



**SPECIAL AUDIT REPORT
ON FUNCTIONING OF PAKISTAN
LOCOMOTIVE FACTORY,
RISALPUR
PAKISTAN RAILWAYS
AUDIT YEAR 2015-16**

AUDITOR GENERAL OF PAKISTAN

PREFACE

The Auditor General of Pakistan conducts audit in terms of Articles 169 and 170 of the Constitution of the Islamic Republic of Pakistan 1973, read with sections 8 and 12 of the Auditor General's (Functions, Powers and Terms and Conditions of Service) Ordinance 2001. The Special Audit of the Functioning of Pakistan Locomotive Factory, Risalpur was carried out accordingly.

The Directorate General Audit Railways conducted Special Audit of Functioning of Pakistan Locomotive Factory, Risalpur during the year 2015-16 for the period July 2010 to June 2015 with a view to reporting significant findings to stakeholders. Audit examined the economy, efficiency, and effectiveness aspects of the Pakistan Locomotive Factory, Risalpur. In addition, Audit also assessed whether the management complied with applicable laws, rules, and regulations in managing the factory affairs. The Audit Report indicates specific actions that, if taken, will help the management realise the objectives of the Pakistan Locomotive Factory, Risalpur. All the observations included in this report have been finalised in the light of discussions in the DAC meeting.

The Audit Report is submitted to the President of Pakistan in pursuance of the Article 171 of the Constitution of the Islamic Republic of Pakistan 1973, for causing it to be laid before both houses of Majlis-e-Shoora (Parliament).

Islamabad
Dated:

(Javaid Jehangir)
Auditor General of Pakistan

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Abbreviations and Acronyms

ACOS	Assistant Controller of Stores
CDL Shop	Central Diesel Locomotives Shop
CDWP	Central Development Working Party
CKD	Completely Knockdown
CME	Chief Mechanical Engineer
CSR	China South Locomotives and Rolling Stock Corporation Limited.
DAC	Departmental Accounts Committee
DCOS	District Controller of Stores
DE	Diesel Electric
DEC	Dongfang Electric Corporation
DEL	Diesel Electric Locomotive
DLRW	Dalian Locomotives & Rolling Stock Works, China
DPU	Dalian Pakistan Universal
ECNEC	Executive Committee of the National Economic Council
FOB	Free on Board
HP	Horse Power
HSD	High Speed Diesel
LC	Letter of Credit
LD	Liquidated Damages
Loco	Locomotive
MOR	Ministry of Railways
PC-I	Planning Commission Proforma-I
PLF	Pakistan Locomotive Factory
PO	Principal Officer
PPRA	Public Procurement Regulatory Authority
PR	Pakistan Railways
PSDP	Public Sector Development Program
SKD	Semi Knockdown
TOT	Transfer of Technology
UN	United Nations
US	United States
ZCU	Ziyang China Universal

EXECUTIVE SUMMARY

The Director at General Audit Railways conducted Special Audit of Functioning of Pakistan Locomotive Factory (PLF), Risalpur from April to June 2016. The main objectives of audit were to review performance of the factory against intended targets and assess compliance with applicable rules, regulations, codal provisions and procedures. The audit was conducted in accordance with the INTOSAI Auditing Standards.

ECNEC decided in its meeting held on 17th and 18th December, 1979 to set up a Locomotive Factory for progressive manufacture of Diesel Electric/Electric Locomotives. This project was started to acquire self-sufficiency in meeting with the requirements of locomotives to cater for the transportation needs of Pakistan Railways. PLF Risalpur was commissioned in January 1993 with production capacity of 25 locomotives per annum on single shift basis. It was stated in the PC-I of this project dated May 1989 that management of proposed factory as well as other manufacturing concerns under PR would be entrusted to an autonomous organisation to be created for running these units on commercial lines. Since its establishment, PLF Risalpur was working as manufacturing unit of Pakistan Railways.

Key audit findings

As a result of this audit, several instances of non-compliance with rules/regulations and best practices were observed. Key findings of the audit are mentioned below:-

- i. At the planning stage of establishment of PLF it was decided that the factory should be managed as a public limited company but no action in this regard was taken by the PR management up till June 2016.¹

¹ Para No. 4.2.1

- ii. PLF was incurring expenditures of the factory from funds of different projects. PLF utilised PSDP funds of Rs 2,071.46 million up to June 2015.²
- iii. PLF failed to achieve target of local contribution in the manufacture of new locomotives due to which extra expenditure in foreign exchange equivalent to Rs 1,550.98 million was incurred.³
- iv. PR incurred expenditure of Rs 1,337.02 million on unjustified purchase of defective locomotives.⁴
- v. PR suffered loss of Rs 160.52 million due to purchase of 5 ZCU locomotives at higher rate.⁵
- vi. PLF management procured material valuing Rs 20.78 million by splitting up.⁶
- vii. PR made two agreements for Transfer of Technology with Chinese firms but these TOTs were not utilized subsequently and expenditure of Rs 94.82 million was wasted.⁷
- viii. PR was deprived of potential earnings of Rs 17,082.75 million due to poor performance of DPU Locomotives manufactured by the PLF.⁸

Recommendations

- i. PLF may be managed on commercial lines as self-sustaining entity in compliance of recommendations of ECNEC and CDWP.
- ii. Project management should be improved to achieve the given targets of production of locomotives and spare parts and avoid delay in completion of projects & incurrence of unnecessary expenditure.

² Para No. 4.2.2

³ Para No. 4.2.3

⁴ Para No. 4.3.1

⁵ Para No. 4.3.3

⁶ Para No. 4.3.7

⁷ Para No. 4.3.6

⁸ Para No. 4.6.1

- iii. Public Procurement Rules-2004 should be implemented in true letter and spirit while making procurements.
- iv. Transfer of Technology agreements may be made and these technologies may be used efficiently for local manufacturing of locomotives.

1. INTRODUCTION

The Director General Audit Railways conducted Special Audit of Functioning of Pakistan Locomotive Factory, Risalpur from April to June 2016 for the period July 2010 to June 2015.

1.1 Pakistan Locomotive Factory, Risalpur

Pakistan Locomotive Factory, Risalpur was commissioned in January 1993 for manufacturing of Diesel Electric/Electric Locomotives with production capacity of 25 DE Locomotives per annum on single shift basis.

PLF was established to achieve local manufacturing of major assemblies and vital spare parts of locomotives. Other objectives of the PLF were as under:-

- i. Standardisation of locomotives
- ii. Less investment on spare parts due to standardisation,
- iii. Saving of foreign exchange through local manufacturing of locomotives and their spare parts,
- iv. Job opportunities for local residents

In the absence of new DE Locomotive manufacturing projects, the factory carried out the following activities:

- i. Rehabilitation of old locomotives
- ii. Major repair of DE locomotives
- iii. Manufacturing of spare parts for other departments of Pakistan Railways
- iv. Works for other Government Departments

2. AUDIT OBJECTIVES

The major objectives of Special Audit of Pakistan Locomotive Factory, Risalpur were to review: -

- i. Performance of factory
- ii. Effectiveness and efficiency of manufactured locomotives
- iii. Human resource management
- iv. Utilisation of Transfer of Technology
- v. Economy and efficiency of procurements
- vi. Inventory management
- vii. Efficient utilization of finance
- viii. Utilisation of assets of PLF including machinery & equipment

3. AUDIT SCOPE AND METHODOLOGY

3.1 Audit Scope

Special Audit of Functioning of Pakistan Locomotive Factory, Risalpur was conducted during Audit Year 2015-16 for the period covering 2010-11 to 2014-15. Different locations were visited for the purpose of audit, i.e. Pakistan Locomotive Factory, Risalpur, office of the Woks Manager, Diesel Shed Rawalpindi and Karachi.

3.2 Audit Methodology

Review of files/documents for comparative analysis of cost of completely built imported locomotives with that of locally manufactured locomotives in PLF was made. Cases regarding procurement process and other working operations were examined in order to assess the achievements/shortcoming. Local and Foreign agreements were also scrutinised to check the fulfillment of their contents.

4. AUDIT FINDINGS AND RECOMMENDATIONS

4.1 Organization and Management

It was observed that staff was working in excess of sanctioned strength in certain categories despite rationalization of staff in 2003. The staff was retained in PLF after promotion without any vacancy and adjusted against vacancies of other categories. Significant observation regarding organization and management is discussed in the following para:-

4.1.1 Irregular expenditure on pay & allowances of staff working in excess of sanctioned strength - Rs 14.41 million

Para 111 of Pakistan Railway Establishment Code Volume-1 provides that the number of posts sanctioned for each grade in a department shall in no case be exceeded without sanction of authority competent to create a post, either permanent or temporary, in the grade.

During special audit in April 2016 it was noticed that 23 employees of different categories were working over and above the sanctioned strength of PLF and an expenditure of Rs 10.00 million was incurred on their pay & allowances during the period from April 2015 to March 2016. Furthermore, they got promoted but were retained in PLF without availability of vacancy irregularly.

Further it was observed that Assistant Controller of Stores (ACOS) and District Controller of Stores (DCOS) were working in the PLF without sanctioned posts. Thus, unauthorized expenditure of Rs 4.41 million was incurred on their pay & allowances during the period from July 2010 to June 2015.

The matter was taken up with the management in May 2016. The management replied in May 2017 that out of 23 employees, 13 had been transferred/adjusted against vacant posts and remaining would be transferred soon. The management further replied that proposals for placement of posts of DCOS and ACOS on permanent basis had been sent to MOR.

DAC in its meeting held on 29.05.2017, directed that matter be expedited for transfer of remaining employees. Expenditure on account of pay and allowances be got regularised from the competent authority and documentary evidence may be provided to Audit for verification.

During verification in September 2017, reply of management was found unsatisfactory as only two employees were adjusted after retirement of others and four employees of different categories would be adjusted after retirement of others upto June 2018.

Audit recommends that human resource management should be improved and all employees be utilised as per requirement and approved sanctioned strength. Action should also be taken for regularisation of posts of ACOS & DCOS and the expenditure incurred against these posts.

4.2 Financial Management

Financial management of PLF was not found to be sound and many control failures were noticed. Audit observed that up to June 2015 all expenses of the factory were being met from PSDP Funds of different projects instead of converting it into a public limited company. Many revenue works were also charged to the projects funds. The audit observations narrated in the following paragraphs indicated weakness in the financial management of PLF Risalpur:-

4.2.1 Irregular expenditure due to non-conversion of PLF into a Public Limited Company – Rs 2,666.09 million

As per Para 4-II(c) of PC-I of the project of setting up a locomotive factory dated May 1989, the management of the proposed factory as well as other manufacturing concerns under Railway should be entrusted to an autonomous organization to be created for running these units on commercial lines. Further, Para 3 of Annexure-1 of the PC-I provides that in line with the third condition of the ECNEC to run the manufacturing concerns of Railways on commercial lines, the Locomotive Factory has been registered as a Public Limited Company which shall remain dormant till the commencement of production.

During audit it was noticed that production of locomotives started in the year 1992-93 but despite lapse of 24 years, PLF management had not implemented decision of the ECNEC, to operate PLF as a Public Limited Company. Since its establishment all expenditure of PLF was being met from PSDP Funds of different projects. The PLF was shifted on revenue budget from July 2015. Thus, PLF incurred irregular expenditure of Rs 2,666.09 million during the period from 1991-92 to 2015-16 (detail in annexure-1).

The matter was taken up with the management in May 2016. The management replied in May 2017 that implementation of ECNEC and CDWP decision was under progress and offers for joint venture had been received. The reply was not satisfactory because despite lapse of 24 years, no concrete effort was made to convert the PLF into a self-sustaining entity.

DAC in its meeting held on 29.05.2017, directed the PO to furnish revised/elaborated reply along with documentary evidence to Audit within 15 days. No reply was received till finalisation of this report.

Audit recommends that twenty eight years old decision of ECNEC for converting the PLF into a self-sustaining entity (operating on commercial lines) should be implemented without further delay.

4.2.2 Irregular utilization of PSDP Funds of different projects – Rs 2,071.46 million

Para 4.2(c) of Project Management Guidelines provides that consent of the Financial Advisor/Finance Division is a pre-requisite for re-appropriation of funds from development to current expenditure and vice-versa.

Scrutiny of record revealed that PLF management utilised PSDP funds of locomotive procurement/manufacturing projects amounting to Rs 2,071.46 million during the period from July 2001 to June 2015 to execute day to day or non-development works of different departments of Pakistan Railways. In subsequent years, credit of Rs 1,007.28 million was

given to these projects. PLF management made mere adjustments but there was no receipt back of PSDP funds in the subsequent years.

The matter was taken up with the management in May 2016. It was replied in May 2017 that PSDP funds of different projects were utilised on revenue works due to non-allocation of revenue budget. Efforts were made for allocation of revenue budget and consequently revenue allocation was made for PLF for the year 2015-16. The reply was not acceptable because management was not authorised to utilise PSDP funds for revenue expenditure.

DAC in its meeting held on 29.05.2017, directed the PO to examine the issue for regularisation of PSDP funds already incurred for revenue works. However, para was pending for further discussion between Audit and MD/PLF, Risalpur.

Audit recommends that revenue expenditure incurred from PSDP funds may be got regularised from competent authority.

4.2.3 Unjustified expenditure in foreign exchange – Rs 1,550.98 million

Para 2 (iv) of Annexure IX-A of PC-I of the project of Setting up Locomotive Factory dated May 1989 the factory was to assist in the development of industry through import substitution, eventually leading to saving of foreign exchange. As per PC-I the target of local production of locomotive parts was as under: -

(Table-1)

Year of domestic production	1	2	5	10
Ratio of domestic production (Percentage of cost of imported locomotive)	20	30	35	50

Further, it was stated in minutes of the CDWP meeting held on 20th October, 2014, wherein revised PC-I of the project of Manufacture of Five 3000 HP DE Locomotives was approved, the project would be completed with existing facilities of PLF Risalpur with increased domestic portion (about 40% by cost).

During special audit it was noticed that PLF failed to achieve the target of local contribution (50% of the cost) in the locomotive manufactured. Review of procurement/ manufacturing of 30 and 69 DE Locomotive projects revealed that local contribution was 7.92% to 25.56% only. It was also observed that contracts were being awarded to the foreign firms for supply of locomotives in the shape of CKD units but scope of works to be done locally was not mentioned in the contracts. This resulted in incurring extra expenditure in foreign exchange amounting to Rs 1,139.66 million as detailed in Annexure-2.

It was also observed that PR executed a contract dated 3rd June, 2013 with M/s CSR Ziyang China for procurement/manufacture of 5 ZCU Locomotives. As per decision of the CDWP, the management had to incur only 60% foreign exchange i.e. US\$ 5,825,790 on purchase of 5 kits (on the basis of US \$ 1,959,750, cost of one completed ZCU locomotives) but it had incurred an amount of US\$ 9,835,000. Thus, extra expenditure of Rs 411.32 million was incurred in foreign currency (US \$ 3,955,750 x 103.98).

The matter was taken up with the management in May 2016. It was replied in May 2017 that PC-I for procurement/manufacture of locomotives were being prepared by CME/Loco, PR Headquarters. PLF had capacity to achieve 50% deletion of components. The reply was not convincing because PLF failed to achieve objectives of its establishment despite lapse of 24 years.

DAC in its meeting held on 29.05.2017, directed the CME/Loco to furnish revised reply showing that standardisation in one kind of locomotive was possible. DAC further directed that para would stand. No reply was received till finalisation of this report.

Audit recommends that achievement of target of local contribution in future projects of locomotive manufacturing may be ensured.

4.3 Procurement and Contract Management

During special audit many control failures regarding procurement and contract management were noticed. Public Procurement Rules 2004 were not being implemented in true letter and spirit. PLF had no procurement plan and purchases were made by splitting up.

The details of irregularities in the procurement and contract management were narrated in the following paragraphs:-

4.3.1 Loss on account of procurement of 20 DPU-30 Locomotives – Rs 1,337.02 million

As per Para-4 (IV) of minutes of the meeting dated 6th April, 2005 held between Ministry of Railways and M/s Dongfang Electric Corporation/Dalian Locomotives & Rolling Stock Works (DLRW), China, it was requested by the Ministry of Railways that supply of balance 20 CKD Locomotives of 3000 HP be substituted with freight wagons or any other relevant items as mutually agreed.

Contrary to the above, minutes of the meeting 20 CKD DPU-30 locomotives were purchased by the PR for US \$ 21.92 million. Performance of already procured DPU locomotives was not satisfactory, therefore, decision of procurement of 20 DPU locomotives was not justified. Thus, PR suffered loss of Rs 1,337.02 million (1 US\$ = Rs 61) due to purchase of 20 DPU-30 DE locomotives which were subsequently held up after giving service of 2 to 6 years only.

The matter was taken up with the management in May 2016 and management replied in June 2016 that in a meeting held on 10.06.2006 at Beijing between MOR and M/s DEC it was decided that remaining 20 locomotives would be procured with reduced weight of 137.16 ton or less (original 140 ton). The firm gave warranty of five years for under frames backed by a bank guarantee. Overall performance of these locomotives was satisfactory at that time. The reply was not tenable because apart from developing cracks in under frames these locomotives also had other problems including shutdown, turbo failure etc. and subsequently these locomotives were grounded.

DAC in its meeting held on 29.05.2017, directed the CME/Loco to furnish detailed reply in consultation with Director/Procurement within one week. No reply was received till finalisation of this report.

Audit recommends that responsibility may be fixed for purchase of defective locomotives instead of going for other economically viable purchase options.

4.3.2 Loss due to failure of DPU locomotives during warranty – Rs 234.05 million

As per Article 16 of the contract No. PR/2001/69 DEL dated 8th November, 2001 executed between Ministry of Railways and M/s Dongfang Electric Corporation China for procurement of 69 locomotives, the seller warranted that locomotives and components would be free from defects in design material or workmanship for a period of 24 months or first 325,000 kilometers from the date of putting into service of the locomotives, or 30 months from the date of shipment, whichever comes earlier. If any goods or parts thereof fail to meet the foregoing warranties due to the seller's reasons the seller would repair or replace the same. If such failure or defects cannot be corrected by the seller's reasonable effort, the seller shall arrange equitable adjustment.

During audit it was noticed that following two DPU locomotives failed before serving 325,000 km and were held up since long as detailed below: -

(Table-2) (Rs in million)

Locomotive No.	Date of put into service	Date of held up	Service Kilometers	Cost of locomotive
6141	8-Apr-08	13-Dec-09	312,711	134.618
6217	16-Dec-06	14-Mar-09	313,727	99.431
				234.049

These locomotives failed during warranty period but due to poor management these locomotives were not got repaired from the contractor despite lapse of considerable period of time. This resulted in blockage of capital and loss of Rs 234.05 million to the PR.

The matter was taken up with the management in June 2016. The management replied in May 2017 that timely placement of warranty claims was the responsibility of operating divisions. Therefore, they would be able to explain.

DAC in its meeting held on 29.05.2017, was informed that M/s Dongfang Electric Corporation China was black listed and security money was forfeited. DAC directed the PO that the warranty claims lodged within warranty period may be got verified from Audit. No record was provided to Audit for verification till finalisation of this report.

Audit recommends that responsibility should be fixed for not lodging warranty claims with the contractor and efforts may be made for repairing these locomotives without further delay besides recovering cost of repair from the contractor.

4.3.3 Loss due to purchase of 5 CKD DE locomotives at higher rate – Rs 160.52 million

Rule 4 of Public Procurement Rules-2004 stipulates that procuring agencies, while engaging in procurements, shall ensure that the procurements are conducted in a fair and transparent manner, the object of procurement brings value for money to the agency and procurement process is efficient and economical.

PR procured five CKD Kits of ZCU-30 DE locomotives at the rate of US \$ 1,967,000 per kit from M/s CSR Ziyang China vide contract dated 3rd June, 2013 whereas similar locomotives completed in all respect were purchased from the same firm vide contract dated 7th December, 2012 at the rate of US\$ 1,959,750 per locomotive. PLF had incurred additional cost of Rs 156.75 million on the assembly of these locomotives. Thus, PR suffered loss of Rs 160.52 million due to procurement/manufacture of 5 DE locomotives at higher rate.

The matter was taken up with the management in May 2016 and it replied in May 2017 that dollar exchange rate on 1st contract signing date of 7th December, 2012 was 1 US\$ = Rs 97.45 whereas it raised to 1 US\$ = Rs 98.56 on 2nd contract signing date of 3rd June, 2013. The reply was not

factual because cost of Knocked Down Kit (in US Dollar) purchased in June 2013 was higher than cost of complete locomotive purchased in December 2012. Further, local cost (in Rupee) amounting to Rs 156.75 million was also incurred to complete locomotives.

DAC in its meeting held on 29.05.2017, directed the PO that revised reply explaining the reasons why CKD Locos were expensive than CBU Locos and the fact that it was an industry practice, be provided to Audit within one week. No reply was received till finalisation of this report.

Audit recommends that responsibility should be fixed for procurement of locomotives at higher rate besides recovering loss from those held responsible.

4.3.4 Excessive procurement of spare parts – Rs 128.48 million

According to Chapter 4 of Guidelines for Project Management of Planning Commission the two main principles to be observed are economy and regularity. Project Directors have to ensure and adhere to the above financial principles.

During audit it was revealed that spare parts for subsequent maintenance were purchased excessively in project of 5 ZCU locomotives, as compared to another project of 25 ZCU locomotives executed with the same firm just six months before, as detailed below:-

(Table-3)

(Amount in US \$)

Item (1)	Contract No. DP/5 Locomotives /2013 dated 03.06.2013 (2)	Contract No. DP/25 (3000 HP) Locomotives /2012 dated 07.12.2012 (3)	Average per loco cost of spares under 5 DE Locos (4)	Average per loco cost of spares under 25 DE Locos (5)	Extra cost per locomotive in 5 DE locomotive project (4-5) (6)
Spares for three years maintenance and intermediate overhauls	821,974	740,989	164,395	29,639	134,755
Additional Major items	996,289	2,172,223	199,258	86,889	112,369
Total	1,818,263	2,913,212	363,653	116,528	247,124
Extra purchase (247,124 x 5) = US \$ 1,235,620 x 103.9797 = Rs 128,479,397					

Thus, extra procurement of spare parts for 5 ZCU Locomotives valuing Rs 128.48 million resulted in blockage of capital.

The matter was taken up with the management in May 2016. The management replied in June 2016 that first project of 25 ZCU-30 locomotives was completed before finalisation of 5 ZCU-30 locomotives project, therefore, quantity of spare parts in second project was enhanced on the basis of actual assessment. The reply was not correct as quantity of spare parts was not enhanced keeping in view the actual requirement since locomotives of first project were put into service after July 2014.

DAC in its meeting held on 29.05.2017, directed the PO that detailed reply along with documentary evidence regarding justification of purchase of spare parts in both the projects be provided to Audit for verification within a week time. No reply was received till finalisation of this report.

Audit recommends that responsibility may be fixed and action taken for poor planning causing blockage of capital of government money.

4.3.5 Unnecessary expenditure due to poor planning - Rs 95.65 million

According to Chapter 4 of Guidelines for Project Management of Planning Commission, two main principles to be observed are economy and regularity. Project Directors have to ensure and adhere to the above financial principles.

During audit it was noticed that contract No. DP/5 Locomotives/ 2013 dated 3rd June, 2013 was executed with M/s CSR Ziyang Co. Ltd China without any planning. Tools, test instruments, and facilities for manufacturing of 5 DE Locomotives already available in the PLF were included in the contract. Subsequently, these items were deleted vide Amendment Slip No.1 dated 31st December, 2014 after one and half years. The contract value was not decreased on account of deletion of unnecessary items but spares parts equivalent to their value were purchased. Thus, PR procured material valuing Rs 88.77 million without actual requirement.

Further it was observed that PR procured tools and test instruments valuing US\$ 66,193 from M/s CSR Ziyang China under contract dated 3rd June, 2013. Same tools had already been purchased under another contract dated 7th December, 2012 executed between same parties. Thus, spare parts valuing Rs 6.88 million were purchased without justification.

The matter was taken up with the management in May 2016 and it replied in May 2017 that quantity of maintenance spares was enhanced keeping in view actual consumption of spare parts in locomotives procured earlier against another project dated 7th December, 2012. The base shed of ZCU locomotives was in Lahore whereas maintenance tools were distributed among various sheds to attend these locomotives in case of en-route failure. The reply was not based on facts because ZCU locomotives procured under contract dated 7th December, 2012 were put into service during the period from July 2014 to May 2015. Sufficient number of tools had already been purchased for ZCU locomotives under earlier contract dated 7th December, 2012 keeping in view requirements of all maintenance sheds.

DAC in its meeting held on 29.05.2017, directed the CME/Loco that detail of utilisation of parts of Rs 88.77 million and evidence of utilisation of tools and test Instruments be provided to Audit within a week. It was further directed that clarification may also be given that tools and test instruments purchased under both the projects were different in nature. No record was provided to Audit for verification till finalisation of this report.

Audit recommends that responsibility may be fixed for unjustified inclusion of equipment already available in PLF and unnecessary procurement of spare parts, tools and test instruments.

4.3.6 Wasteful expenditure on Transfer of Technology - Rs 94.82 million

It was provided in the PC-I of the Project of procurement of 69 2000/3000 HP DE Locomotives that acquisition of technology and up-

gradation of skill is a continuous process. Pakistan Railway would be using the new technology for at least 10 years or so.

Pakistan Railways made following two agreements for Transfer of Technology to be utilised for local manufacturing of locomotives with a cost of Rs 94.82 million but these TOTs were not utilised:-

(Table-4)

Sr. No.	Contract No. and Date	Name of Firm	Expenditure on TOT (Rs in million)	Remarks
1	PR/2001/69 DEL dated 8.11.2001	M/s Dongfang Electric Corporation China	48.36	The supplier stated that many items were outsourced therefore they could not provide instructions for their manufacturing. TOT was not utilised for subsequent manufacturing of locomotives.
2	DP/5 Locomotives/2013 dated 03.06.2013	M/s CSR Ziyang Co. Ltd China	46.46	TOT was procured without any future forecast because there was no project in pipeline for local manufacturing of ZCU locomotives by utilising this technology. Just after purchase of this TOT, PR procured 55 completely built locomotives from M/s GE USA.

1. (US \$ 805,920 x 60 = Rs 48.36 million)

2. (US \$ 446,775 x 104 = Rs 46.46 million)

The matter was taken up with the management in May 2016. In May 2017 it replied against Sr. No. (1) that TOT for some items was not supplied by the contractor. PLF made 30 modifications in DPU locomotives by using TOT. Against Sr. No. (2), the management replied that TOT was acquired for repair of accidental locomotives. The reply was not based on facts because TOTs were acquired for local manufacturing of locomotives in the PLF and foreign/local trainings were included in the above contracts for maintenance staff.

DAC in its meeting held on 29.05.2017, directed the PO that detail of technology utilised be got verified from Audit within a week time. Record was not provided for verification till finalisation of this report.

Audit recommends that responsibility may be fixed for obtaining incomplete TOT not used for subsequent manufacturing of locomotives.

4.3.7 Irregular expenditure due to splitting of purchases - Rs 20.78 million

Rule 9 of Public Procurement Rules-2004 provides that a procuring agency shall announce in an appropriate manner all proposed procurements for each financial year and proceed accordingly without any splitting or re-grouping of the procurement so planned.

During audit it was observed that different purchase orders valuing Rs 20.78 million were placed by PLF for procurement of Steel Plate, Steel Round Bar, Enameled Copper Wire etc. during the period from October 2014 to December 2015 by splitting the requirements. This also indicated that PLF had no annual procurement plan. Thus, irregular expenditure of Rs 20.78 million was incurred by splitting the purchases.

The matter was taken up with the management in May 2016. It was replied in May 2017 that due to discontinuity in manufacturing of locomotives, the work orders of other department/divisions were obtained to utilise the factory's permanent labour. Work requisitions were received one by one and material was procured as per requirement. The reply was not satisfactory because PLF management had list of work requisitions at one particular time yet material procurement was not planned accordingly.

DAC in its meeting held on 29.05.2017, directed the PO that revised/ comprehensive reply be provided to Audit within a week time stating the reasons for splitting up of purchases. No reply was received till finalisation of this report.

Audit recommends that responsibility may be fixed for splitting up purchases.

4.3.8 Wasteful expenditure on foreign training – Rs 13.45 million

As per Article 21 (Training) of contract No. PR/2001/69 DEL dated 8th November, 2001 executed between Ministry of Railways and M/s Dongfang Electric Corporation for supply and manufacture of 69 DE Locomotives, the basic schedule and nature of training was to be determined by the seller in consultation with the purchaser. M/s DEC intimated on 7th March, 2003 that they would arrange operating practice in the simulation cab in training centre of their works and arrange running test on Chinese Locomotives of their works for PR drivers.

During audit it was observed that other employees were sent for training abroad instead of sending locomotive drivers. Had management acted upon the schedule provided by the seller for foreign training of locomotive drivers the operational efficiency of DPU locomotives could have been better. Thus, wasteful expenditure of Rs 13.45 million (22 man-months x US\$ 7,190/man-month x Rs 85) was incurred on the training of employees instead of drivers.

The matter was taken up with the management in May 2016. It was replied in May 2017 that all locomotives were similar in nature, therefore, foreign training of loco drivers was not necessary. Training of maintenance and manufacturing staff was necessary, therefore they were nominated for foreign training. PR had Walton Academy for training of loco drivers. The reply was not satisfactory because drivers were not sent for training in simulation cab in training centre of manufacturer's works which was recommended by the contractor as per terms of contract to enhance knowledge and understanding of loco drivers on new DPU locomotives.

DAC in its meeting held on 29.05.2017, directed the PO that revised reply, along with documentary evidence, showing that Instructor drivers were sent for training be provided to Audit. No reply was received till finalisation of this report.

Audit recommends that responsibility may be fixed for not sending locomotive drivers as per terms of contract.

4.3.9 Non-imposition of LD charges in the project of 5 DE Locos – Rs 11.95 million

As per Article-17 of the contract No. DP/5 Locomotives/2013 dated 3rd June, 2013, in the event of the seller's failure to ship the material in accordance with the schedule as set forth in Article-6, (Delivery), thereof, the purchaser might collect from the seller, as liquidated damages, the sum of half percent of the FOB price of each consignment of material so delayed for each and every week of such delay except for the first week for the purposes hereto part of a week would be treated as a full week. Liquidated damages for each consignment were not to exceed five percent of the FOB price of such consignment.

During audit it was observed that maintenance spares valuing Rs 238.98 million were required to be supplied up to February 2015 but contractor failed to supply the material in time. First consignment of maintenance spares valuing Rs 69.95 million was received in PLF on 03.07.2015 after delay of 5 months. But LD charges amounting to Rs 11.95 million were not recovered.

The matter was taken up with the management in May 2016. It was replied in May 2017 that LC had been extended with imposition of LD charges which would be recovered from the firm in due course of time. The reply was not acceptable because despite lapse of considerable period of time, fate of supply of remaining material and recovery of LD charges was not intimated to Audit.

DAC in its meeting held on 29.05.2017, referred the para to the Director/ Procurement and directed that revised reply be provided within a week. No reply was received till finalisation of this report.

Audit recommends that LD charges may be recovered from the contractor for inordinate delay in the supply of maintenance spares.

4.3.10 Loss due to unjustified inclusion of training cost in the project of 5 DE Locomotives- Rs 5.72 million

According to Chapter 4 of Guidelines for Project Management of Planning Commission, two main principles to be observed are economy and regularity. Project Directors have to ensure and adhere to the above financial principles.

Scrutiny of the record revealed that an amount of US\$ 55,000 was included for training in the contract of 5 DE locomotives in June 2013. Inclusion of training in the contract was unjustified because an amount of US\$ 124,908 was included in the same contract for technical assistance and training in Pakistan to PR personnel in designing, manufacturing and maintenance technology of supplied locomotives. Further, PR had previously incurred expenditure of US\$ 165,000 (for 30 man months) on training of PR personnel under another contract for 25 locomotives in December 2012 executed between same two parties for supply of same type of locomotives. Thus, PR suffered loss of Rs 5.72 million due to unjustified inclusion of training cost in the contract.

The matter was taken up with the management in May 2016. It was replied in May 2017 that training cost was included in the contract of 5 DE locomotives project for understanding manufacturing process whereas in contract of 25 DE locomotives training cost was included for maintenance staff only. The reply was not tenable because PR had incurred an expenditure of US \$ 124,908 for local training of PLF personnel. The engineers of supplier supervised production of 5 ZCU locomotives in PLF and they also trained the staff on the job.

DAC in its meeting held on 29.05.2017, was informed that both the trainings were different and imparted to different personnel. DAC directed the PO to get the details of both the trainings verified from Audit.

During verification, management failed to provide details of both the trainings. Only copies of training clauses of both the projects were provided. Training clauses in both the contracts were same and there was no differentiation of maintenance and operational staff.

Audit recommends that responsibility should be fixed for unjustified inclusion of training costs in both projects involving procurement of similar type of locomotives. The amount of loss should also be recovered from those held responsible.

4.3.11 Loss due to purchase of material at higher rate - Rs 4.37 million

Rule 4 of Public Procurement Rules-2004 stipulates that procuring agencies, while engaging in procurements, shall ensure that the procurements are conducted in a fair and transparent manner, the object of procurement brings value for money to the agency and procurement process is efficient and economical.

During audit it was observed that PR suffered loss of Rs 4.37 million due to procurement of material at higher rate as detailed below:-

- i. A Traction Alternator was purchased at a cost of US\$ 141,935 under contract dated 3rd June, 2013 executed with M/s CSR Ziyang China whereas same item was purchased at a cost of US \$ 129,032 in another contract dated 7th December, 2012 executed with the same contractor. Thus, PR suffered loss of Rs 1.34 million (US \$ 12,903 x Rs 104) due to procurement of Traction Alternator at higher rate.
- ii. PLF management was purchasing steel items at an average rate of Rs 139 per kg whereas in a purchase order No.PR/LF/2015-693/LP dated 23.12.2015 a contractor provided the same steel material at the rate of Rs 117/kg. Thus, PR suffered loss of Rs 3.03 million due to purchase of steel at higher rates.

The matter was taken up with the management in May 2016. Against S.No. (i), the management replied in May 2017 that catalogue number of Traction Alternator was different in both contracts. Against S.No. (ii), management replied in June 2016 that rates were higher during the year 2013-14 due to higher oil prices, which were reduced in

subsequent years. The reply against S. No.(i) was not satisfactory because locomotives in both the contracts were of similar nature, therefore, Traction Alternators were similar but category numbers were changed by the contractor, subsequently, for all the items. The reply against S.No. (ii) was also not satisfactory because in most of the purchase orders the difference of time was only one to two months but difference in price was much higher.

DAC in its meeting held on 29.05.2017, referred the para relating to the Traction Alternator to the Director/Procurement for revised reply. Further, DAC directed the PO that revised reply regarding purchase of steel be provided to Audit. No reply was received till finalisation of this report.

Audit recommends that matter may be inquired to fix responsibility for purchase of material at higher rates and action may be taken against those held responsible.

4.4 Construction and Works

Audit observed that a work of raising boundary walls of boys and girls schools in PLF was carried out through a contractor without following PPRA Rules. The matter was taken up with the management in May 2016. Management replied in May 2017 that work was started in urgency after terrorist attack in Army Public School Peshawar. Some other works were also included through addendum slip due to poor condition of schools. On satisfactory explanation the observation was settled after verification by Audit.

4.5 Asset Management

PLF management was required to safeguard and maintain plant & machinery installed in the factory for proper and smooth working of the factory. Inventory management also required attention of management to avoid wastage of scarce resource and blockage of capital.

Irregularity relating to the assets management in PLF is elaborated in the following paragraph:-

4.5.1 Blockage of capital due to non-repair of Plant & Machinery – Rs 139.49 million

As per job description of Works Manager/LF, he is responsible for proper maintenance of plant & machinery for which he will be assisted by the Assistant Works Manager/General and Electrical Branch.

During special audit it was noticed that four costly machines of PLF were lying defective since long. Bogie milling machine was the important machine of PLF and due to its non-availability, PLF had to take the help of CDL Shop Rawalpindi to carry out its works. PLF management failed to maintain the plant and machinery valuing Rs 139.49 million installed in the factory. This resulted in blockage of capital of Rs 139.49 million.

The matter was taken up with the management in May 2016. It was replied in May 2017 that two machines i.e. compressor and electric furnace had been repaired. Bogie Milling Machine and Induction Hardening Machine would be repaired in the financial year 2017-18. The reply was not tenable because these machines had been out of order since long and no serious effort was made for putting these machines in operation.

DAC in its meeting held on 29.05.2017, directed the PO that record of repairs done be got verified from Audit and repair of remaining two machines be expedited.

During verification, management reply was found unsatisfactory as only one machine i.e. electric furnace got repaired in October 2016. Remaining three machines were lying defective.

Audit recommends that the machines should be got repaired at the earliest and responsibility be fixed for showing negligence in getting these machines repaired.

4.6 Monitoring and Evaluation

As per Guidelines for Project Management PLF management was required to prepare annual performance reports of locomotives

manufactured by them under different projects. Furthermore, all factory operations were required to be monitored and evaluated properly and timely to ascertain weaknesses which ultimately could result in wastage of resources. Following paras indicates irregularities in this regard:-

4.6.1 Loss of potential earnings due to held-up DPU-20/30 locomotives – Rs 17,082.75 million

Annexure-X of PC-I of the Project of Procurement of 69 Diesel Electric Locomotives dated April 2001 provided that annual expected earnings of these locomotives would be Rs 2,822.32 million.

During audit it was noticed that these locomotives started developing faults from the first year of service and their deletion from books started just after two years i.e. 2005-06. All 69 DPU-20/30 locomotives remained held-up for long period. This resulted in loss of potential earnings of Rs 17,082.75 million during the period from January 2009 to May 2016 as detailed in annexure-3.

The matter was taken up with the management in June 2016. It was replied in August 2016 that an inquiry regarding procurement of 69 DPU locomotives was under process with NAB.

DAC in its meeting held on 29.05.2017, directed the CME/loco and COPS to give joint reply within a week to Audit. No reply was received till finalisation of this report.

Audit recommends that responsibility should be fixed for procurement of inferior quality locomotives and their poor maintenance causing loss to the PR. Efforts may be made to put these locomotives back into service without further delay.

4.6.2 Loss of potential earnings due to delay in repair of locomotives - Rs 2,783.64 million

Para 12 (a) of Chapter VI of Pakistan Railways Mechanical Manual stipulates that as far as possible, materials required for repairs to an engine must be obtained before the engine is stopped, in order that the engine may not be laid up longer than necessary.

Scrutiny of record revealed that 70 locomotives received in PLF from other Railway Departments were repaired with abnormal delay up to 1180 days. In some cases, target dates were fixed by the PLF management but locomotives were turned out after expiry of target dates. In many other cases no target date was fixed to turnout the locomotives due to which they were detained abnormally. Thus, PR suffered loss of potential earnings of Rs 2,783.64 million due to abnormal delay in repair of locomotives as detailed in Annexure-4.

The matter was taken up with the management in May 2016. It was replied in June 2016 that repair of locomotives was delayed due to non-provision of imported items by the concerned divisions. The reply was not satisfactory because due to negligence and poor management these locomotives were unnecessarily held-up causing loss to the PR.

DAC in its meeting held on 29.05.2017, directed the PO to provide the detail of 70 Locos that were stated to be timely repaired and also late supply of FOB parts be got verified from Audit. Record was not provided to Audit for verification till finalisation of this report.

Audit recommends that matter may be inquired to fix responsibility for inordinate delay in repairing of locomotives.

4.6.3 Non-completion of works due to poor performance – Rs 679.06 million

Para 1248 of Pakistan Railway Code for the Mechanical Department (Workshops) provides that all delays in the advice of date of completion by the Mechanical Department should be regularly taken up. The works on which no expenditure is incurred for three consecutive months should be specially brought to the notice of the Mechanical Department and that Department should be asked to intimate whether the work had been completed and when a completion advice was expected.

PLF obtained different work orders from other department of Pakistan Railways for manufacturing of locomotive spare parts but work orders pertaining to the years 2010-11 to 2014-15 valuing Rs 386.59 million were not completed up to March 2016.

Similarly, Project Director, Special Repair of 150 DE Locomotives placed work requisitions for manufacturing of spare parts valuing Rs 425.58 million during the period from February 2014 to June 2015, out of which only work orders valuing Rs 133.11 million were completed up to March 2016. This led to delay in completion of the project. Thus, due to poor performance of the PLF, spare parts valuing Rs 679.06 million were not manufactured in time.

The matter was taken up with the management in May 2016. The management replied in May 2017 that spare parts were being manufactured as and when demanded by concerned divisions. PLF was established in 1993 based on limited scope of locomotive manufacturing and facilities provided were not intended to manufacture spare parts on mass scale. The reply was not factual because PLF was established for manufacturing of 25/50 locomotives and spare parts on single/double shift basis. PLF had only one project of manufacturing of 5 ZCU locomotives during the above noted period of six years.

DAC in its meeting held on 29.05.2017, directed the PO to furnish revised reply with reference to 150 DE Locos to Audit within a week. No reply was received till finalisation of this report.

Audit recommends that PLF should be managed on commercial lines as provided in PC-I of the factory and production/performance of the factory may be improved. Efforts should also be made to complete the work orders without further delay.

4.6.4 Loss due to inordinate increase in factory overhead of PLF – Rs 121.45 million

As per Para 807(1) of Pakistan Railway General Code, every public officer should exercise the same vigilance in respect of expenditure incurred as a person of ordinary prudence would exercise in respect of the expenditure of his own money.

Scrutiny of the Proforma On-cost of PLF Risalpur, which included electricity charges of shops, salary and over time of drivers, common user

items for shops, waste for cleaning, Electric and Civil Works, increased abnormally during the last five years as detailed in annexure-5.

There was very high increase in these costs during the year 2011-12, 2013-14 and 2014-15 as compared to previous years. This expenditure should have been controlled in order to avoid loss to PLF. Thus, PLF incurred extra expenditure of Rs 121.45 million on controllable shop on-costs during the year from 2010-11 to 2014-15.

The matter was taken up with the management in May 2016. It was replied in May 2017 that during the period from 2010-11 to 2014-15 no proper project was assigned to PLF and expenditure on overheads was not avoidable. The reply was not satisfactory because in absence of any project the increase in shop on-costs was not justified.

DAC in its meeting held on 29.05.2017, directed the PO that year-wise, head-wise proper analysis may be done and revised reply be given within one month. No reply was received till finalisation of this report.

Audit recommends that reasons may be explained for inordinate increase in shop on-cost during the last five years and efforts should be made to control this expenditure to avoid further losses to the PLF.

4.6.5 Heavy expenditure on HSD Oil of vehicles - Rs 9.07 million

As per Para 807(1) of Pakistan Railway General Code, every public officer should exercise the same vigilance in respect of expenditure incurred as a person of ordinary prudence would exercise in respect of the expenditure of his own money. Further, in order to control the expenditure on the POL, PR management had fixed limits of POL for all vehicles in all the Railway Divisions

During audit it was noticed that heavy amount of HSD oil was being utilised for vehicles of PLF. The quantity of consumed HSD oil kept increasing year by year. During the year 2012-13, 2013-14, 2014-15 use of HSD oil was 27343, 29357 and 29575 liters, respectively and during the year 2015-16 (up to April 2016) 27055 liters HSD Oil was used by vehicles of PLF. The above state of affairs indicated that there was no internal control for the use of vehicles causing increase in the expenditure

of HSD oil every year. This resulted in exorbitant expenditure of Rs 9.07 million on the HSD oil only during the period from July 2012 to April 2016.

The matter was taken up with the management in May 2016. It was replied in May 2017 that PLF maintained a huge fleet of vehicles for transportation of material, students and staff, therefore, consumption of fuel was justified. The reply was not acceptable because increasing trend of HSD oil showed weak management controls causing loss to the Government.

DAC in its meeting held on 29.05.2017, directed the PO to provide documentary evidence to Audit showing the justification of increasing trend of usage of HSD oil within one month. No reply was received till finalisation of this report.

Audit recommends that responsibility should be fixed for heavy use of HSD oil and internal control in the shape of per month limit for use of POL be fixed for each vehicle.

4.6.6 Non-preparation of Annual Operational Reports (PC-V Proforma) of the Project of Procurement/Manufacture of 69 DPU Locomotives

Para 3.37 of the Guidelines for Project Management issued by the Projects Wing, Planning Commission, Government of Pakistan, Islamabad provides that after closure of the project, annual operation reports have to be submitted to the Planning & Development Division over a period of five years on PC-V Proforma.

During audit it was noticed that accounts of Project of Procurement/Manufacture of 69 DPU Locomotives were closed in the year 2010-11 but annual operation reports on PC-V Proforma were neither prepared nor submitted to the Planning & Development Division. Thus, all stakeholders remained unaware of the actual performance of project executed with heavy investment of Rs 7,723.23 million.

The matter was taken up with the management in May 2016. It was replied in May 2017 that after closure of the project only one annual PC-V report was due which was submitted to the Chief Project & Planning Officer, Pakistan Railways in September 2015. The reply was not tenable because annual operation reports of this project for a period of five years after closure of the project were not submitted to the Planning & Development Division.

DAC in its meeting held on 29.05.2017, directed the PO to send PC-V proforma to Audit within two months. No reply was received till finalisation of this report.

Audit recommends that responsibility may be fixed for non-preparation of PC-V Proforma of the project and arrangement be made for submission of PC-V Proforma to the Planning & Development Division.

4.7 Environment

While procuring/manufacturing 5 ZCU locomotives during the year 2013, it was stated by PLF management that these locomotives would be environment friendly as they emit less carbon. Thus, PR had an opportunity to earn carbon credit by registering project with Ministry of Climate Change and relevant UN/International Agency dealing with Carbon Credit and Clean Development Mechanism but they failed to do so.

4.7.1 Loss on account of non-utilization of Carbon Credit

In the minutes of the CDWP meeting held on 20th October, 2014, it was decided that the project of manufacture of five 3000 HP Diesel Electric Locomotives would be registered with the Ministry of Climate Change and relevant UN/International Agency dealing with Carbon Credit and Clean Development Mechanism. Induction of these five locomotives would earn Carbon Credit for PR as it would reduce carbon emissions.

Scrutiny of record revealed that project of procurement of material for local manufacturing of 5 DE Locomotives was neither registered with the Ministry of Climate Change nor with relevant UN/International Agency to earn Carbon Credit despite the fact that all five locomotives were put into service during the period from January to April 2015. It was

evident from the above state of affairs that PR management failed to utilise the opportunity to earn revenue from Carbon Credit. This resulted in loss to the PR due to non-utilization of carbon credit due against purchase of locomotive emitting less carbon.

The matter was taken up with the management in May 2016. It was replied in May 2017 that carbon test was required to be carried out by the manufacturer. The contractor had been asked to provide record of carbon test. The reply was not satisfactory because project was still not registered for Carbon Credit despite lapse of two years after decision of CDWP.

DAC in its meeting held on 29.05.2017, directed the PO to ensure utilisation of Carbon Credit within two months. No progress was reported by the management till finalisation of this report.

Audit recommends that this project should be got registered with the concerned agencies to obtain benefits of carbon credit.

4.8 Overall Assessment

Pakistan Locomotive Factory, Risalpur was established with the objective of local manufacturing of locomotives to achieve self-sufficiency, standardization of locomotives and saving of foreign exchange. PLF failed to achieve these objectives as four different technologies belonging to Japan, America and China were obtained for local manufacture of locomotives in PLF. Hence neither self-sufficiency nor standardization was accomplished. The objective of more than 50% local contribution in cost of locomotives was also not attained. Therefore, heavy amount in foreign exchange was incurred to procure CKD kits and spare parts.

- i. **Relevance:** PLF was established by the Government of Pakistan for local manufacturing of locomotives to achieve self-sufficiency, standardization of locomotives and saving of foreign exchange. This project was initiated to promote Pakistan Railways and improve its performance but it failed in these aspects.
- ii. **Efficacy:** PLF was not being utilised for the purpose for which it was created as it was surviving on smaller works

of different departments i.e. repair of locomotives and manufacturing of spare parts. It was decided at the time of establishment of PLF that it would be operated as self-sustaining entity and it would generate revenue for its operation whereas PLF was dependent on Ministry of Railways for allocation of funds and projects for local manufacturing of locomotives.

- iii. **Economy:** Many instances of violation of PPRA Rules 2004 were observed during audit. Purchases were being made without any procurement plan by splitting requirement. Instances of purchases at higher rate were also observed.
- iv. **Effectiveness:** PLF had to manufacture 25 locomotives per annum on single shift basis which could be enhanced to 50 locomotives per annum with double shifts. Contrarily, PLF manufactured only 102 locomotives, during the period from 1993-94 to 2014-15, against the target of 489 locomotives on single shift.
- v. **Compliance with Rules:** Some serious issues showing non-compliance of rules and regulations were observed which included utilisation of PSDP funds for revenue works, engagement of staff in excess of sanctioned strength and procurement of material by splitting requirements etc.
- vi. **Performance Rating of Project:** Unsatisfactory
- vii. **Risk Rating of Project:** Medium

5. CONCLUSION

PLF Risalpur was established in 1993 with the capacity to manufacture 25 locomotives per annum on single shift basis which could be enhanced to 50 locomotives per annum in two shifts. PLF manufactured only 102 locomotives, during the period from 1993-94 to 2014-15 and percentage of local share in cost of each locomotive manufactured was only 25% against the recommended local share of 50%.

PLF was established to achieve standardization of locomotives in PR leading to less investment on maintenance of their spare parts' inventories. This objective was also not achieved and four agreements for transfer of altogether different technologies were made by the PR for manufacturing of locomotives in PLF. It was observed that PLF had smaller projects of locomotive manufacturing and last two technologies of DPU and ZCU locomotives obtained for local manufacturing of DE locomotives were not utilised. This was against the objective of the establishment of the PLF.

Keeping in view the best practices in the region PR may enter into a long-term agreement with any foreign locomotive manufacturing firm for local manufacture of locomotives with higher percentage of local components. This would improve the availability of locomotives in the PR besides approximately all the objectives of PLF i.e. standardisation of locomotives, less investment on spare parts, saving of foreign exchange, job opportunities for local residents etc. would be achieved.

5.1 Key Issues for the Future

PLF was established to operate as self-sustaining entity but since its establishment in the year 1993, it was dependent on the funds and projects allocated by Ministry of Railways. It is recommended that PLF may be run on commercial lines so that it could generate its own funds. This was the most important factor for achievement of objectives of PLF.

5.2 Lessons Identified

PLF should be operated as self-sustaining entity in the shape of a company or joint venture with any foreign locomotive manufacturer to avoid dependence on Ministry of Railways.

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We wish to express our appreciation to the Management and staff of Pakistan Locomotive Factory, Risalpur for the assistance and cooperation extended to the auditors during this assignment.

Annexure-1**Statement showing irregular utilization of Funds by PLF**

Sr. No.	Project	Period	Actual Expenditure (Rs in million)
1	5 DE Locos Hitachi	1991-92 to 1993-94	51.024
2	18 DE Locos Hitachi	1993-94 to 1997-98	239.362
3	30 DE Locos AGE	1996-97 to 2002-03	288.287
4	69 DE Locos DPU 20/30	2001-02 to 2010-11	653.672
5	5 DE Locos ZCUP	2007-08 to 2014-15	347.446
6	75 DE Locos	2007-08 to 2014-15	1,070.342
PSDP Funds used by PLF			2,650.133
Revenue budget used from July to December 2015			15.960
Total			2,666.09

Annexure-2

Statement showing the actual/maximum percentage of contribution made by the PLF Risalpur

(1)	Currency (2)	Rate Per unit (3)	Difference in cost of CBU and SKD/CKD locos (4)	No. of Locos (5)	Total (3x5) (6)	% Difference in cost of CBU and SKD/CKD locos (4/3x100) (7)	% of deletion to be achieved (8)	Difference (8-7) (9)	Extra cost incurred (6x9) (10)	Conversion rate (11)	Total value of foreign exchange used in excess due to less deletion (Rs) (12)
<u>DPU-20 DE Locomotives procured from Dong Fang China</u>											
CBU Per unit cost	US\$	1,289,624		7	9,027,365						
SKD per unit cost	US\$	1,106,672	182,952	8	8,853,375	14.19%	50%	35.81%	3,233,020	60	193,981,219
CKD per unit cost	US\$	977,417	312,207	10	9,774,167	24.21%	50%	25.79%	2,328,234	60	139,694,069
<u>DPU-30 DE Locomotives procured from Dong Fang China</u>											
CBU Per unit cost	US\$	1,435,662		8	11,485,296						
SKD per unit cost	US\$	1,217,952	217,710	16	19,487,227	15.16%	50%	34.84%	4,000,965	60	240,057,924
CKD per unit cost	US\$	1,068,756	366,906	20	21,375,127	25.56%	50%	24.44%	2,807,403	60	168,444,177

<u>AGE-30 DE Locomotives procured from GE, USA</u>											
CBU Per unit cost	Yen	229,778,700		10	2,297,787,000						
SKD per unit cost	Yen	211,590,180	18,188,520	10	2,115,901,800	7.92%	35%	27.08%	622,340,250	0.3589	223,357,916
CKD per unit cost	Yen	197,871,720	31,906,980	10	1,978,717,200	13.89%	35%	21.11%	485,155,650	0.3589	174,122,363
											1,139,657,666

Annexure – 3/A

Statement showing the loss of potential earnings due to failure and held-up of DPU-30 locomotives

(Rs in million)

Sr. No.	Loco No.	Date of Put in Service	Date of Held-up	Held-up till	Total KM Served	Number of failures	Failure Days	Held-up Days upto May 2016	Inordinate delays in Schedules	Total Held-up days	Revenue per day	Potential revenue loss
1	6101	2-Sep-03	30-Aug-09	31-May-16	1,068,153	20	102	2,466	351	2,919	0.120537	351.85
2	6102	2-Sep-03	13-May-10	31-May-16	685,222	33	153	2,210	38	2,401	0.120537	289.41
3	6103	2-Sep-03	8-Sep-09	31-May-16	1,032,778	37	138	2,457	98	2,693	0.120537	324.61
4	6104	2-Sep-03	1-May-10	31-May-16	1,213,124	45	156	2,222	252	2,630	0.120537	317.01
5	6105	2-Sep-03	19-Feb-11	31-May-16	1,394,978	37	138	1,928	279	2,345	0.120537	282.66
6	6106	2-Sep-03	16-May-10	31-May-16				2,207		2,207	0.120537	266.03
7	6107	2-Sep-03	5-May-11	31-May-16	906,806	34	133	1,853	1,067	3,053	0.120537	368.00
8	6108	2-Sep-03	28-May-10	31-May-16	1,167,445	42	161	2,195	290	2,646	0.120537	318.94
9	6109	21-Jun-04	16-Jul-09	31-May-16	830,056	32	132	2,511		2,643	0.120537	318.58
10	6110	10-Jul-14	14-Feb-12	31-May-16	1,195,956	33	157	1,568	610	2,335	0.120537	281.45
11	6111	22-Jul-04	31-Mar-10	31-May-16	901,065	22	77	2,253	455	2,785	0.120537	335.70
12	6112	22-Aug-04	7-Aug-13	31-May-16	1,114,072	31	217	1,028		1,245	0.120537	150.07
13	6113	12-Sep-04	8-Apr-13	31-May-16	1,492,940	57	350	1,149	139	1,638	0.120537	197.44
14	6114	1-Oct-04	21-Apr-14	31-May-16	1,113,037	24	125	771		896	0.120537	108.00
15	6115	5-Nov-04	8-Jul-15	31-May-16	1,318,703	39	141	328		469	0.120537	56.53
16	6116	3-Jan-05	6-May-13	31-May-16	1,390,526	52	136	1,121	62	1,319	0.120537	158.99

17	6117	13-Jun-05	7-Aug-15	31-May-16	1,571,197	85	638	298	309	1,245	0.120537	150.07
18	6118	22-Jul-05	1-Jul-12	31-May-16	934,467	32	173	1,430	434	2,037	0.120537	245.53
19	6119	30-Aug-05	12-Jul-15	3-Sep-15	1,031,400	26	85	53	1,023	1,161	0.120537	139.94
20	6120	29-Sep-05	22-Jun-10	31-May-16	830,033	24	186	2,170		2,356	0.120537	283.99
21	6121	21-Oct-05	12-May-12	31-May-16	540,377	10	97	1,480	77	1,654	0.120537	199.37
22	6122	21-Oct-05	26-Mar-09	31-May-16	754,793	7	23	2,623		2,646	0.120537	318.94
23	6123	29-Dec-05	23-Jan-09	31-May-16	658,621	11	41	2,685		2,726	0.120537	328.58
24	6124	28-Jan-06	20-Aug-11	31-May-16	924,538	30	148	1,746	134	2,028	0.120537	244.45
25	6125	9-Aug-07	30-Sep-11	31-May-16	847,011	20	113	1,705	178	1,996	0.120537	240.59
26	6126	30-Aug-07	8-Oct-11	31-May-16	624,784	19	224	1,697	168	2,089	0.120537	251.80
27	6127	9-Sep-07	22-Sep-11	31-May-16	725,720	51	228	1,713	402	2,343	0.120537	282.42
28	6128	22-Sep-07	24-Aug-12	22-Dec-15	747,668	27	128	1,215	625	1,968	0.120537	237.22
29	6129	11-Oct-07	11-Dec-11	31-May-16	904,522	47	246	1,633	683	2,562	0.120537	308.82
30	6130	3-Nov-07	29-Apr-12	3-Mar-16	718,498	22	138	1,404	381	1,923	0.120537	231.79
31	6131	13-Nov-07	13-Oct-12	31-May-16	647,313	33	156	1,326	282	1,764	0.120537	212.63
32	6132	29-Nov-07	18-Jul-12	6-Apr-16	692,449	21	81	1,358	331	1,770	0.120537	213.35
33	6133	7-Dec-07	15-Jul-12	31-May-16	128,443	14	59	1,416	126	1,601	0.120537	192.98
34	6134	22-Dec-07	18-Aug-11	31-May-16	730,851	31	236	1,748	200	2,184	0.120537	263.25

35	6135	12-Jan-08		31-May-16		54	312		159	471	0.120537	56.77
36	6136	29-Jan-08	8-Jun-14	9-May-16	1,013,968	34	160	701	299	1,160	0.120537	139.82
37	6137	12-Feb-08	27-Aug-14	31-May-16	759,034	52	172	643	273	1,088	0.120537	131.14
38	6138	23-Feb-08	4-Aug-14	31-May-16		54	209	666	365	1,240	0.120537	149.47
39	6139	8-Mar-08	18-Jun-11	31-May-16	603,687	39	143	1,809	218	2,170	0.120537	261.57
40	6140	3-Apr-08	21-Nov-11	31-May-16	906,947	20	83	1,653		1,736	0.120537	209.25
41	6141	8-Apr-08	13-Dec-09	31-May-16	312,711	31	118	2,361	887	3,366	0.120537	405.73
42	6142	30-Apr-08	1-Apr-11	31-May-16	633,568	28	93	1,887	128	2,108	0.120537	254.09
43	6143	16-Jun-08	23-Jun-10	31-May-16	461,613	18	49	2,169		2,218	0.120537	267.35
44	6144	24-Jul-08	14-Nov-14	31-May-16	612,972	35	133	564	652	1,349	0.120537	162.60
												10,508.78

Annual revenue per loco per annum as per PC-I of the Project of 69 DE Locos dated April, 2001 = Rs 43.996

Annexure - 3/B**Statement showing the loss of potential earnings due to failure and held-up of DPU-20 locomotives****(Rs in million)**

Sr. No.	Loco No.	Date of Put in Service	Date of Held-Up	Held up till	Total KM Served	Number of failures	Failure Days	Held-up Days upto May 2016	Total Held-up days	Revenue per day	Potential revenue loss
1	6201	20-Oct-03	8-Nov-10	31-May-16	1,135,665	35	126	2,031	2,157	0.120537	260.00
2	6202	20-Oct-03	29-Apr-14	31-May-16	1,290,294	46	923	763	1,686	0.120537	203.23
3	6203	20-Oct-03	3-Oct-12	31-May-16	1,075,079	24	626	1,336	1,962	0.120537	236.49
4	6204	20-Oct-03	30-Jun-09	31-May-16				2,527	2,527	0.120537	304.60
5	6205	20-Oct-03	6-Nov-10	31-May-16	1,233,456	47	140	2,033	2,173	0.120537	261.93
6	6206	20-Oct-03	16-Aug-13	31-May-16	1,050,094	42	2,239	1,019	3,258	0.120537	392.71
7	6207	20-Oct-03	20-Oct-10	31-May-16	1,152,285	33	116	2,050	2,166	0.120537	261.08
8	6208	10-Jun-06	23-May-11	31-May-16	902,495	38	144	1,835	1,979	0.120537	238.54
9	6209	5-Jul-06	19-Dec-10	31-May-16	688,514	21	396	1,990	2,386	0.120537	287.60
10	6210	29-Jul-06	30-Dec-12	31-May-16	447,090	25	191	1,248	1,439	0.120537	173.45
11	6211	19-Aug-06	13-Jun-11	31-May-16	608,964	30	469	1,814	2,283	0.120537	275.19

12	6212	26-Aug-06	9-Sep-11	31-May-16	722,499	44	168	1,726	1,894	0.120537	228.30
13	6213	4-Sep-06	30-Jul-09	31-May-16	408,594	22	382	2,497	2,879	0.120537	347.03
14	6214	20-Sep-06	2-Nov-10	31-May-16	566,478	19	323	2,037	2,360	0.120537	284.47
15	6215	3-Oct-06	10-Apr-14	31-May-16	807,321	59	1,052	782	1,834	0.120537	221.06
16	6216	24-Nov-06	7-Dec-10	31-May-16	591,641	16	283	2,002	2,285	0.120537	275.43
17	6217	16-Dec-06	14-Mar-09	31-May-16	313,727	12	135	2,635	2,770	0.120537	333.89
18	6218	30-Dec-06		31-May-16	735,967	61	654		654	0.120537	78.83
19	6219	26-Jan-07	2-Feb-10	31-May-16	542,326	7	110	2,310	2,420	0.120537	291.70
20	6220	10-Feb-07	2-Nov-10	31-May-16	523,413	21	329	2,037	2,366	0.120537	285.19
21	6221	22-Feb-07	13-Sep-11	31-May-16	687,322	23	189	1,722	1,911	0.120537	230.35
22	6222	2-Mar-07	25-Oct-10	31-May-16	591,596	22	226	2,045	2,271	0.120537	273.74
23	6223	31-Mar-07	29-Dec-09	31-May-16	531,670	11	41	2,345	2,386	0.120537	287.60
24	6224	7-Apr-07	21-Oct-09	31-May-16	456,646	11	45	2,414	2,459	0.120537	296.40
25	6225	31-May-07	11-Dec-10	31-May-16	328,918	6	36	1,998	2,034	0.120537	245.17
											6,573.97

Annual revenue per loco per annum as per PC-I of the Project of 69 DE Locos dated April, 2001 = Rs 43.996

Annexure-4

Statement showing the loss of potential earnings due to delay in repair of locomotives by the PLF

Sr. No.	D.E Loco No.	Type	Date of Receipt at PLF	Target Date	Date of Dispatch	W.O No. / Date	Days of detention	Loco earnings per day (Rs)	Loss of potential earnings (Rs)
1	6012	AGE-30	29.01.2008		Retained for Wiring Work	30.037.08/ 09.07.2008	990	152,729	151,201,710
					26.10.2010	30.035.10/ 28.05.2010		152,729	-
2	6133	DPU-30	27.02.2008	30.06.2008	07.08.2008	30.006.08/ 15.03.2008	37	152,729	5,650,973
			23.04.2009	08.06.2010	09.09.2010	30.030.10/ 20.05.2010	90	152,729	13,745,610
3	6210	DPU-20	03.03.2008		Retained for Wiring Work	30.040.08/ 09.07.2008	870	152,729	132,874,230
				22.06.2010	23.07.2010	30.033.10/28.05.2010		152,729	-
4	6119	DPU-30	14.03.2008		Retained for Wiring Work	30.039.08/ 09.07.2008	840	152,729	128,292,360
				20.06.2010	22.06.2010	30.032.10/ 28.05.2010		152,729	-

5	6115	DPU-30	17.03.2008	10.07.2008	25.09.2008	30.011.08/29.04.2008	75	152,729	11,454,675
			03.05.2010	15.06.2010	11.11.2010	30.029.10/20.05.2010	150	152,729	22,909,350
6	6112	DPU-30	20.03.2008		Retained for Wiring Work	30.008.08/14.04.2008	915	152,729	139,747,035
				30.09.2010	13.10.2010	30.034.10/28.05.2010		152,729	-
7	6121	DPU-30	23.03.2008	28.07.2008	22.09.2008	30.036.08/05.07.2008	84	152,729	12,829,236
			27.01.2009	29.06.2010	25.11.2010	30.028.10/20.05.2010	150	152,729	22,909,350
8	6128	DPU-30	17.10.2007	04.02.2009	13.03.2009	30.007.08/17.03.2008	39	152,729	5,956,431
9	6106	DPU-30	19.10.2007	30.08.2008	05.11.2009	30.038.08/09.07.2008	450	152,729	68,728,050
10	6225	DPU-20	02.11.2008	19.02.2009	11.06.2009	30.081.08/07.11.2008	129	152,729	19,702,041
11	5023	GRU-20	23.12.2008	31.03.2009	02.07.2009	30.002.09/03.01.2009	92	152,729	14,051,068

12	6126	DPU 30	11.01.2009	20.03.2009.	04.04.2009	30.016.09/3.01.2009	15	152,729	2,290,935
13	5101	RGE-20	24.01.2009		09.05.2011	30.025.09/13.02.2009	819	152,729	125,085,051
14	6011	AGE-30	08.12.2009		20.01.2011	30.111.09/16.12.2009	402	152,729	61,397,058
15	6008	AGE-30	05.09.2010		Retained for Recommissioning	30.137.10/09.09.2010		152,729	-
					11.01.2014	30.111.11/30.09.2011	1180	152,729	180,220,220
16	6214	DPU-20	09.11.2010		Retained for Recommissioning	30.179.10/06.11.2010	480	152,729	73,309,920
					04.03.2012	30.065.11/12.05.2011		152,729	-
17	5213	RGE-20	23.03.2011		09.02.2012	30.050.11/25.03.2011	345	152,729	52,691,505
18	8305	PHA-20	19.10.2011		26.09.2012	30.114.11/26.10.2011	350	152,729	53,455,150
19	8088	HBU-20	15.02.2012		21.03.2013	30.020.12/20.02.2012	390	152,729	59,564,310
20	5207	RGE-24	26.09.2012		05.01.2013	30.053.12/15.10.2012	90	152,729	13,745,610
21	6010	AGE-30	31.10.2012		09.02.2014	30.057.12/19.11.2012	460	152,729	70,255,340

22	4817	GMU-15	11.12.2013		01.05.2014	30.100.13/17.12.2013	145	152,729	22,145,705
23	6414	ZCU-20	12.10.2014	15.11.2014	12.01.2015	30.115.14/22.10.2014	60	152,729	9,163,740
24	6407	ZCU-20	23.11.2014	15.01.2015	Not repaired upto April 2016	30.127.14/01.12.2014	480	152,729	73,309,920
25	8309	PHA-20	26.04.2008	05.07.2008	14.07.2008	30.023.08/06.05.2008	9	152,729	1,374,561
26	5014	GRU-20	28.06.2008	15.07.2008	26.07.2008	30.034.08/01.07.2008	11	152,729	1,680,019
27	8317	PHA-20	14.07.2008	20.08.2008	12.09.2008	30.043.08/14.07.2008	22	152,729	3,360,038
28	5045	GRU-20	19.07.2008	04.08.2008	31.08.2008	30.061.08/14.07.2008	25	152,729	3,818,225
29	8034	HBU-20	05.09.2008	06.10.2008	10.10.2008	30.068.08/08.09.2008 30.09.2008	4	152,729	610,916
30	5011	GRU-20	22.09.2008	16.10.2008	30.10.2008	30.070.08/24.09.2008	14	152,729	2,138,206
31	8321	PHA-20	31.10.2008	27.11.2008	13.12.2008	30.079.08/07.11.2008	15	152,729	2,290,935
32	8074	HBU-20	05.11.2008	06.12.2008	21.12.2008	30.080.08/07.11.2008	15	152,729	2,290,935

33	8088	HBU-20	16.10.2008	12.12.2008	09.01.2009	30.082.08/19.11.2008	27	152,729	4,123,683
34	8070	HBU-20	21.11.2008	22.12.2008	20.1.2009	30.089.08/01.12.2008	28	152,729	4,276,412
35	8302	PHA-20	09.01.2009	25.02.2009	04.03.2009	30.003.09/31.01.2009	8	152,729	1,221,832
36	4723	GMU-30	19.06.2008	30.06.2008	05.07.2008	30.029.08/23.06.2008	5	152,729	763,645
37	6141	DPU-30	21.03.2011		23.05.2011	30.049.11/25.03.2011	60	152,729	9,163,740
38	8079	HBU-20	19.05.2011		29.07.2011	30.071.11/22.05.2011	70	152,729	10,691,030
39	8310	PHA-20	14.11.2011		20.01.2012	30.123.11/22.11.2011	67	152,729	10,232,843
40	8023	HBU-20	10.07.2013		28.09.2013	30.052.13/20.07.13	69	152,729	10,538,301
41	8027	HBU-20	01.12.2013		08.02.2014	30.089.13/05.12.2013	68	152,729	10,385,572
42	8014	HBU-20	28.12.2013		14.03.2014	30.003.14/08.01.2014	75	152,729	11,454,675

43	8009	HAU-20	03.02.2014		22.05.2014	30.024.14/07.02.2014	107	152,729	16,342,003
44	8007	HAU-20	09.02.2014		22.05.2014		103	152,729	15,731,087
45	5218	RGE-24	23.05.2014	31.07.2014	29.08.2014	30.081.14/30.05.2014	28	152,729	4,276,412
46	4925	GMCU-15	29.08.2014	18.09.2014	07.01.2015	30.110.14/03.09.2014	111	152,729	16,952,919
47	5210	RGE-24	02.09.2014	22.09.2014	12.10.2014	30.111.14/03.09.2014	20	152,729	3,054,580
48	8302	PHA-20	23.08.2011		12.11.2011	30.097.11/ 09.09.2011	79	152,729	12,065,591
49	8304	PHA-20	23.08.2011		07.02.2012	30.098.11/ 09.09.2011	166	152,729	25,353,014
50	8308	PHA-20	26.02.2012		08.05.2012	30.023.12/29.02.2012	72	152,729	10,996,488
51	6111	DPU-30	31.03.2010		19.08.2011	30.022.10/20.04.2010	499	152,729	76,211,771
52	6122	DPU-30	08.06.2010		08.10.2011	30.071.10/02.08.2010	480	152,729	73,309,920
53	6103	DPU-30	11.05.2011		15.02.2012	30.065.11/12.05.2011	270	152,729	41,236,830

54	8301	PHA-20	05.01.2013		16.11.2014	30.001.13/02.02.2013	690	152,729	105,383,010
55	6016	AGE-30	04.03.2012		29.03.2014	30.004.14/08.01.2014	755	152,729	115,310,395
56	6006	AGE-30	07.03.2012		19.02.2014	30.005.14/08.01.2014	720	152,729	109,964,880
57	6020	AGE-30	27.12.2013		22.05.2014	30.006.14/13.01.2014	150	152,729	22,909,350
58	6004	AGE-30	23.01.2014		09.06.2014	30.019.14/29.01.2014	135	152,729	20,618,415
59	6005	AGE-30	12.01.2014		01.05.2014	30.020.14/29.01.2014	116	152,729	17,716,564
60	6003	AGE-30	25.01.2014		23.08.2014	30.030.14/25.02.2014	210	152,729	32,073,090
61	6002	AGE-30	08.02.2014		23.7.2014	30.029.14/25.02.2014	165	152,729	25,200,285
62	6009	AGE-30	19.02.2014		09.07.2014	30.047.14/15.03.2014	160	152,729	24,436,640
63	6001	AGE-30	21.05.2014		21.08.2014	30.080.14/30.05.2014	90	152,729	13,745,610
64	6026	AGE-30	09.07.2014		02.09.2014	30.098.14/12.07.2014	55	152,729	8,400,095

65	6022	AGE-30	15.01.2015		Not out upto April, 2016	30.016.15/12.02.2015	465	152,729	71,018,985
66	6023	AGE-30	02.02.2015		16.04.2016	30.017.15/12.02.2015	434	152,729	66,284,386
67	6015	AGE-30	08.03.2015		Not out upto April, 2016	30.044.15/10.03.2015	420	152,729	64,146,180
68	6025	AGE-30	08.03.2015		Not out upto April, 2016	30.045.15/10.03.2015	420	152,729	64,146,180
69	6017	AGE-30	23.06.2015		Not out upto April, 2016	30.123.15/07.07.2015	308	152,729	47,040,532
70	6007	AGE-30	23.06.2015		02.04.2016	30.125.15/07.07.2015	279	152,729	42,611,391
									2,783,638,754

DE Loco earnings per day as per Year Book 2013-14

Rs 22,800,217,000 /409 / 365 = Rs 152,729

Annexure-5

Statement showing inordinate increase in the factory overhead (Proforma On-cost) of PLF

Year	2010-11	2011-12	2012-13	2013-14	2014-15
Proforma On-cost (Rs)	17,682,108	33,592,409	35,239,424	47,112,654	76,235,323
Difference from last year (Rs)		15,910,301	1,647,015	11,873,230	29,122,669
% Increase from last year		90%	5%	34%	62%
Difference as compared to 2010-11 (Rs)		15,910,301	17,557,316	29,430,546	58,553,215
% increase from 2010-11		90%	99%	166%	331%