure that all factors responsible for delaying any R&M project are sorted out and work is completed without time and cost over-runs.

Reply of the Government

The Ministry of Power in their letter dated 10.3.99 has clearly mentioned the respective roles of CEA and PFC for undertaking R&M of power plants. CEA have since initiated necessary action in this regard. (Copy of letter dated 10.3.99 enclosed as Annexure C)

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III) dated 30.3.2000]

Recommendation (Sl. No. 12)

The Committee have observed that there is no proper perspective planning regarding selection and implementation of the R&M power projects. The successive R&M programme initiated by the Government have failed to achieve the desired results due to lack of motivation of SEBs, lack of proper planning in implementation, failure in ensuring adequate funds and absence of post R&M monitoring. While the Committee are sad to note that cheap source of power through R&M could not be utilised due to lack of sufficient transmission and distribution facilities for free flow of power, they also deprecate the policy of pursuing R&M projects as a commercial venture, and the tendency of the Ministry of Power in trying to withdraw itself from planning for power sector.

The Committee are of the view that as R&M helps in generation of cheap power in short duration, commercial considerations alone should not govern the Ministry's participation in the scheme.

Reply of the Government

SEBs are autonomous organisations under the administrative control of State Government. and Central Govt. as such has no direct control over SEBs, who are primarily responsible for undertaking R&M of their power plants. In view of the fact that R&M of power plants is one of the most cost-effective options available for generation of power, the Govt. took initiative in implementing R&M of power plants. For Phase-I of R&M, the Govt. provided Central loan assistance which carries a nominal rate of 8% interest. For Phase-II of R&M, PFC provided loan assistance at a nominal rate of interest. Further, R&M projects covered under AC&SP carry concessional rate of interest. For instance, for the R&M project covered under AG&SP and if the State has also set up SERC, PFC offers concession in interest rate i.e. the interest rate to SEB is only 9.50 p.a. Further, if such a project is situated in North Eastern States, a further concession of 1% in interest is offered. Further on timely payment of dues by SEBS, PFC offer a further reduction of interest by 0.50%. It may further be mentioned that PFC has relaxed the general stipulation of 3% ROR and almost all the States have become eligible for availing PFC loan.

From the above, it is submitted that the rate of interest charged by PFC is not commercial and covers barely the cost of borrowing by the PFC. It will be appreciated that Central Government is not in a position to provide further subsidy to SEBs for undertaking R&M. It may also be mentioned that besides phase 1 & H of R&M, CEA have identified additional power stations for carrying out R&M. It would, therefore, be evident that Government is closely associated with the planning, formulation and implementation of R&M schemes.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

Recommendation (S1. No. 13)

The Committee note that in the absence of any National Policy on R&M, the programme is not getting that much attention, which it ought to have been. The piecemeal efforts of States/SEBs have not yielded the desired results. While organisations like ASSOCHAM, CH and BHEL have advocated the imperative need to draw a long term perspective plan on R&M, Secretary (Power), during his deposition before the Committee opined that 'We have not done a perspective plan for the next 10-15 years. But there is a five year plan which can be taken as perspective plan". Chairman, CEA, was also of the opinion that a long term perspective plan is not required as the investment is very low. The Committee do not concur with the views of Secretary (Power) & Chairman, CEA and desire that

a well defined national perspective plan for 12-15 years for R&M and L.E. of power plants should be framed in consultation with major players like CEA, PFC, SEBS, Vendors, developers and consultants. All the thermal and hydel projects which now require R&M and the projects which are expected to be in need of life extension/renovation and modernisation and uprating should be identified and put up for R&M and Life Assessment study at the appropriate time. These identified projects should be prioritised in each Five Year Plan and implemented, so that these could be completed within the Five Year Plan. The Committee are of the view that R&M schemes can be taken up in phases within the broader scheme of perspective plan so as to complete the projects within the stipulated time.

Reply of the Government

CEA has already taken up the preparation of the Perspective Plan for R&M of Power Stations. The draft document has been prepared and is being circulated to SEBs/utilities for their comments.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

Recommendation (SI. No. 14)

The Committee note that 4 thermal units, having capacity of 250 MW (Harduaganj A' 3 x 30 MW, Korba (E) 1 x 10 MW + 3 x 30 MW, Paras 1 x 30 MW and Barauni 2 x 15 MW) have been decommissioned on account of uneconomical operation. Similarly, Durgapur unit of DVC (2x55 MW) damaged in fire accident has also been scrapped. As a result, 360 MW generation capacity is being lost. The Committee are of the view that in the present technologically advanced era, no generating unit should be decommissioned or scrapped especially when there is acute shortage of power in the country. The Committee, therefore, recommend that possibilities should be explored to rehabilitate these units by undertaking R&M measures in them. The Central Government may, therefore, impress upon the State Government/SEB's the need to rehabilitate these units by 'R&M'. A special techno-economic package may also be considered by Union Government in this regard.

The Committee feel that while clearing a new power project all the possibilities of getting optimum power from existing plants in the region through R&M should be explored. These projects should be funded on priority basis and monitored closely to prevent fall in generation due to lack of evacuation system, lack of inadequate fuel supply, etc.

Reply of the Government

The position in respect of thermal power stations which have been decommissioned on account of uneconomical operations is as under:

(i) Harduaganj ‘A’ 3x30 " Units

These Units were commissioned in the year 1962/1964 and were permanently closed since April 1991 due to uneconomical operation. These are the imported Units. The different Committees which were constituted to examine the possibilities of reviving these units recommended to close down the units due to their unserviceable conditions. Moreover the expenditure involved in the revamping these units being prohibitive and it is not considered viable to revive these Units.

(ii) Korba (E) Thermal Power Station-1 (1x10+3x30 MW)

The 10 MW Unit was commissioned in 1963 and 30 MW Units were commissioned in the year 1959160. Due to aging, non-availability of spares and poor availability, the operation of the Units was no longer economical. Moreover the Units were not meeting the pollution Control norms. Hence, the units were closed down in June'89 and retired w.e.f. 1.4.90. It is not techno-economically viable to revive these Units at this stage.

(iii) Paras Thermal Power Station 30 MW Unit

This Unit was commissioned in 3/61 and was having stoker fired boiler. Due to aging, non-availability of spares and obsolete technology, consequential poor availability, the operation of the unit was no longer economical, environment friendly and safe. As such the Unit was retired since June, 1993 and the revival of the Unit will not be economically viable.

(iv) Barauni 2x15 MW Units (Unit 2 & 3)

These coal fired units were commissioned in the year 1963. As these units had already completed their economically useful, life and due to their poor availability, problems in getting spares and non- availability of high grade coal for which the boilers were designed, the units were closed down by BSEB. It was not techno-economically viable to revive the operation of these small size Units which are lying inoperative for over a decade at this stage.

(v) Durgapur Units 1 & 2 (2x55 MM

Unit Nos. 1 & 2 Durgapur Thermal Power Station are imported Units and were commissioned in the year 1960-1961. The units are under shut down since 1011985 due to damage in fire accident. The proposal for rehabilitation was submitted by DVC to CEA and the scheme was Techno-economically cleared by CEA on 9.1.95 at an estimated cost of Rs. 391.62 crores including IDC.

Subsequently, the cost of the rehabilitation works was increased to Rs. 493.63 crores in January, 1997 by DVC. As the cost was less than Rs. 500 crores, no clearance from CEA was required. However, as per the analysis carried out by CEA the cost of rehabilitation woks is considered to be on higher side while comparing with the green field project. The Units are not in operation since 1011985 and as such it is not considered advisable to go for rehabilitation of these units lying idle for the last 14 years on techno-economic reasons.

From the above, it will be observed that only those units were recommended for closure, where the cost involved in the revamping of the units was considered prohibitive and it was not considered viable to revive these units.

As regards recommendations of the Committee while clearing a new power project all the possibilities of getting optimum power from existing plants in the region through R&M should be explored, it is submitted that this will be taken care of once the 10-15 year R&M plan is finalised. This aspect shall also be looked into, while clearing a new project in any region.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

Comments of the Committee

(Please see para 30 of the Chapter I of the Report).

APPENDIX A

ONGOING RM&U HYDRO SCHEMES

(As on 29.2.2000)

Sl.No.	Name of Scheme	Inst. Capacity (MW)	Est. Cost Rs. cr.	Expenditure Incurred Rs. Cr.	Physical Programme	Completion Schedule	Remarks
1	2	3	4	5	6	7	8
	Andhra Pradesh						
1	Lower Sileru	4x115	13.35	5.49	50%	2000-01	Out of Rs. 9.30 crs. Sanctioned by PFC Rs. 5.39 crs. Disbursed till 31.12.99. See System for units 2,3& 4 commissioned & pre-commissioning works on unit 1 is completed. 2 Nos. Pumps & motors for Dewatering of U3&4 replaced & commissioned. Governors, stator air coolers, TGB oil coolers, SF6 breakers etc. received at site. Balance equipments / materials likely to be received shortly. Scope of supply is being revise.

1	2	3	4	5	6	7	8
2.	Srisailam **Himachal Pradesh**	7x110	16.32	10.12	60%	2000-01	Out of Rs. 11.40 crs. Sanctioned by PFC Rs. 7.56 crs. Disbursed till 31.12.99. Most of the materials like spare runner, LBB protection for breakers, Neutral Grounding Transformers etc. received at site. Scope of supply is being revised.
3	Bassi	4x15	5.35	3.9145	60%	2000-01	Out of Rs. 3.70 crs. Sanction by PFC, Rs. 289 crs. Disbursed till 31.12.99. Governor of Unit I, II & IV replaced. Spear and nozzle assembly of U-III replaced. Air cooler of U-IV replaced. Isolating seals of U-1, II & III replaced. II KV cables for unit II & III replaced. LT switchgear replaced.

1	2	3	4	5	6	7	8
	Karnataka						
4.	Mahatma Gandhi	4x12+4x18	33.90	10.49	50%	2000-01	Out of Rs. 23.50 crs. Sanctioned by PFC Rs. 12.57 crs. Disbursed till 31.12.99. Rewinding of Unit 1&2 was in progress. Order for electronic governors & new runners placed on M/s Sulzer Flovel Switchyard Structures have been painted. Order for static excitation system for all 8 units awarded to M/s BHEL material received and erected. 16 nos of air coolers installed. Material received for 100 KV. SF6 breakers, 100 KV CTs & C&R Panel sets. Material received for cooling Water System of Generator Coolers & Coolers of bearing oil system.

1	2	3	4	5	6	7	8
5	Neriamangalam	3x15	31.92			Uncertain	Agreement with M/s ABB Power General Switzerland could not be finalized.
6	Sabarigiri	6x50	163.34	5.186		Uncertain	Two units have been reminded from BHEL. Three units have been reminded from M/s Yashmum, Mumbai. Financial tie up awaited.
7.	Poriangalkuthu	4x8	9.55	0.34		Uncertain	Stator & rotor poles of Unit 1 have been rewound with class F insulation. Scheme is being revised.
8.	Orissa Hirakund I (U3&4)	2x24	54.3	0.175		2002-2003	Tied up for KFW German Assistance / Loan routed through PFC. PFC sanctioned a loan of Rs.88 crore. Tentatively decided to award the contract to M/s. Voith Siemens & M/s. ABB Sulzer. Order yet to be placed.

1	2	3	4	5	6	7	8
9.	Hirakund-I (Switchyard Equipment)	-	9.85	3.00	30%	2000-2001	SF6 circuit breakers, CTs, PTs, Power & control cables, 1000 KVA 10 / 0.4 KV Transformers procured, Internal telecommunication system installed.
10.	Hirakund-II	3x24	82.05	42.563	50%	2000-2001	PFC sanctioned & disbursed a loan of Rs.26.68 crore. R&M of Unit 1 completed and spinned in July, 1998. Unit 3 stator has been replaced in July, 1992. One No.132 KV / 33 KV 20 MVA transformer, one no. 132 KV breaker and 6 nos. 33 KV, VCB have been commissioned. R&M of switchyard completed.
	Tamil Nadu						
11.	Mettur Dam P.H.	4x10	41.50 Rev. 78.80	1.418	10%	2000-2001	Out of Rs.44.2 crores sanctioned by PFC, Rs.6.63 crores disbursed by PFC till 31.12.99. Rewinding of rotor and stator of Unit-3 completed. Protective relays procured.

1	2	3	4	5	6	7	8
12.	Pykara	3x6.65+ 2x11+2x14	17.06 Rev. 26.06	19.17	50%	2000-2001	Out of Rs.9.25 crores sanctioned by PFC, Rs.9.25 crore. Disbursed till 30.9.99. Erection of valve house crane, cooling water system & standby bearing oil pump has been completed. Erection of L.V. Aux. Board is completed. 11 KV cable for two units erected. Protective relay panels, 600 mm & 660 mm penstock control valves, duplex strainers, AVR Governors & 110 KV SF 6 circuit breakers and 2 nos. 12 MVA transformers received at site. Erection work shall be taken up depending upon the availability of shut down based on grid condition.
13.	Papansam	4x5.8	40.28 Rev. 59.08	0.82		2001-2002	Out of Rs.32.7 crores sanctioned Rs4.91 crores disbursed by PFC till 31.12.99. Protective relays received at site. Action initiated for procurement of control cables.

1	2	3	4	5	6	7	8
	Uttar Pradesh						
14.	Khatima	3x13.8	1.64	0.442	12.5%	Closed	DC battery replaced. Generator transformer of Unit 1 repaired. Main & pilot exciter ammature renovated. Cooling tanks of generator coolers changed. Further work held up for want of funds. UPSEB closed the scheme.
15.	Pathri (U 3)	3x6.8	3.8	0.2596	28%	Closed	Rehabiting of turbine & generator guide bearings completed. Repair work done. Further work held up for want of funds. UPSEB closed the scheme.
16.	Ramganga	3x66	1.6	0.08	20%	Closed	Rehabiting of turbine guide bearing completed. Renovation of rotor spider cover plates of all units completed. Further work held up for want of funds. UPSEB closed scheme.

1	2	3	4	5	6	7	8
	BBMB						
17.	Bhakra RB	5x120	77.50	83.83	80%	2000-2001	Tied up with TPE erstwhile USSR Loan Routed through PFC. PFC sanctioned a loan of Rs.32.29 crores. Loan disbursed Rs.32.29 crores till 30.9.99. Unit 9 commissioned on 26.2.96. Unit 6 commissioned on 22.6.97 and Unit 8 commissioned on 5.4.98. All three units uprated by 37 MW each & their life extended by 20-25 years. Due to non dispatch of stator punching from Russia work held up for about 18 months. The schedule of completion is therefore, delayed. Work on Unit No.10 is in progress and expected to be completed on 30.5.2000.

1	2	3	4	5	6	7	8
	N.H.P.C.						
18.	Loktakh, NHPC	3X35	24.4			Uncertain	As per NHPC, scheme is yet to be taken up. Uprating studies carried out.
	J&K						
19.	Lower Jhelum	3x35	20			Uncertain	Scheme has been revised by PDC, J&K and posed to PFC for funding. Order for replacement of runner for Unit-2 placed on BHEL. Despatch of runner held up for want of funds.
20.	Sumbhal Sindh	2x11.3	11			Uncertain	Scheme has been revised by PDC. J&K and posed to PFC for funding.
	Meghalaya						
21.	Umiam St. I & St. II	4x9+2x9	86.92 53.27			2001-2002	St. I tied up for OECF loan completion of St. II uncertain

1	2	3	4	5	6	7	8
	West Bengal						
22.	Jaldhaka I	3x9	12.6	-	-	Uncertain	1 MOCB has been replaced departmentally. Budget provision has been kept for repairing of mechanical governors which are to be replaced by electronic governors. Awaiting financial tie up. Earlier tie up with OECF could not be materialized.
	DVC						
23.	Maithon	3x20	17.34 (Re.39.00)	-	-	2002-2003	DVC revised the scheme and expected to take up in 1999-2000.
24.	Panchet	1x40	2.17	-	-	2001-2002	L.O.I. for replacement of existing excitation system with static excitation system placed.

S.N.	Name of Scheme	Inst. Cap (MW)	Est. Cost (Rs. Crs.)	Exp. Mw	Benefits MU	Remarks
	Andhra Pradesh					
1.	Machkund	3x17+3x21.25	89.11	114.75	675	Interest problem (settlement of sharing issues between Govt. of Orissa and (A.P.)
	Bihar					
2.	Subernrekha	2x65	16.20	-	11.3	No progress. No information forthcoming.
	Meghalaya					
3.	Kyredemkulai	2x30	7.4	6	-	Awaiting financial tie up and shall be taken up after implementation of Umiam St. I & II.
	Orissa					
4.	Hirakud-I (U 5 & 6)	2x37.5	106.77	96	422.90	Awaiting financial tie up and shall be taken up after implementation of RM & U of Unit 3 & 4.

APPENDIX C

SHASHI SHEKHAR
DIRECTOR
Tel: 371-6020

D.O. No. 12/12/97-Th.3

10th March, 1999

Dear

Government accords high priority to the R&M Programme to improve the performance of the existing power stations in order to increase generation in the short tune and at a far lesser cost compared to green field projects. However, the R&M programme has not progressed at the desired pace due to certain problems, one is lack of coordination between CEA and PFC. A lot of efforts are required to speed up the programme implementation to sustain higher generation.

2. There appears to be some confusion in regard to the precise role of PFC and CEA in formulating, implementing and monitoring of R&M schemes particularly that now R&M projects do not require techno-economic clearance of CEA upto Rs. 500 crores. It is, therefore, now essential to have a fresh look at the relative roles of CEA and PFC and bring about requisite changes to suit the requirement.

3. The Government had set up a Task Force under the Chairmanship of Director (Projects), PFC, and with representatives from Planning Commission, BHEL and CEA to ensure coordination for identifying and prioritising the R&M projects. The Task Force was supposed to visit power plants to study the R&M requirement comprehensively, prepare project report including cost benefit analysis and present it to PFC for loan sanction. Based on the performance/ age of the stations, the task force already constituted was to prepare a list of stations requiring R&M. A representative from SEBs would be integral to the projectisation efforts of the activities.

To sum up, the duties and responsibilities of CEA/PFC would be as under:-

Role of CEA

(i) Based on performance / age of the power stations, CEA or teams constituted with CEA membership should prepare the list of stations requiring R&M.

(ii) In case of a project financed by PFC, after completion of R&M, CEA should monitor the performance of renovated station.

(iii) The projects financed by SEBS, out of their own resources or financed by World Bank/ADB/Bi-lateral agencies viz. OECF, ODA, German etc. would be monitored by CEA from the initial stage to their completion; and also subsequently monitored to assess their performance.

Role of PFC

(i) Detailed Project Report for R&M projects financed by PFC will have to be got prepared by PFC, either with the help of teams or through approved consultants.

(ii) In respect of R&M projects financed by PFC, the progress and completion of R&M scheme will have to be monitored by PFC.

(iii) On completion of R&M, PFC should inform CEA, who should then monitor the performance of the renovated station.

(iv) In case, there are any guarantees in the R&M projects, the fulfillment of these guarantees will have to be monitored by PFC, it being the financing agency.

4. These instructions will supplement the detailed instructions already issued by CEA in their Circular No. 2112/R&M/CEA/971-154 dated 25.7.97.

5. These instructions/guidelines are to take immediate effect,

With regards,

Yours sincerely,

Sd/-
(Shashi Shekhar)

Dr. Uddesh Kohli,
Chairman & Managing Director,
Power Finance Corporation,
Chandralok Building,
Janpath,
New Delhi

Shri R.N. Srivastava,
Chairman,
Central Electricity Authority,
Sewa Bhavan,
New Delhi

CHAPTER III

RECOMMENDATIONS / OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S REPLIES

- NIL -

CHAPTER-IV

RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF
WHICH REPLIES OF THE GOVERNMENT HAVE
NOT BEEN ACCEPTED BY THE COMMITTEE

Recommendation (S1. No.2)

The Committee find that Phase-I R&M programme was launched by the Government of India in 1984 for completion during the 7th plan period but was completed in March, 1996. The reasons for delay as mentioned by Ministry of Power are inadequate flow of funds from State Governments, non-availability of units for shut down due to drought conditions, liquidation of original equipment supplier firm ABL and additional activities included in R&M works subsequently for pollution control. This clearly shows Government planning going haywire. The programme which was to be completed in 6 years took more than 12 years. Even the plant load factor in 13 stations, out of 34 stations covered under Phase-I, came down after R&M activities on which more than 1/3rd of the total expenditure was incurred. The Ministry of Power's statement that there was no escalation in the total cost of Phase-I does not seem convincing as during the twelve years period there was a lot of rise in price index and the Government have spent only Rs. 1066 crore out of the estimated expenditure of Rs. 1165 crore on Phase-I programme. This aspect needs to be gone into in greater details along with the causes which led to decline in plant load factor of thirteen stations. It is understood that about 47% of the total expenditure was incurred on environmental related activities and as such it appears that R&M activity was not paid due attention under the first phase. The Committee therefore, recommend that funds for environmental purposes should be allocated separately. If with lesser expenditure, the generation targets have been achieved, then it seems the targets fixed were unrealistic. This should also be. examined. The Committee feel that achievement of generation targets may be due to some other factors also than R&M like better quality coal, increased use of machines etc. The Committee desire that before undertaking R&M of a plant, all non-technical reasons responsible for poor performance should be identified and attended to so that down time could be reduced as also the cost of R&M. The Committee also desire that the shortcomings noticed during the operation of phase-I should be taken note of and ensured that these do not affect the working of phase-II of R&M.

Reply of the Government

Recommendation (S1. No.3)

While noting the recommendation of the Committee, it is reiterated that, as brought out during the course of the meeting of the Standing Committee on Energy (1998-99), PLF in some of the units covered under Phase-I came down after R&M activities for various reasons such as deterioration in the coal quality & supply, non-availability of adequate funds for regular O&M etc. Power Finance Corporation have recently been approached for devising a mechanism to ensure availability of O&M funds to the Power Stations to see that the R&M programme is put to its intended purpose.

In regard to the proposal for covering expenditure on environmental related activities, it is stated that higher allocations were made for E&F activities such as ESPs, dust extraction and dust suppression system in coal handling plants and ash handling systems etc., under R&M Phase-I programme in view of the emphasis directed towards environmental activities at that time and some of the schemes did not visualise and increase in PLF. The recommendation of the Committee that funds for environmental purposes should be allocated separately, is noted for future R&M programmes; however, in the absence of any dedicated head for E&F, allocations may have to be made under the R&M schemes only.

Regarding the generation targets being unrealistic, it is stated that the same was fixed in consultation with concerned SEE/Power Station Authorities. The review of the Success rate of the programme in totality indicated that the improvement in generation was of the order of 10,000 MU against the target of 7000 MU per annum; however, in case of certain power stations/units, no doubt, the achievements were below the expectations mainly because of the deterioration in the quality of coal, lack of O&M etc. Phase-I was the first time exercise taken up in the country and the experience gained has n_ doubt enriched the expertise for arriving at the programme more realistically in Phase-II.

[Ministry of Power O.M. No. 12/12/97- Th. 3 (Vol. III)
dated 30.3.2000]

Committee of the Committee

Please *see* para 9 & 10 of the Chapter I of the Report.

Recommendation (Sl.No. 3)

Phase-II of R&M programme which was taken up in the year 1992-93 was to be completed during 8th Five Year Plan (1995-96). But only 53% work had been completed upto June, 1998. A total amount of Rs. 988 crore (41.5%) of total cost has been incurred during the same period. Out of 44 stations, work has been completed only in six schemes and on other schemes work is at different stages of completion. The Committee find that 'finance' remains the most important cause of poor performance of the scheme as SEBs are not in a position to provide their share of expenditure in the scheme. The Committee, therefore, desire that the Government should take immediate concrete steps to meet this problem so that the balance work of the Phase-II can be completed in the minimum possible time as it has been already delayed by three years. Every possible efforts should be made to encourage the States to set up State Electricity Regulatory Commissions, if necessary, in order to ensure the financial health of the State Electricity Boards. The Boards or the State Governments should provide funds for the completion of these R&M projects in time.

Reply of the Government

PFC has not been found wanting in releasing fund to the SEB. In fact, it has released certain terms and conditions to make more and more SEBs to become eligible to get loan from it.

As part of its reform initiatives, PFC has reoriented its policies to provide technical and financial assistance to the State Government and the State power utilities to reform and restructure the State power sector. One of the pre-requisites for seeking such financial assistance is the commitment of the concerned State Govt. to reform the power sector and the establishment of the State Electricity Regulatory Commission (SERC).

PFC provides technical and financial assistance in the shape of grant/interest free/concessional/loans to the State Govts./State power utilities to establish and operationalise the SERC.

Additional 1% interest subsidy has been provided under the Accelerated Generation and Supply Programme (AG&SP) Scheme to the State Govt., who established SERC by March, 1999. PFC also organised a seminar in October 1999 to highlight the need for early establishment of the SERC. PFC is emphasising the need for power sector reforms and establishment of SERC during the discussions with the State Government at the highest level.

It will be pertinent to note that SERCs have been operationalised in 13 States viz. Orissa, Haryana, U.P., M.P., Andhra Pradesh, Arunachal Pradesh, Gujarat, West Bengal, Maharashtra, Delhi, Karnataka, Rajasthan, Tamil Nadu, Punjab and Goa have issued the Notifications for the establishment of SERC thereafter. Other States are in the process of initiating steps in this direction.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

Comments of the Committee

Please see para 13 of the Chapter I of the Report

Recommendation (S1. No. 4)

The Committee observe that a programme for R&M and uprating of Hydro Power Stations was taken up only in 1987, in which 55 schemes were selected. The Committee are distressed to note that after 11 long years, out of these 55 schemes, works in only 21 schemes have been completed, 26 schemes are under implementation and no action has been taken by the Ministry in case of 8 schemes. As the R&M and uprating of hydro units require lesser time, and is economically much cheaper, the Committee do not find any reason as to why these projects were not completed in time. The Committee are unhappy with the inaction of the Government and desire the completion of all the on going and other newly selected projects in time. The Government should, therefore, adhere to strict time schedules to avoid any cost and time overruns. The Committee desire that reasons for delay in execution of the pending schemes be gone into and placed before the Committee within 3 months time from presentation of this report to Parliament along with the new time frame within which these would be completed within 3 months time from presentation of this report to Parliament.

Reply of the Government

A National Committee under the Chairmanship of Chairman & Managing Director, NHPC, was set up in 1987 to formulate a Renovation & Modernisation Programme for I-Hydro Electric Projects under operation in the country.

The terms of reference given to the Committee were as follows:

(i) Identify the hydro power stations/plants in the country requiring renovation/modernisation.

(ii) Assess the costs and time frame involved for implementation of the programme.

(iii) Determine the benefits that implementation of the programme would accrue from

(iv) Recommend the pattern of funding of the programme

The Committee submitted its report in July 1987,

Based on the report by National Committee, scheme for renovation and uprating of various hydro power stations in the country was initiated by the Government. The scheme was to be funded by PFC and CEA to provide the overall coordination and technical assistance to the State Electricity Boards in preparation of project reports, monitoring and supervision of implementation of the scheme.

Joint teams comprising engineers from the concerned power stations/Electricity Boards, CEA and BHEL (wherever applicable) etc. were formed which visited the already identified hydro power stations for identification of various problems/constraints adversely affecting the performance of the units and to arrive at mutually agreeable and feasible technical solutions and corresponding scope of work. Based on the recommendations of joint Team, the project authorities prepared the detailed project reports which were submitted to PFC and CEA. The preparation of project reports and processing thereof formed the first phase of the programme. The other phases of the programme are:

(i) Detailed engineering and procurement of various equipments and materials required for the renovation and uprating works.

(ii) Execution of various renovation jobs,

The schemes costing more than Rs. 5 crores (later revised to Rs. 25 crores) were examined in CEA for techno-economic clearance. Schemes costing less than Rs. 5 crores (later Rs. 25 crores) where PFC funding was proposed to be availed were accorded Desk Review clearance. After techno-economic clearance by CEA, these schemes were either funded by PFC or tied up for foreign assistance. There are 36 schemes, which are techno-economically / desk review cleared by CEA. Out of these 36 schemes, DPR's for 20 schemes were received till 1990, 6 schemes in 1991, 4 schemes in 1992, 1 scheme in 1993 and 5 schemes in 1994.

CEA cleared 17 schemes till 1990, 5 schemes in 1991, 4 schemes in 1992, 5 schemes in 1993, 2 schemes in 1994 and 3 schemes in 1995.

From the above it is seen that DPRs for only 20 schemes were received till 1990. Thus actual implementation of some of the RM&U schemes started from 1990 onwards and other schemes progressively till 1995.

Further it is a fact that R&M and uprating of individual hydro unit requires lesser time. However, for hydro power plants having number of generating units, RM&U of hydro units is taken up unit- wise in a sequential manner as it is not possible to arrange for shut down of more than one unit at a time. Also, during period of high water inflaws, shut down of units for RM&U works is also not permitted. As such, the overall period required for RM&U works of hydro power plants having number of generating units is actually more.

Later the Govt. of India raised the ceiling of RM&U schemes requiring techno-economic clearance of CEA to Rs. 100 crores and then to Rs. 500 crores. At present, the RM&U schemes costing upto Rs.500 crores need not be submitted to CEA for techno-economic clearance. Thus there are 19 schemes where CEAs approval has not been required to be accorded.

Further it may also be clarified that renovation and modernisation of 55 no. of hydro schemes under Phase-1 is not centrally sponsored schemes and have to be undertaken by States / utilities from their own resources. The SEB's / Utilities owning above schemes are responsible for implementation of RM&U works which are being carried out by them depending upon the availability of funds, priority for RM&U work and shut down based on grid conditions/constraints.

Out of 55 schemes RM&U works in respect of 25 schemes have already been completed. The latest status of 24 ongoing schemes is given at Annexure-A. Out of these 24 schemes, 10 schemes are PFC funded. Out of 10 PFC funded schemes, 7 schemes are in advanced stage of implementation & are scheduled to be completed during 2000-2001, 2 schemes in 2001-2002 and balance 1 scheme in 2002-2003.
Out of the remaining 14 schemes, 3 schemes of UPSEB have been closed as the project authorities intend to undertake these R&M schemes under Phase-11 & 8 schemes have uncertain schedule of completion as most of them are awaiting financial tie ups. Three remaining schemes are being taken up by DVCINHPC through own resources.

In addition there are 4 more schemes as listed in Annexure-B which are yet to be taken for execution. One scheme i.e. Machkund, A.P. has been held up due to pending settlement of sharing issues between Govt. of A.P. & Govt. of Orissa & other two schemes would be taken up after completion/implementation of ongoing schemes. Hence, schedule in respect of these schemes is also

uncertain. 1 scheme of APGENCO & 1 other scheme of UP Rajya Jal Vidyut Nigam have also been declared closed as they intend to undertake these schemes under Phase 11 during Tenth/Eleventh Plan.

From the above, it is evident that the financial constraints is the major bottleneck in the implementation of RM&U schemes. Also the implementation of these schemes has to be taken up in phased manner subject to availability of shut downs depending upon the grid condition.

Since these schemes are not centrally sponsored by the Central Government, the role of CEA is only limited to monitoring of RM&U works at these schemes. SEBs/Utilities are mainly responsible for RM&U of these schemes, implementation of which is governed by their own priorities, fund availabilities. M.0.P.ICEA, however, have been advising them from time to time to expedite RM&U works at these schemes in the interest of overall power sector development/ operation.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

Comments of the Committee

Please see para 20 of the Chapter I of the Report

CHAPTER V

RECOMMENDATIONS/OBSERVAIONS IN RESPECT OF WHICH FINAL REPLIES OF THE GOVERNMENT ARE STILL AWAITED

Recommendation (S1. No. 9)

The Committee observe that the Government had announced the private power policy in 1991. By opening up the power sector for private investment, the Government hoped that sufficient investment will come for Renovation and Modernisation of power plants. The Committee note that four years after announcement of private power policy in 1995, Ministry forwarded the draft guidelines framed by the Confederation of Indian Industry (CH) to the State Government/SEBs. The Committee are unhappy to know that the proposals made by the Ministry did not find favour with the State Electricity Boards as they were not willing to sell or lease out their plants; the private parties on their part were unwilling to accommodate the manpower of SEBs. The Committee observed that some of the SEBs are technically self-sufficient to look after their own R&M programmes but even other SEBs are not interested to opt for private participation. The Committee feel that LROT (Lease, Rehabilitate, Operate and Transfer) scheme failed as this was framed without considering the ground realities in SEBs. The Committee are also apprehensive of the effectiveness of FIRM approach suggested by CII as this has also been mooted without proper involvement of the Union Government, SEBs, PFC, CEA, etc. The Committee desire that available technology and financial support of private entrepreneurs should be utilised for the benefit of SEBs. A transparent procedure and minimum return should be ensured to encourage private investors. The Committee, keeping all these factors in mind, emphasize that detailed policy guidelines in regard to private sector participation in the field of R&M should be reframed with the active participation of CEA, PFC, SEBs and concerned agencies/experts in private sector.

These guidelines should also take care of excessive man-power in SEBS. The question of bankability of contract may also be considered where development banks like PFC, IDBI, etc. can be asked to extend guarantees on behalf of SEBs to boost investment. The Committee note that the scope of work is usually not properly defined resulting in huge variations in bids and that SEBs are taking too much time to finalise the bids. It is, therefore, desired that immediate steps should be taken to clear such problems.

Reply of the Government.

In view of the fact that private sector participation in the R&M has not been encouraging, the Government has constituted a Committee under the

Chairmanship of Member (Thermal), CEA with representatives from Power Utilities, BHEL, PFQ Ministry of Power, CEA and C.I.I. The draft report has been prepared and circulated among Committee members for their comments. The report is likely to be finalised by April, 2000.

[Ministry of Power O.M. No. 12/12/97-Th. 3 (Vol. III)
dated 30.3.2000]

NEW DELHI;
11 May, 2000
21 Vaisakha, 1922 (Saka)

SONTOSH MOHAN DEV,
Chairman,
Standing Committee on Energy.

ANNEXURE I

MINUTES OF THE SECOND SITTING OF THE ACMON TAKEN SUB-COMMITTEE OF STANDING COMMITTEE ON ENERGY (1999-2000) HELD ON 2ND MAY, 2000 IN ROOM NO. 134, PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Sub-Committee met from 16.00 hours to 17.20 hours.

PRESENT

1. Shri Vijayendra Pal Singh Badnore - Convenor
2. Shri Basudeb Acharia
3. Shri Vedprakash Goyal
4. Shri Anantha Sethi
5. Prof. Ummareddy Venkateswarlu

SECRETARIAT

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

At the outset, Convenor, Sub-Committee on Action Taken Reports welcomed the Members to the sitting of the Sub-Committee.

2. Thereafter, the Sub-Committee considered and adopted the following Draft Reports with some modifications:

(i) Action Taken by the Government on the recommendations contained in the Standing Committee on Energy (1998-99) on the subject 'Renovation & Modernisation of Power Plants'

(ii) Action Taken by the Government on the recommendations contained in the Nineteenth Report of the Standing Committee on Energy (1998-99) on Demands for Grants 1999-2000 relating to the Ministry of Power.

(iii) Action Taken by the Government on the recommendations contained in the Seventeenth Report of the Standing Committee on Energy (1998-99) on Demands for Grants 1999-2000 relating to the Ministry of Non-Conventional Energy Sources.

3. The Sub-Committee authorised the Convenor to finalise the Reports and submit these to the Chairman for consideration by the Standing Committee on Energy.

The Sub-Committee then adjourned.

ANNEXURE II

EXTRACTS OF THE MINUTE S OF THE NINTH SITTING OF STANDING COMMWME ON ENERGY (1999-2000) HELD ON IITH MAY, 2000

The Committee met from 9.30 hours to 10.20 hours

PRESENT

Shri Sontosh Mohan Dev - Chairman

MEMBER

2. Shri Vijayendra Pal Singh Badnore
3. Shri Lal Muni Chaubey
4. Shri M. Durai
5. Shri Sanat Kumar Mandal
6. Shri Amar Roy Pradhan
7. Shri Ravindra Kumar Pandey
8. Shri Harpal Singh Sathi
9. Shri Manoj Sinha
10. Shri P.R. Khunte
11. Shri Girdhari Lal Bhargava
12. Shri Trilochan Kanungo
13. Shri Gandhi Azad
14. Shri Brahamkumar Bhatt
15. Shri Vedprakash P. Goyal
16. Shri Santosh Bagrodia
17. Shri Ramamuni Reddy Sirigireddy

SECRETARIAT

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

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

3. Thereafter, the Committee considered and adopted the following draft Reports without any amendment:

(i) Action Taken Report on the Recommendations contained in 11th Report of the Committee on the subject 'Renovation. and Modernisation of Power Plants'.

(ii) **	**	**
(iii)**	**	**
(iv) **	**	**

4 ** ** **

5. The Committee authorised the Chairman to finalise these Reports after making consequential changes arising out of factual verification by the concerned Ministries and to present the same to both the Houses of Parliament.

6. ** ** **

The Committee then adjourned.

** Paras 3 (ii) to (iv), 4 and 6 relating to other matters have not been included.

ANNEXURE –III

(Vide Para 4 of Introduction)

ANALYSIS OF ACTION TAKEN BY THE GOVERNMENT ON THE RECOMMENDATIONS CONTAINED IN THE ELEVENTH REPORT OF THE STANDING COMMITTEE ON ENERGY (TWELFTH LOK SABHA)

I.	Total No. of Recommendations made	14
II.	Recommendations that have been accepted by the Government (vide recommendations at Sl. Nos. 1, 5, 6, 7, 8, 10, 11, 12, 13 and 14)	10
	Percentage of total	71.4
III	Recommendations which the Committee do not desire to pursue in view of the Government's replies	Nil
IV.	Recommendations in respect of which replies of the Government have not been accepted by the Committee (vide recommendation at Sl. No. 2, 3 and 4)	3
	Percentage of total	21.5
V.	Recommendations in respect of which final replies of the Government are still awaited (vide recommendation at Sl. No. 9)	1
	Percentage of total	7.1