

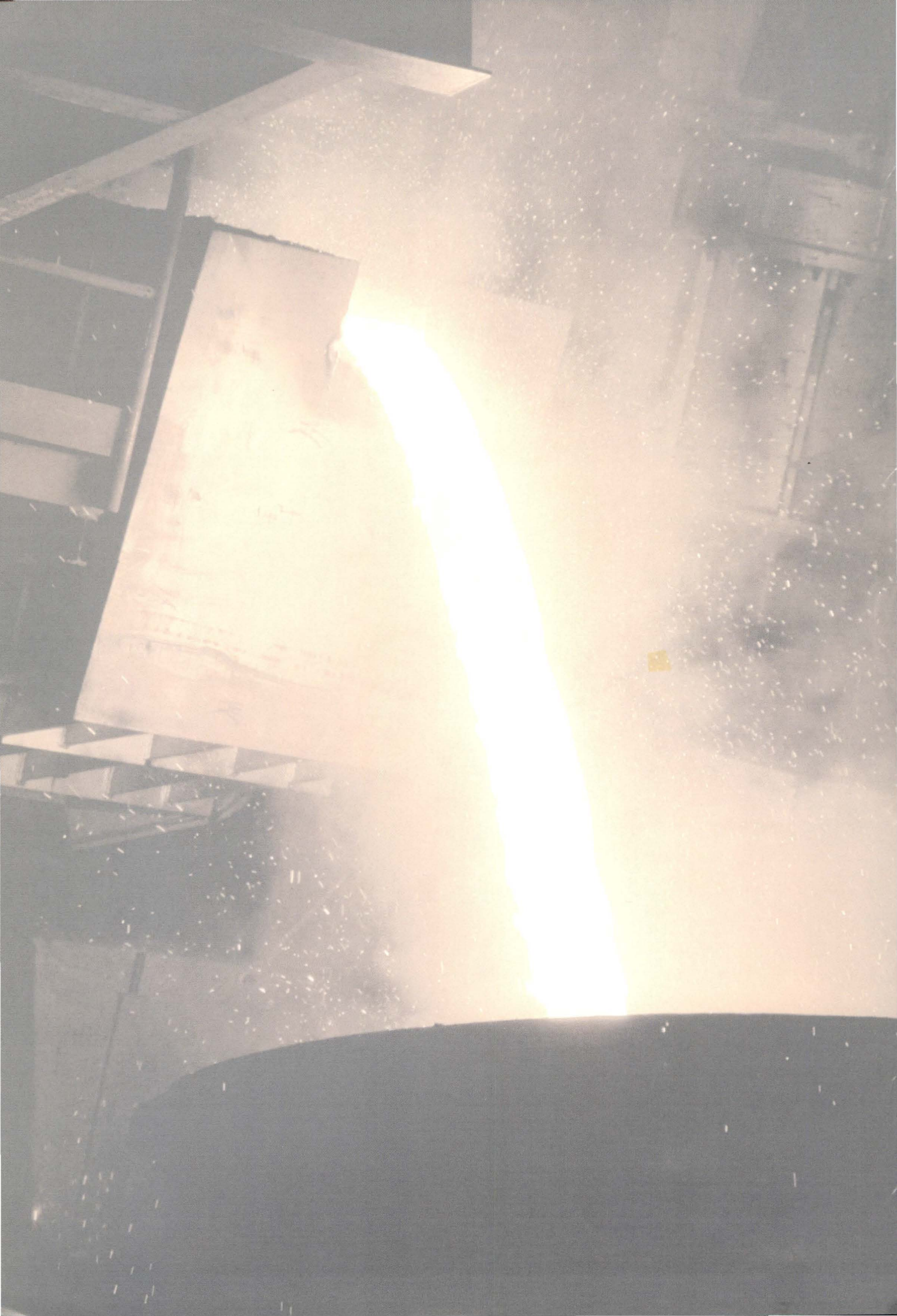
**Report of the
Comptroller and Auditor General of India
on
Modernisation and Expansion Plan in
Steel Authority of India Limited**

**Union Government (Commercial)
Ministry of Steel
No. 23 of 2015
(Performance Audit)**



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Preface

This performance Audit Report has been prepared in accordance with the Performance Audit Guidelines and the Regulations on Audit and Accounts, 2007 of the Comptroller and Auditor General of India.

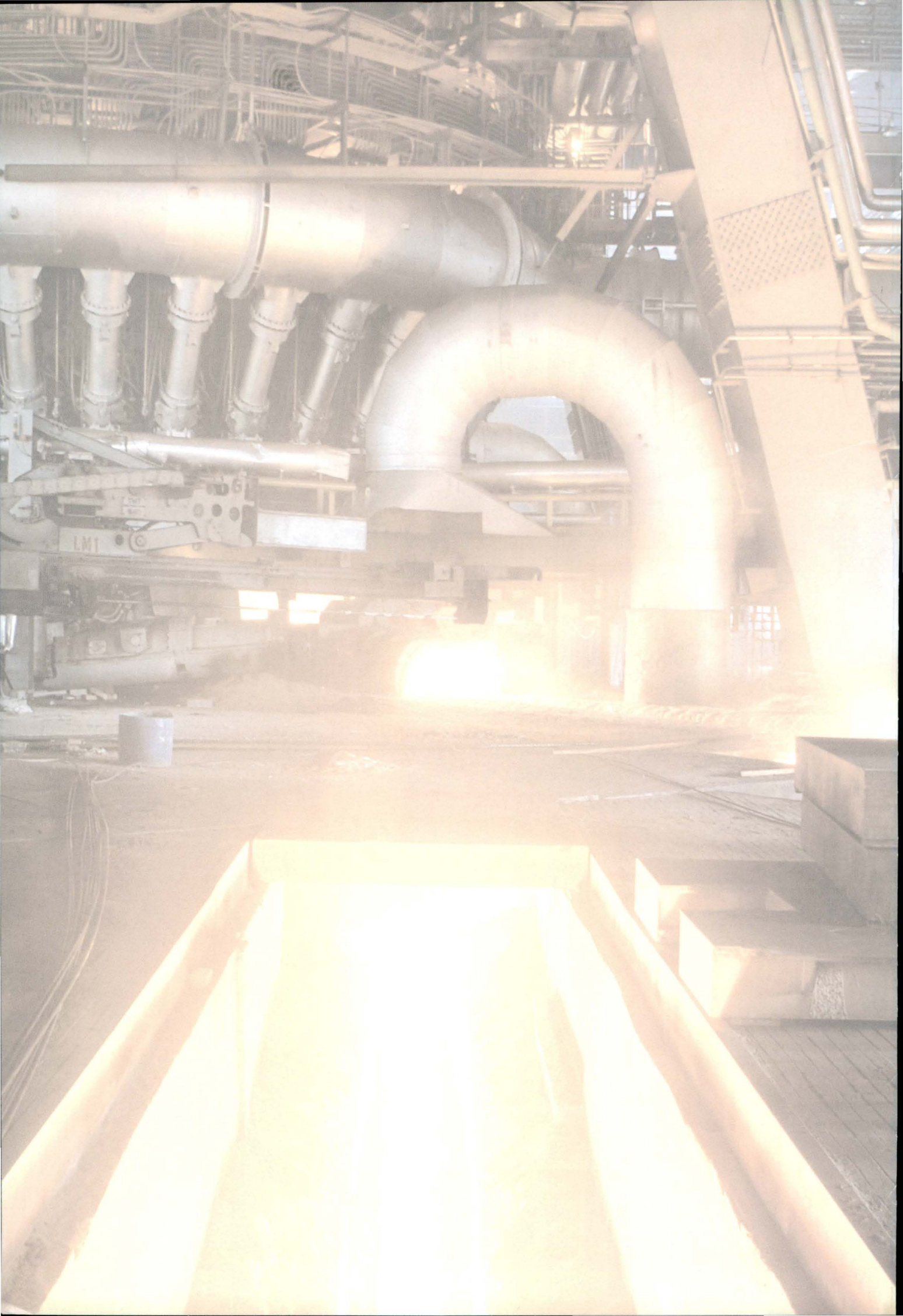
The Board of Directors accorded In-principle approval for implementation of projects under Modernisation and Expansion Plan (MEP) in its five integrated steel plants and Salem Steel Plant during June 2006-July 2007 at a total estimated cost of ₹ 43,142 crore. The MEP would enhance existing installed hot metal making capacity from 13.83 million tonnes (MT) to 23.46 MT per annum by the year 2010. In June 2009, the Company earmarked ₹ 10,264 crore for development and augmentation of captive mines, and on account of this additional financial burden deferred some packages of MEP worth ₹ 18,375 crore orders for which had not been placed by then. MEP projects of Salem Steel Plant costing ₹ 2,307 crore were completed by September 2010. The other projects in the five integrated steel plants were delayed and scheduled for completion during 2015. The estimated cost of MEP projects has increased to ₹ 66,851 crore.

The Performance Audit was taken up to examine implementation of the Modernisation and Expansion Plan (MEP). Out of 852 MEP contracts valued at ₹ 48,810 crore awarded up to March 2013, 244 contracts valuing ₹ 43,825 crore (90 *per cent*) were selected for review. All the contracts of ₹ 100 crore or above valuing ₹ 37,274 crore were reviewed in audit.

Audit acknowledges the co-operation and assistance extended by the Company and the Ministry of Steel in the conduct of this performance audit.



Executive Summary



Executive Summary

National Steel Policy 2005 envisaged a compounded annual growth of 7.3 *per cent* per annum of steel production during 2004-2020. The Company aimed to take advantage of the buoyant steel market conditions by moving quickly to implement the entire modernization and expansion plan (MEP) to enhance hot metal production from 13.83 million tonnes per annum (mtpa) in 2006-07 to 23.46 mtpa. It also compressed the implementation period by two years to year 2010 against 2012 set out in the Corporate Plan.

This Performance Audit covered the entire range of activities from 2006-07 to 2012-13 relating to the implementation of the MEP undertaken in five integrated steel plants, Salem Special Steel Plant, and captive mines. Audit selected 244 contracts valuing ₹ 43,825 crore (90 *per cent*) out of 852 MEP contracts valued at ₹ 48,810 crore awarded up to March 2013. All the contracts of ₹ 100 crore and more valuing ₹ 37,274 crore were reviewed in audit.

There were deficiencies at each stage of the project cycle i.e., project planning, tender finalisation, project execution, and monitoring of MEP implementation as discussed in the succeeding paragraphs.

1. The capacity of the equipment suppliers and contractors were limited. Simultaneous implementation of all the MEP projects across all plants within the compressed timelines stretched their capacity and resulted in increase in price. The prices obtained through tender during 2006-08 were 70 - 100 *per cent* higher than the cost estimates. Total cost of proposed MEP projects increased from ₹ 43,142 crore approved by the SAIL Board during 2006-07 to ₹ 77,691 crore, an increase of 80 *per cent*. SAIL management had option to stagger the capacity building plan in phases to allow the prices of equipment and works to calm down. But the SAIL Board chose to continue with its earlier decision.

(Para 2.1.1)

2. Twenty contracts totalling ₹ 10,556 crore were awarded on single qualified bid basis. This was ₹ 2,125 crore (25 *per cent*) higher than the cost estimates updated for all scope creep and price escalation up to opening of price bids. Similarly, 20 contracts valuing ₹ 6,600 crore were awarded on two qualified bid basis which was higher than the cost estimates by ₹ 578 crore (9.6 *per cent*). In 13 contracts the awarded price was higher by 33 - 75 *per cent* than cost estimates and 10 of them were not re-tendered. In the absence of sufficient competition the reasonableness of the ordered price could not be verified in audit.

(Para 2.1.1 and 3.2)

3. The Company did not factor in the requirement of funds for development of captive mines. To accommodate such additional requirement of ₹ 10,264 crore for captive mines it had to scale down (June 2009) the scope of MEP to ₹ 64,886 crore.

(Para 2.1.2)

4. There was adhocism in selection of projects to be deferred. The Company could defer only such projects which were not ordered at the time of review in June 2009. Deferment of some of the MEP projects created a situation where full production stream of integrated steel making was broken resulting in capacity mismatch among the projects in upstream and downstream.

(Para 2.1.2 and 2.1.3)

5. The Company appointed MECON as the consultants for MEP projects on nomination basis without adequate assessment of project management capacity of MECON. MECON's project consultancy capacity was found to be deficient. There was shortage of skilled supervisors and surveyors for supervision and inspection of structural erection at ISP site.

(Para 2.2)

6. Out of 153 projects of ₹ 20 crore and above awarded during 2008-13, the Company took more than two years in 25 cases and more than three years in 87 cases in completing the tender finalization process. The average time taken was 37 months which was four times more than the 9 months prescribed in the internal guidelines of the Company.

(Para 3.1)

7. In 20 contracts of ₹ 100 crore or more, there were 3 to 12 rounds of negotiations conducted with L-1 bidders over a period ranging from 5 to 27 months (over 9 months in 11 contracts) from the opening of price bids to award of contract.

(Para 3.3)

8. The Company did not have a clear and transparent policy for dealing with cases which could be re-tendered or negotiated, threshold for acceptance of quoted prices which were higher than cost estimates, and split of main package into number of sub-packages to obtain more competition, and took these decisions in a random manner.

(Para 3.4)

9. All the 104 contracts of ₹ 100 crore or more were not completed within the scheduled completion time stipulated in the contracts. Delay in 21 contracts was between 1-2 years, in 39 contracts 2-3 years, while in 38 contracts it was more than three years.

(Para 4.1)

10. For many projects the sites were not in 'ready to handover' condition at the time of award of technological contracts. In 14 contracts of ₹ 7,472 crore, there were 11 months to 53 months delays in handing over the front/site to the contractors for construction and erection of main plants. Delays in providing sites/fronts for these projects resulted in considerable delay in integrated commissioning of these plants.

(Para 4.1.2)

11. The Company failed to ensure synchronisation of various production facilities in ISP, BSP and RSP which was crucial for achieving the envisaged capacity expansion of the respective steel plants. Splitting of contracts into multiple packages also caused interface problems and delays.

(Para 4.1.3 and 4.1.4)

12. Risk and cost purchase clause included in the contracts to safeguard the interest of the organisation against the negligence of the contractors did not ensure execution of MEP contract within the contractual timelines. It was neither deterrent to the contractors to complete the job expeditiously nor could it ensure realisation of the risk purchase cost from the defaulting contractors.

(Para 4.2)

13. Oversight of SAIL Board and Board sub-committee (BSC) on monitoring capital projects over implementation of MEP projects was not effective and they failed in containing delays. BSC met infrequently. There was no deliberation on minutes of the BSC in the SAIL Board meetings and matter was marked as "Noted" by the Board. There were 77 Board meetings between January 2008 and 11 August 2014 and in total 49 Board meetings, the physical and financial progress of capital projects was either not discussed or just noted.

(Para 5.1)

14. Despite global economic slowdown , there was growth in domestic demand for steel products. Per capita use of steel in India in term of per kg of crude steel had also increased from 47.3 kg in 2007 to 63.9 kg in 2013. The Company failed to take advantage of growth in steel market as the integrated commissioning of capacity expansion projects in five integrated steel plants could not be completed by the year 2010 as planned, which is now scheduled for completion during 2015. Company's market share to India's total saleable steel had decreased from 25 per cent in 2004-05 to 14.6 per cent in 2013-14.

(Para 5.2)

15. The company had envisaged annual gross margin of ₹ 9,438 crore from MEP projects. Due to delays in completion of capacity expansion in five integrated steel plants by over four years on which ₹ 49,565 crore has already been spent as of 31 December 2014, obtaining envisaged annual gross margin has also got delayed.

(Para 5.2)



Chapter-I: Introduction

1.1. Steel Authority of India Limited (the Company or SAIL) is a Maharatna Company under the administrative control of the Ministry of Steel, Government of India. The Company is headed by an executive Chairman who is also the Chairman of the Board of Directors (Board). The SAIL Board consists of seven functional directors, two government nominee directors, and nine independent directors. The integrated steel plants are headed by the Chief Executive Officers who are permanent invitees in the Board Meeting. Other plants and organisations are headed by the Executive Director or General Manager.

In the face of buoyancy in steel demand during 2001-02 to 2004-05 due to India's high GDP growth the National Steel Policy 2005 envisaged achievement of steel production of 110 million tonne (mt) by 2019-20 from the 2004-05 level of 38 mt per annum.

SAIL's gross sales increased from ₹ 15,502 crore in 2001-02 to ₹ 31,805 crore in 2004-05. SAIL had a market share of 25 *per cent* of total saleable steel. As per Corporate Plan (CP) - 2012 prepared in 2004, the overall growth in domestic steel consumption was expected to be in the vicinity of eight *per cent* up to 2012. SAIL decided to take advantage of the emerging opportunity and envisaged building of organisation-wide production capacity and sustainable competencies in CP - 2012.

1.2 Company's Business Strategy and Strategic Goals

Strategic business goals formulated by the Company included enhancing market share; improving profitability by productivity improvements, cost reduction, value addition, and customer satisfaction; securing availability of key raw materials; and alleviating infrastructure bottleneck. Detailed plant-wise strategies consistent with the strategies for capacity expansion and cost and quality competitiveness were also envisaged in CP - 2012. The Company undertook the implementation of Modernisation and Expansion plan (MEP) in 2006 - 2007 in the five integrated steel plants¹ and Salem Steel Plant (SSP) to enhance its existing installed crude steel making capacity from 12.84 million tonnes (MT) to 21.40 MT per annum by year 2010 as shown in Table 1. October 2008 onwards, global economic and market scenario had changed which resulted in demand contraction in the global steel market. But the steel demand scenario in India was better and the Board decided to stay focussed on implementation of the ongoing MEP.

¹Bhilai Steel Plant (BSP) in Chhattisgarh, Bokaro Steel Plant (BSL) in Jharkhand, Rourkela Steel Plant (RSP) in Odisha, Durgapur Steel Plant (DSP) and IISCO Steel Plant (ISP) in West Bengal

Table 1: Details of proposed capacity expansion under MEP

(Production Capacity in mtpa)

Plant	Total capacity at the beginning (2006-07)			Total capacity after planned expansion		
	Hot Metal	Crude Steel	Saleable Steel	Hot Metal	Crude Steel	Saleable Steel
ISP	0.85	0.50	0.42	2.91	2.50	2.39
BSP	4.08	3.93	3.15	7.50	7.00	6.56
BSL	4.59	4.36	3.78	5.77	4.61	4.18
DSP	2.09	1.80	1.59	2.45	2.20	2.12
RSP	2.00	1.90	1.67	4.50	4.20	3.99
SSP	-	-	0.18	-	0.18	0.34
ASP	-	0.23	0.18	-	0.48	0.43
VISP	0.22	0.12	0.10	0.33	0.23	0.22
Total	13.83	12.84	11.07	23.46	21.40	20.23

1.3 Capital Expenditure Commitment

The Board accorded In-principle approval for implementation of MEP projects in its five integrated steel plants and Salem Steel Plant during June 2006-July 2007 at a total estimated cost of ₹ 43,142 crore. These estimates had to be revised to ₹ 77,691 crore in July 2008 when quoted price for various projects were found to be higher than the estimated approved cost. In RSP, BSP and BSL the quoted prices were found to be as high as 70 - 100 *per cent* above the estimated cost. The Board decided to continue with the MEP projects to take advantage of going early in production, and after reducing some scope of work in RSP and DSP, approved (July 2008) the revised cost estimates of ₹ 72,997 crore. A year later, the Company planned expenditure of ₹ 10,264 crore on augmentation/developments of captive mines which was not envisaged earlier, and total capital expenditure of ₹ 83,261 crore was found to be unsustainable. Board therefore deferred/excluded some packages of MEP worth ₹ 18,375 crore which were not ordered by then, and approved (June 2009) the MEP at revised total cost of ₹ 64,886 crore including ₹ 10,264 crore for captive mines. Cost of implementation of MEP projects in ISP increased (February 2011) to ₹ 16,408 crore from ₹ 14,443 crore, thereby escalating the total cost to ₹ 66,851 crore.

1.4 Organizational Structure for formulation and appraisal of capital investment

Investment Planning Unit (IPU) was the nodal agency at respective plants to plan, formulate and appraise the capital investment proposals. Investment proposals were then appraised by plant level Project Appraisal Group (PAG) and were approved by the Chief Executive Officers (CEO) of the respective plants. The MEP projects which exceeded the CEOs' financial delegation were submitted to Project Directorate (PD) at Corporate Office, a nodal agency for coordinating appraisals and approvals of the MEP projects. PD, after appraisal of the proposals, would seek approval of the competent authority as per the financial delegation of power.

1.5 Audit Objectives

The objectives of this Performance Audit were to assess whether: (i) The MEP was initiated after assessing market demand and adequate availability of competent equipment vendors, contractors and project management capacity; (ii) The project contracts were concluded in a transparent, competitive and fair manner and were executed efficiently and expeditiously; and (iii) System and procedures for monitoring were adequate and effective at all levels, and the reasons of delays and impact were analysed and adequately addressed.

1.6 Scope of Audit

The Performance Audit covered the management processes and activities including project procurement and project management activities relating to the implementation of the MEP undertaken in five integrated steel plants, Salem Steel Plant, and captive mines. As implementation of MEP projects was still not complete, audit conducted a mid-term review of its implementation, and total period covered was from 2006-07 to 2012-13. The status was further updated where necessary.

Out of 852 MEP contracts valued at ₹ 48,810 crore awarded up to March 2013, 244 contracts valuing ₹ 43,825 crore (90 per cent) were selected for review. All the contracts of ₹ 100 crore and more valuing ₹ 37,274 crore were reviewed in audit.

Pending financial closure of MEP projects as of March 2014, some area of contract administration, like realisation of liquidated damages, CENVAT and VAT credit realisation, and other adjustments/claims against the contractors for MEP projects were excluded from the scope of work.

1.7 Audit Methodology and Criteria

An entry conference was held with the Company and the Ministry of Steel on 16 August 2013 to discuss the audit objectives, scope, sample selection, methodology and criteria for this audit. Audit teams conducted the field audit during August 2013 to March 2014 and examined the records of the plants, mines, corporate office and the Ministry of Steel. Performance of MEP was assessed against the following audit criteria:

- Company's Corporate Plan - 2012 prepared in 2004 and MEP Plan; agenda and minutes of meetings of the Board, Board Sub-Committee and Plant Level Committee, decisions taken at level of Ministry of Steel, replies of Plant management to preliminary audit observations and minutes of the discussion between the management and the auditors;
- Technical and financial estimates as per Composite Project Feasibility Reports (CPFR) and revision therein wherever made, Notice Inviting Tender documents, technical and commercial evaluation reports, and contracts/ agreements; notes and records in the relevant departmental files, Management Information System (MIS) reports on projects, and Project Completion Report (PCRs);

- Delegation of powers, Purchase/Contract Procedures, and Central Vigilance Commission (CVC)'s procurement guidelines.

Draft Performance Audit Report was issued to the Company and the Ministry of Steel on 14 September 2014 for confirmation of facts/figures and reply. Exit conference with the Company and Ministry officials was held on 8 October 2014. Clarifications and comments made during the exit conference and replies of Ministry dated 12 February 2015 were suitably considered in this Report.

Chapter II: Planning

The Corporate Plan (CP) -2012 prepared by SAIL in 2004-05, envisaged the capacity build-up of each plant in phases, initially by realization of existing potential through de-bottlenecking (2006-07) and finally capacity addition through major investments by 2011-12. The capacity expansion of entire production stream from raw material handling system to rolling mills was to increase crude steel production from 12.84 million ton per annum (mtpa) in 2005-06 to 21.40 mtpa by 2012.

Audit noted that expansion plan was backed by sufficient demand for steel products in India. Audit also noted that SAIL had necessary funds to finance the capacity expansion programme. SAIL, however, did not assess the capacity of equipment suppliers, civil contractors, project consultants and in-house project management capacity to efficiently execute the MEP, as a result of which the MEP suffered as discussed in the report.

2.1 Availability of equipment supplier and civil/structural contractors

The Company was aware that world-wide, there were very few technology suppliers for steel-making equipments. They also knew that capacity enhancements were taking place in private sector in India as well as in other countries. As per the estimates of World Steel Dynamics, world crude steel production of one billion tonne per annum in 2004 was expected to cross 1.130 billion tonne per annum by 2010. China had planned to add 80 million tonne of crude steel by 2010. Besides SAIL, other Indian Steel producers had also planned to enhance their domestic capacity of crude steel to 120.87 mt in 2012 from 56.84 mt in 2006-07. Therefore, there was a very high risk of being caught in hiking of prices by equipment suppliers due to limited spare capacity. Also, delays in execution were anticipated as a consequence of limited capacity of vendors/contractors. The Company in consultation with Ministry of Steel, however, chose (2006) to take up the entire plan of capacity expansion of hot metal production to 23.46 mtpa from 13.83 mtpa in 2005-06 simultaneously in all the plants. The project implementation duration was also compressed by two years at the instance of the Ministry of Steel with scheduled completion in 2010, as against 2012 envisaged in CP-2012. Equipment suppliers for steel-making were already overbooked at this time and simultaneous capacity building in all the plants within the compressed time period had adverse consequences as commented below.

2.1.1 Overbooked equipment suppliers sought higher prices for their equipment

Prices quoted by the bidders for the various MEP projects tendered during 2006-08 were higher by 70 - 100 *per cent* than their cost estimates and the total cost of proposed MEP projects increased to ₹ 77,691 crore, an overall 80 *per cent* jump over cost estimates of ₹ 43,142 crore. At this time, the Company could have decided to stagger the capacity building plan in phases to allow the prices of equipment and services to calm down. The SAIL Board however had decided to implement the MEP projects simultaneously to take

advantage of buoyancy in Indian and global steel market by early implementing all the projects of MEP vis-a-vis other steel producers which were planning to set up green-field steel plants.

Audit noted that TATA Steel² had also planned to double its production capacity from 5 mtpa to 9.7 mtpa in two phases, initially from 5 mtpa to 6.8 mtpa by 2008 and then to 9.7 mtpa by 2012, and the projects were commissioned as planned.

Due to insufficient competition, 20 contracts valuing ₹ 10,556 crore were awarded on single qualified bid basis, which was higher by ₹ 2,125 crore (25 per cent) over cost estimates which were updated for all scope creep and price escalation up to opening of price bids. Similarly, 20 contracts valuing ₹ 6,600 crore which was higher than the cost estimates by ₹ 578 crore (9.6 per cent) were awarded on two qualified bid basis. In the absence of sufficient competition, the reasonableness of the ordered price could not be verified in audit.

Ministry stated that the buoyant Indian and global steel market inspired all foreign and indigenous steel players including SAIL to go for capacity expansion, with a view to reap benefits from booming market. Meetings and presentations were organised with technology and equipment suppliers and open global tender were solicited to encourage their greater participation in the MEP implementation. Limited vendor/contractor capacity due to substantial ongoing expansion plan globally, however, reduced the competition significantly. There was no choice but to proceed with single bidder.

Reply is not tenable. The Board decided to take advantage of prevailing buoyancy in Indian and global steel market, and for that not only had they compressed the implementation period by two years, but also chose to pay higher prices for equipment and other works. The Company should have put in mechanisms to ensure that all the tasks starting from tender finalization/award of contract to execution/commissioning of projects were completed as per planned schedule. We, however, noted that there were several deficiencies as detailed below which resulted in delays as a result of which SAIL could not complete the MEP by October 2010.

- A new post of Director (Project and Business Planning) was created in May 2012 to coordinate and oversee planning and execution of projects. Audit noted that by this time, most MEP projects were already under execution;
- The Company came out with new guidelines on formulation and appraisal of projects only in 2010 after noting inadequacy in the 1986/2000 guidelines. By this time most of the MEP projects were already appraised and tendered and/or ordered;
- Detailed project reports (DPRs) were not prepared and pre-bid conferences were not organized in most of the cases. The Company went to tendering of MEP projects without finalising full scope of work and complete technical specifications; and

² Sources: Annual Reports of TATA Steel which are in public domain

- Sites were not in 'ready to handover' condition at the time of execution of main technological contracts and there was delay of 11 months - 53 months in handing over site to the contractors.

2.1.2 Deferment of projects

While planning for MEP in July 2008, the Company did not factor in fund requirement for capacity enhancement of mines. The Company, however, earmarked (May/June 2009) ₹ 10,264 crore for augmentation and development of mines to meet the additional requirement of raw material after expansion. To meet the additional capital expenditure, the Company had to further scale down (June 2009) the scope of MEP to ₹ 64,886 crore, due to limited financial flexibility within the envisaged debt equity ratio of 1:1. MEP projects valuing ₹ 18,375 crore planned for BSP, BSL, DSP and RSP were excluded/deferred and ₹ 77.92 crore incurred up to June 2009 on these projects became infructuous.

Selection of MEP projects to be deferred was purely adhoc. The Company deferred only such projects which were not ordered at the time of review in June 2009. As a result, important projects got deferred in the BSP, BSL, DSP and RSP, and the Company had to forego annual gross margin of ₹ 8,127 crore on deferred investment of ₹ 18,375 crore. Total gross margin on the MEP investments was also reduced from 26.5 to 18 *per cent* as seen from the Table 2 below.

Table 2: Changes in estimated gross margin due to deferment of projects BSP, BSL, DSP and RSP

(Rounded to ₹ in crore)

Name of the unit	Approved MEP investment-July 2008	Approved investment after deferment -June 2009	MEP Investment deferred	Gross Margin* before deferment-July 2008	Gross Margin after deferment - June 2009	Reduction of gross margin
BSP	21,139	17,265	3,874	4,642	3,030	1,612
BSL	15,196	6,325	8,871	3,584	528	3,056
DSP	8,004	2,875	5,129	2,479	833	1,646
RSP	12,313	11,812	501	4,311	2,498	1,813
Total	56,652	38,277	18,375	15,016	6,889	8,127
Estimated gross Margin as percentage of approved investments				26.5	18.0	

*Net sales realisation minus manufacturing cost

Ministry stated that the decision to defer some of the packages/schemes under MEP was taken with due approval of SAIL Board in June 2009 keeping in view global economic and steel scenario. Ministry reply is not tenable because in 2008 they chose to order all the MEP projects simultaneously which was unsustainable as commented above. For expanded steel-making capacity, they were also required to enhance availability of raw material from captive mines. Therefore, they should have simultaneously factored the need of additional fund of ₹ 10,264 crore for captive mines when they planned funding for the expansion of steel-making capacity in 2007-08 and should not have waited for this until June 2009. Moreover, the

mining projects for which the Company deferred the steel making projects worth ₹ 18,375 crore could not take off. Against total ₹ 10,264 crore earmarked in June 2009 for captive mines projects, only nine mining projects valued at ₹ 32 crore were completed by March 2014 and ₹ 925 crore was spent up to December 2014.

2.1.3 Capacity Mismatch

Deferment of some of the MEP projects created a situation where supply chain of integrated steel making in some cases was broken resulting in capacity mismatch among the projects in upstream and downstream. Some of such cases are commented below.

1. As per approved Plan (December 2006), capacity expansion in BSL was to increase to 7.0 mtpa from 4.36 mtpa of crude steel, and the same was to be achieved by installing an additional SMS-III Complex to produce 3.8 mtpa of crude steel. A new cold rolling mill (CRM)-III was planned to use crude steel from new SMS-III for producing 1.2 mtpa of saleable steel. In addition, up-gradation of SMS-II and Hot Strip Mill was also envisaged to match the capacity in upstream and downstream. Most of the main technological packages of new CRM-III of ₹ 2,524.04 crore were ordered during March-May 2008 whereas SMS-III plant was deferred. This would result in the CRM-III capacity being unutilized.

Ministry stated that input requirement of new CRM-III of BSL will be met from SMS-I, II and Hot Strip Mill (HSM) after completion of their ongoing modernisation and up-gradation. Reply is not tenable as ongoing up-gradation of SMS-II and HSM would not be completed before integrated commissioning of new CRM-III, and modernisation of SMS-I was at tendering stage (February 2015) and would take at least 30 months to be completed after award of contract.

2. The Board approved (May 2007) the capacity expansion in RSP to 4.5 mtpa from 2.0 mtpa of hot metal and corresponding facilities for production of crude steel including a new plate mill of 1.8 mtpa. Feeder projects in upstream like new blast furnace, new converter for SMS-II were ordered, but the capacity of a new plate mill in downstream was reduced from 1.8 mtpa to 1.0 mtpa in June 2009. Reduction thus created an idle capacity of 0.8 mtpa in SMS.

Ministry stated that output from 0.8 mtpa of excess capacity of SMS-II in RSP will be sent to BSL or sold, and would also provide input for upcoming new Hot Strip Mill. Reply is not tenable. RSP had planned to use output of SMS-II for production of finished product and it was not to be sold as semis which would fetch lesser contribution of ₹ 32.32 crore per year. Sending excess output from SMS-II to BSL entailed additional cost of freight. Use of crude steel in HSM may take another two or more years as tender finalisation of this project has not been completed (February 2015).

2.1.4 A new SMS plant in SSP was installed without captive power facility

The new SMS plant with production capacity of 1.80 lakh tonne per annum stainless steel slabs installed (February 2011) in SSP uses a power intensive Electric Arc Furnace (EAF) route and required uninterrupted power supply. SSP's power load requirement increased to 95.5 MVA from 26.5 MVA (before the expansion). This meant reliance on supply of power from State Electricity Board which was uncertain. However, the Company did not plan captive power facility of its own in MEP. After installation of the SMS, the State Electricity Board reduced the supply and imposed monthly restriction on power consumption. As a result, the production capacity of SMS installed at total cost of ₹ 411.38 crore remained underutilized since 2011. Ministry accepted that there was delay on the part of the Company to take corrective measure to install a 2x60 MW power plant to meet power requirement of SSP.

2.2 Appointment of Consultant

There was no consistent policy regarding appointment of Consultants. The Company appointed consultants for MEP projects in SSP on limited tender basis whereas MECON was appointed as consultant³ on nomination basis for planning and execution of MEP projects of its five integrated steel plants (other than Mill Zone in RSP). Terms of reference and condition of works including financial terms with MECON were finalised after completion of major consultancy work. There were no penal clauses to safeguard the organisation against defaults at any stage of the project including delays, poor planning and supervision, and excessive cost overruns attributable to the consultants. The appointment of consultant without inviting bid was in violation of the Central Vigilance Commission (CVC)'s guidelines.

Audit noted that adequacy of project management capacity of MECON was assumed based on a written assurance from them. There was acute shortage of skilled supervisors and surveyors in MECON for supervision and inspection of structural erection at ISP site.

Ministry stated that MECON had the advantage because they were associated with the earlier capacity expansion of SAIL; they had already been assigned to prepare CPFRR for the MEP projects and had drawings; and had offices at SAIL plants. Reply of the Ministry may be viewed against the following facts:

- Open tender could have provided opportunity to the Company to conduct structured assessment of capacity of MECON and other consultants. The Company had appointed M/s Dastur & Co, as consultants for SSP on limited tender basis in which MECON had also participated and MEP projects in SSP were commissioned by September 2010. Appointment of MECON on nomination basis on the strength of their past credentials does not mean that their capacity and skill in providing project management services should not be reassessed for a job in hand. Last capacity

³ 16.12.2006 (BSL), 17.04.2007 (BSP), 30.05.2007 (RSP), 03.08.2007 (DSP) and 11.01.2006 (ISP)

expansion plan implemented by SAIL during 1989-1997 was for only 1.4 mtpa. MECON had not taken up consultancy job of such magnitude in the past.

- MECON's scope of work in ISP also included providing full project management services. Integrated commissioning of the MEP projects in ISP was delayed by over four years. Project management capacity within MECON and the Company was so deficient that the Company had to appoint (August 2014) another consultant on nomination basis for speedy completion of the project.

Recommendation:-

- 1. The Company may review its policy for appointment of consultants through nominations. Selection of consultants through open tender would provide opportunity to conduct structured assessment of their project management capacity as well as to obtain fair market price.**

Chapter III: Award of Contracts

Audit reviewed activities from in-principle approval to award of contract in 244 contracts and noted that tender finalisation and contract award process was inefficient, lacked sufficient competition, and was less credible as pointed out in subsequent paragraphs.

3.1 Delays in pre-ordering activities

The Company had fixed (May 2007) 39 weeks (9 months) for finalization of tender i.e. from in-principle approval to order placement for open/global tenders. These instructions were reiterated in July 2009. Audit reviewed 153 projects of ₹ 20 crore and above awarded during 2008-13 and noted that the Company took more than two years in 25 cases and more than three years in 87 cases, in completing the process. The average time taken was 37 months which was four times more than the stipulated time of 9 months. Audit noted that delay was largely on account of deficiencies in preparation of scope of work.

3.1.1 Inadequacies in estimation of scope of work

The Company could not reasonably estimate the scope of work for the MEP projects. DPRs were not prepared for MEP projects. Instead the Company had prepared Comprehensive Project Feasibility Reports (CPFR) which lacked in-depth analysis of scope of work and specifications. Consequently there was significant scope creep between In-principle approval and price opening bids. Audit analysed 29 main technological packages of the MEP across all the plants and found that scope creep was ₹ 4,182 crore (36.8 per cent) over initial estimates of ₹ 11,369 crore as given in Table 3. In the absence of detailed scope and specifications the entire tendering process was open to be influenced by vendors and was not conducive to fair and open competition.

Table 3: Scope creep between In-principle approval and price opening bids

Name of unit	No. of projects	In-principle approved cost net of CENVAT (₹ in crore)	Revised Cost estimate Net of CENVAT (₹ in crore)	Increase in cost estimates (₹ in crore)	Reasons			Scope creep over in-principle approved cost (per cent)
					Physical		Monetary	
					Scope Addition (₹ in crore)	Change in volume (₹ in crore)	Escalation/ FE Component (₹ in crore)	
ISP*	8	4,377	6,220	1,843	650	828	365	33.77
BSP	8	2,225	3,412	1,186	741	171	274	40.99
BSL	1	1,971	2,524	553	188	266	99	23.03
DSP	1	360	650	290	0	42	248	11.67
RSP	11	2,436	3,980	1,545	777	519	249	53.20
Total	29	11,369	16,786	5,417	2,356	1,826	1,235	36.78

*before adjustment for CENVAT credit

3.1.2 Pre-bid conference and expression of interest (EOI)

Pre-bid conference and EOI are the tools used to minimize post bid discussions. Purchase Contract Manual of the Company also provides for EOI. However, the Company did not conduct pre-bid conferences in BSL, RSP and DSP. In ISP and BSP, out of 51 and 54 packages, pre-bid conference was conducted in 14 and 18 packages respectively. Consequently there was delay in finalization of tender process.

3.1.3 Prolonged technical discussion and evaluation

Inadequacies in pre-tendering activities led to prolonged technical discussions with the bidders after submission of bids. Against 10 weeks norm, average time taken for technical discussions and evaluation was 16 to 26 weeks in 111 contracts in five integrated steel plants. Technical discussion and approval in 16 main technological packages lasted up to nine months.

Ministry stated that technical specifications in most of cases were not accepted in totality by bidders because of latest technology available with them. During interaction with bidders, some changes which were beneficial to the plants were accepted. EOI was not resorted to as no new technology was involved and details of MEP projects were fully known. DPR of projects was not prepared to save time after implementation period was compressed by two years. Tenders of most of the packages were floated timely but delays in tender finalisation was not within management control viz. bidders requested more time for submission of bids; in case of multiple packages, technical data was required from the main technological contractors before tenders could be issued for civil, structural and other connecting works; insufficiency of suitable bidders; re-tendering of some tenders was resorted to; long time taken by bidders in giving techno-commercial clarifications; and some works were deliberately tendered late to synchronise with the main packages.

Ministry has acknowledged that DPR was not prepared by the Company. It is evident that in the absence of DPR, the Company could not assess the detailed scope and specification of the project which resulted in delayed finalisation of tender. Pre-bid conference/EOI was required to facilitate identification of the potential vendors, clarity/parity of technical and commercial terms before the bids are invited, and early conclusion of post bid technical discussion.

3.2 Variance in cost estimates and awarded price

Cost estimates are prepared to establish reasonableness of the awarded price at which package could be executed. Therefore, it is essential that estimates are worked out in a realistic and objective manner. Audit observed that out of 104 contracts of ₹ 100 crore or more the awarded price was higher by 15 *per cent* than their cost estimates in 37 contracts valuing ₹ 17,277 crore. In 13 contracts the awarded price was higher by 33 - 75 *per cent* and 44 *per cent* overall (₹ 2,151 crore) as given in Table 4.

Ministry admitted that the cost estimates of consultants were the reflection of fair price but stated that bidders' prices were governed by many considerations including the prevailing competition in the particular package and excess of quoted price over cost estimates should be considered as normal. Re-tendering and negotiations were resorted to seek cost reduction in many cases. The fact remains that the awarded prices were 33-75 per cent more than the cost estimates which were updated up to the opening of price bids and therefore cannot be said as normal. 10 out of 13 cases listed were not re-tendered despite price bids being higher by 33 - 75 per cent than the cost estimates.

Table 4: Statement showing excess of cost estimates over the final price accepted for award

(Amount in ₹ crore)

Name of the package	Plant	No. of price bid opened	Cost estimates ⁴	Final accepted price	Excess of final price bid over cost estimate		Whether award after retender	
					Amount	per cent		
1	New COB-VI proper	RSP	2	276	368	92	33.3	N
2	Blast Furnace	ISP	1	1,119	1,494	375	33.5	N
3	Coke Dry Cooling plant	ISP	1	228	307	79	34.6	Y
4	Turbo Blower Station	BSP	1	184	256	72	39.1	N
5	Secondary Refining Units	ISP	1	154	215	61	39.6	Y
6	BOF Shop	ISP	1	797	1,121	324	40.7	Y
7	Coke Dry Cooling Plant	BSP	1	252	355	103	40.9	N
8	By Product	ISP	2	159	231	72	45.3	N
9	Basic Oxygen Furnace	BSP	1	889	1,336	447	50.3	N
10	CDCP	RSP	1	220	344	124	56.4	N
11	Skin Pass Mill	BSL	2	67	107	40	59.7	N
12	Coke Oven Battery	ISP	2	315	538	223	70.8	N
13	Turbo Blower	RSP	1	184	323	139	75.5	N
	Total			4,844	6,995	2,151	44.0	N-10

3.3 Violation of CVC guidelines

The Central Vigilance Commission (CVC) considers 'post tender negotiations' could often be a source of corruption and should not be allowed to be misused as a tool for bargaining with L-1 with dubious intentions or lead to delays in decision making. It states that: there should not be any negotiations; negotiations if at all shall be an exception, and only in the case of propriety items or in the case of limited source of supply or where there is suspicion of a cartel making; and shall be held with L-1 only. CVC instructions also states that entire process of award of contracts including negotiations should not exceed one month (45 days if next higher level approval is required) from the date of submission of recommendations.

⁴Revised estimates after taking into account any scope increase and price escalation including Foreign Exchange fluctuations up- to opening of the price bids and therefore should be considered as reasonable.

Audit noted that in 20 contracts of ₹100 crore or more, there were 3 - 12 rounds of negotiations conducted with L-1 bidders over periods ranging from 5 months - 27 months (over nine months in 11 contracts) from the opening of price bids to award of contract.

Ministry stated that over-booked equipment suppliers and skilled manpower limitations in the ongoing booming market had provided an opportunity to the equipment suppliers to quote much higher prices than the estimates. In such situation, negotiations were inevitable and substantial reductions were obtained. The CVC and the internal procedures allow negotiations in such exceptional situations. Negotiations had to be resorted to at different levels, which took much longer time.

Reply is not tenable. Prices of equipment and auxiliary works had started falling from October 2008 onwards due to global economy slowdown. Nine contracts of the 20 contracts stated above were negotiated after October 2008. But SAIL management chose to conduct protracted negotiations instead of testing the prevailing market prices through re-tender. Thus negotiated prices obtained cannot be considered as market-driven and protracted multiple negotiations made the whole process less credible.

3.4 Inadequacies in finalization of contract

The Company did not have a clear and transparent policy for dealing with cases which could be re-tendered or to be negotiated, threshold for acceptance of quoted prices which were higher than cost estimates, and split of main package into number of sub-packages to obtain more competition, and took these decisions in random manner. Depicted in Table 4 are some examples, when Company went ahead without re-rendering (10 cases), while in some cases (three cases) re-tendering was done, which showed pure adhocism. Important audit findings with respect to inadequacies in finalization of contracts are as under:

3.4.1 Award of Raw Material Handling Plant in ISP

The Company invited and received three bids from vendors namely, M/s. McNally Bharat Co. (MBE) Ltd., M/s. L&T, and M/s. Elecon Engg Limited in November 2006 for installation of Raw Material Handling System (RMHS) in ISP. Bids of M/s MBE and M/s. L&T were found technically compliant. M/s L&T, however, did not submit the final price bid because of disagreement in completion time. Since the single price bid of ₹ 1,574 crore from M/s MBE was higher than the MECON's cost estimate of ₹ 1,054 crore, it was decided to re-tender the work after splitting into four packages. As given in Table 5 below, all three bidders who had earlier submitted bids for un-split work, submitted their bids when this work was re-tendered with 26 months completion time and relaxed eligibility criteria.

Table 5: Quoted Price bids of technically compliant bidders

(₹ in crore)

Bidder	Ore Handling Plant	Coke Handling Plant	Base Mix Preparation Plant	Yard Machines		
				Group-I	Group-II	Group-III
M/s MBE	545.00	588.00	550.00	30.72	135.57	71.96
M/s L&T	662.49	514.54	466.50	33.37	164.62	84.95
M/s Elecon	688.80	600.23	552.95	26.40	77.71	63.60
M/s Takraf	-	-	-	-	126.06	-
M/s Shenyang	-	-	-	-	140.25	-
M/s HEC	631.79	-	505.43	-	-	-
Awarded bidder	MBE	L&T	L&T	Elecon	Elecon	Elecon

Audit noted that:

- M/s. Elecon Engg who was technically non-compliant in the initial tender, became compliant for each of four packages in re-tender. M/s L&T, who did not submit commercial bids for previous un-split work, was also allowed to participate in later bid.
- Table 5 shows that price bids of M/s Elecon was significantly less in all three groups under Yard machine than the price bids of M/s L&T and M/s MBE. Similar trends were seen in other three awarded packages where other two price bids were significantly higher than L-1 bid of awarded bidder. All three bidders who had earlier submitted bids for un-split work received the awards when this work was retendered.
- Total cost of four awarded packages was ₹ 1,661.58 crore, an increase of ₹ 87.58 crore over previous price bid of un-split work, and ₹ 362.04 crore higher than the MECON's revised cost estimates of ₹ 1,299.54 crore. Re-tendering with split packages (four) also resulted in delays in awarding the contract by 15 months.

Ministry stated that M/s Elecon became technically compliant after change in eligibility criteria in re-tender. SAIL guidelines did not prohibit participation of a bidder in re-tender who failed to submit price bid after being found technically compliant in the first tender. The reply may be viewed against the fact that the awarded prices was ₹ 362.04 crore higher (28 per cent) than the MECON's revised cost estimates and ₹ 87.58 crore more than the previous bid. Moreover, in the situations stated above, it was not possible to conclude in audit that the lowest prices obtained in open tender were the fair prices.

3.4.2 Award of contract for coke oven batteries and related plants

According to Company's own vendor database, there were 4-5 global technology suppliers in the field of battery. Table 6 shows that the Company placed orders for New Coke Oven Battery (COB-Proper), Oven Machines, and Coke Dry Cooling Plant in BSP on M/s BEC Ltd, Bhilai led consortium on the basis of single technically compliant bid received against global tender.

Table 6: Award of contracts in BSP on single bid basis

(Net of CENVAT - ₹ in crore)

Name of the Plant		COB (Proper)	Oven Machines	Coke Dry Cooling Plant (CDCP)	Total
BSP	Cost Estimates	331.86	82.54	252.25	666.65
	Contract Price	400.19	105.24	355.06	860.49
	Excess over estimates	68.33	22.70	102.81	193.84
ISP	Cost Estimate	314.61		227.66	542.27
	Contract Price	537.33*		307.38	844.71
	Excess over estimates	222.72		79.72	302.44
RSP	Cost Estimate	276.34	95.96	220.49	592.79
	Contract Price	368.15*	88.05	344.42	800.62
	Excess over estimates	91.81	(-)7.91	123.93	207.83

*Two valid price bids whereas all other equipments were ordered based on a single bid.

The awarded price was significantly higher than the cost estimates in all three packages. The Company, however, chose not to re-tender in BSP citing normalized cost of similar packages earlier ordered in ISP and RSP being comparable/higher than the awarded price of BSP machines. This comparison was not valid because the prices obtained for these machines in ISP and RSP also were not based on sufficient competition. As ordered price of machines in ISP and RSP could not be considered as being competitive, the same should not have been considered as reasonable for accepting single price bids in BSP.

Ministry stated that prices were obtained through global tender. The prices were higher than cost estimates due to buoyant market condition and considerable reduction was achieved from negotiations. Just because the Consultant's cost estimates were lower than the price obtained it cannot be concluded that the price so obtained was unreasonable.

Reply is not tenable as cost estimates prepared by the Consultants included all escalations and scope creep updated up to opening of price bids and therefore could be considered as valid estimation. Management also accepted that cost estimates reflect the fair price. Thus, the reasonableness of the cost of ₹ 2,505.82 crore for procurement without adequate competition is open to question.

3.4.3 Installation of blast furnaces

The Company awarded contracts for installation of three blast furnaces of 4060 M³ capacity, one each at BSP, RSP and ISP. Audit noted that:

1. The Company invited and received three bids for installation of blast furnace in ISP. MCC China did not meet the eligibility criteria. Paul Wurth consortium who was techno-compliant sought more time to discuss some technical deviations and payment terms. The Company declined to give more time, and awarded the contract to POSCO. Thus the procurement of blast furnace in ISP was non-competitive. Moreover, it did not result in any time saving as the Company took more than 20 weeks from date of opening of price bid to award the contract, against six weeks prescribed.

Ministry stated that it was not right to conclude that award was non-competitive considering that price obtained for 4060 M³ blast furnace in ISP was equivalent to price obtained by RINL for a smaller blast furnace of 3800 M³. Reply is not tenable because prices of different capacity ordered by two different entities are not comparable. Decision to decline more time to Paul Wurth for discussion could not be considered as a prudent decision as only one bid of POSCO was left and awarded price obtained from POSCO was ₹ 373.82 crore higher than revised cost estimates.

2. Techno-commercial discussion and price negotiations took 24 months for installation of a blast furnace in BSP. The negotiated price offered by POSCO led consortium (L-1 vendor) selected amongst 4 technically compliant bids was ₹ 1,538.17 crore. The letter of award was issued by the Company on 15 August 2008 but contract was not signed till June 2009. Board rejected the offer of POSCO despite reduction in price, and decided (June 2009) to re-tender in expectation to obtain lower prices due to slowdown in global economy. In re-tender, the L-1 price bid of Paul Wurth after obtaining ₹ 3 crore reduction in negotiation was ₹ 1,579.14 crore, which was ₹ 82.99 crore higher than the cost estimates of ₹ 1,496 crore. Management considered the re-tendered bid as competitive bid as the price obtained was ₹ 85 crore lower than the price finalized in first tender with POSCO (after due normalization) and was also lower than normalized price of this equipment earlier ordered in ISP and RSP.

Reply may be viewed against the fact that awarded price (August 2010) obtained in BSP after re-tender was ₹ 40.97 crore higher than previous L-1 bid. Obtaining a discount of ₹ 3 crore in negotiations held between opening of differential price bids on 4 December 2009 and award of contract on 30 August 2010 cannot be considered as market driven because this period coincides with the global economy slowdown in which the prices of goods and services were falling. Further, comparison with ISP and RSP was not valid because ISP bid was itself a non-competitive bid. In RSP, awarded bid of Tata/Danieli for blast furnace was ₹ 273 crore higher than the cost estimates. Blast furnace in ISP and RSP were not re-tendered. Thus there was no consistency as to when to/not to re-tender.

3.4.4 Contracts for setting up of Basic Oxygen Furnace (BOF), on single price bid

The Company had planned installation of BOFs (also called converters) in ISP, BSP, and RSP simultaneously in 2007. As per SAIL's vendor database, there were 10 global suppliers for BOF. Global tender, however, resulted in single qualified bid in each of three plants. In ISP and RSP, composite BOF work was split and repackaged into main technological package and auxiliary packages and the work was retendered to seek greater competition but it again resulted in single qualified bid for main package. The Company resorted to protracted negotiations before order price was finalized. Three converters each in ISP (₹ 1,120.83 crore) and BSP (₹ 1,335.92 crore) and one converter in RSP (₹ 328.91 crore) were thus ordered based on non-competitive bid.

In BSP, decision of Company not to re-tender for three converters was not prudent. Deviations in scope of work like, non-carrying out of integrated commissioning test, no performance guarantee for the specific energy consumption of 850 KW/ton of steel, and increasing the commissioning time from 2.5 months to 3 month for converters were accepted after submission of technical bid. After opening of price bid, scope of work valued at ₹ 50.81 crore was reduced which was in contravention of Purchase/ Contract Procedure of the Company.

Bid for one converter in RSP was received in November 2008 and price bid was opened in January 2009. After eight rounds of negotiations, price reduction of ₹ 83.57 crore was obtained and order was placed in January 2010 at ₹ 328.91 crore but it was still ₹ 13.71 crore higher than cost estimates of ₹ 315.20 crore.

Ministry stated that global tenders were issued in all three cases. Increasing trend on price of equipment and services were noticed in all other packages too. There was approval of competent authority for opening single bids. In RSP, the price obtained after re-tendering was only marginally higher than the estimate. In BSP, some items were excluded as suggested by the vendor to reduce the cost without affecting the performance of plant and re-tendering would have resulted in loss of time and probability of getting higher price was more.

Reply is not tenable. Negotiated price obtained from vendors for three converters in ISP, and three converters in BSP were respectively ₹ 323.66 crore (41 per cent), and ₹ 446.62 crore (50 per cent) higher than consultant's cost estimates updated for price and scope escalation up to opening of price bid. Further, bid for one converter in RSP was submitted in November 2008, and the price bid was opened in January 2009, but price reduction of ₹ 83.57 crore obtained through negotiation concluded in December 2009 cannot be considered as market driven because due to global economic slowdown, prices of equipment which were at their peak in 2008 had started falling thereafter, and price should have been re-discovered instead of going for long negotiations. Further, cost estimates of July 2009 were not updated after conclusion of negotiations to assess whether negotiated price was a fair price or not.

Thus, contracts of total ₹ 2,785.66 crore awarded on a single bid basis lacked sufficient competition, and protracted negotiations and scope reduction after opening of price bid in BSP made the tender finalization process less credible.

3.4.5 Installation of Sinter Plants in BSP, RSP and ISP

As per SAIL's vendor database, there were eight global suppliers for sinter plants but only 2-3 vendors submitted technically compliant bids in global tenders issued during August 2006-July 2007 in BSP, RSP and ISP. L-1 price bids in all three tenders was higher by ₹ 108 crore to ₹ 212 crore than the cost estimates. In BSP, the Company re-tendered and obtained lesser price. But they chose not to re-tender in ISP and RSP. Sinter plants were awarded in all three places to consortium of Outotech and L&T.

Audit noted that in BSP, Sinter plant was re-tendered and L-1 price of ₹ 672.30 crore was also ₹ 120.96 crore higher than cost estimates of ₹ 551.34 crore. There was a gap of 20 months between opening of re-tendered price bid (December 2008) and award of contract (August 2010). Even negotiated price of ₹ 639.30 crore, after five rounds of negotiations up to June 2010, was ₹ 88 crore higher than the original cost estimates.

Ministry stated that re-tender in ISP and RSP would not have fetched a better price, delayed finalization of contract and affected the project schedule. In BSP, negotiations were conducted to bring down the L-1 price.

The reply may be viewed against the fact that MECON had updated the cost estimates up to date of opening of price bids in RSP and ISP and therefore should be considered as a fair market price. But awarded prices were ₹ 186 and ₹ 108 crore higher than the cost estimates. This means the price obtained was not fair. In BSP, the negotiation period of 18 months coincided with the global economic slowdown which started from October 2008, and prices of equipments were falling. Cost estimates of second quarter of 2009 were not updated to reflect the prevailing prices of August 2010 for meaningful comparison with the negotiated price. Therefore, price reduction of ₹ 33 crore obtained in 18 months negotiation could not be considered as market driven.

Thus, negotiated L-1 price bids for contracts of total ₹ 2,031 crore⁵ awarded for installation of sinter plants could not be considered as reasonable, and protracted negotiations rendered the process of tender finalization less credible.

3.4.6 Installation of Coke Dry Cooling Plant in ISP

Table 7 shows that three attempts were made before the contract was finalised on single bid basis for award of Coke Dry Cooling Plant in ISP. The total awarded price obtained in single bid was ₹ 79.69 crore (35 per cent) higher than the MECON's revised estimated cost and ₹ 26.43 crore higher than price bids received in the first tender.

Table7: Details of tenders for coke Dry Cooling plant in ISP

(Price bids net of CENVAT - ₹ in crore)

		MECON Estimates	Bid of GIPROKOKS with BEC and MBE	GIPROKO-KS with BEC	MBE with ACRE China	BEC
First Tender (14.09.2006)		134.62	304.15	-	-	-
Retender (17.09.2007)		231.94	-	359.88	350.57	
Retender (EOI) after split of work into two packages	Main Technological Package (EOI dated 14.04.2008)	227.66	-	307.38	\$	-
	Civil And Structural Package (Retender dated 13.08.2008)	23.23	-	-	-	23.20
	Total	250.89	-	307.38		23.20

\$ A technically compliant bid but MBE did not submit price bid.

⁵ BSP: ₹ 639 crore, RSP: ₹ 688 crore, ISP: ₹ 704 crore

Ministry stated that despite three global attempts, there was only one bid. Ministry reply may be viewed in the light of the fact that as per the Company's vendor database, there were four international vendors. There was split in sole consortium who applied in first tender and MBE and BEC submitted bids separately for main technological package and civil and structural work respectively. MBE did not furnish the price bid leaving single price bid from GIPROKOKS for main technological package making the bid finalisation process less credible. Therefore, it could not be concluded in audit that the single bid price obtained in open tender was the fair market price.

3.4.7 Power and Blowing Station

Power and Blowing Stations were to be set up to support new Blast Furnaces under construction in ISP, RSP and BSP. Turbo blowers for BSP and RSP, and full package of power and blowing station for ISP were awarded to BHEL on a single price bid basis and awarded price was respectively ₹ 71.50 crore (38.8 per cent), ₹139.21 crore (76.6 per cent), and ₹153.41 crore (29.5 per cent) higher than the cost estimates of MECON. There was reduction in the scope of work by ₹ 32.43 crore in ISP after opening of the price bid which is not permitted under the SAIL's Purchase/Contract Procedure and CVC instructions. Ministry attributed higher prices to buoyancy in global market and stated that maximum possible price reduction was achieved through negotiation with BHEL. Re-tendering might not have yielded any result and delays in finalising these contracts could have adversely affected other projects.

Ministry's reply is not acceptable as MECON updated the cost estimates up to date of opening of price bids, and should be considered as fair reflection of market prices. Thus, excess of prices by 29 - 76 per cent over the cost estimates could not be termed as market driven. In BSP, the Company conducted 10 rounds of negotiation with BHEL for 24 months from August 2008 to August 2010. This period was sufficient for re-tendering for obtaining market driven price, instead of awarding the contract at a negotiated price, which was still higher than the cost estimates by ₹ 71.50 crore.

Thus, accepting single price bids of BHEL in three contracts totalling ₹ 1,251.19 crore⁶ as reasonable was not valid and the Company should have resorted to re-tendering to seek sufficient competition and market driven prices.

3.4.8 Eligible bidder was not awarded the contracts

Civil and structural works in following cases were not awarded to eligible bidder resulting in avoidable extra expenditure of ₹ 85.88 crore, and three years time overrun in Medium Structural Mill (MSM) of DSP. Besides, the management actions lacked transparency and justification in these cases.

⁶ BSP: ₹ 255.60 crore, RSP: ₹ 322.93 crore, ISP: ₹ 672.66 crore

1. In a competitive bidding, M/s Era Infrastructure Engg Ltd. (EIEL) was L-1 bidder for a civil work in Bar & Rod Mill in BSP with quoted price of ₹ 54.68 crore who extended validity of their price up to June 2010 at the instance of the Company. However, order was not placed on them and the same work was re-tendered and awarded (December 2010) at L-1 price of ₹ 66.61 crore. There was no reason to allow a technically compliant L-1 bid to expire and to re-tender the work within two months (i.e. in August 2010). Ministry stated that main package was under consideration of Board and EIEL expressed its inability to extend the validity further. Reply is not tenable. Civil work was to precede the main package which was already placed for Board's approval in May 2010. Delay on the Company's part in approving the civil work in first round of tendering not only delayed award of civil work by six months but also resulted in extra expenditure of ₹11.93 crore.

2. M/s EIEL emerged (November 2009) as L-1 in two separate global tenders for the civil work and structural work of new plate mill in RSP. Both were competitive bids as there were nine technically compliant bidders for civil work and seven for structural work. Proposals of Plant level tender committee was forwarded to Project Directorate, Corporate office, New Delhi to obtain the approval of awards for both works to M/s EIEL. The approval for award of contract was not given even within the extended price validity date of 30 June 2010 agreed to by M/s EIEL. After refusal by the contractor to further extend the price validity, the Company re-tendered the work within a month (July 2010) at an extra cost of ₹ 31 crore. M/s EIEL who was technically compliant in first tender was evaluated as technically non-compliant in re-tendering. Ministry stated that civil work was deferred because main package was not finalised and M/s EIEL's work was not good in the sister plants.

Ministry's statement that civil package was deferred due to non-finalisation of main package is not justified because the same work was re-tendered within 23 days from the expiry of validity extended by M/s EIEL. Regarding the performance of M/s EIEL, BSL management shared that there were five reasons for delays in structural work executed by M/s EIEL in BSL, and none of those could be attributed to poor performance of M/s EIEL. Thus, not approving the lowest bid within the price validity period could not be considered as a fair decision which also resulted in extra cost of ₹ 31 crore to the Company.

3. M/s EIEL was evaluated (May 2008) as L-1 bidder at ₹ 178.20 crore for civil and structural works (combined package) for Medium Structural Mill (MSM) in DSP. The Company, however, did not award the contract to M/s EIEL within the validity date of 31 August 2008 despite being the lowest bidder among six technically qualified price bids. Ministry stated that MSM main package was not finalised. But it shows their poor planning particularly when the package was re-tendered within less than two months on 13 October 2008. Audit noted that M/s EIEL was ignored in subsequent re-tenders. In re-tender of the same work, M/s EIEL was again evaluated (February 2009) as L-1 bidder amongst seven technically qualified bidders and negotiated price of ₹ 176.46 crore was less than MECON's estimate of ₹ 184.29 crore. The Company again did not award the work to M/s EIEL. The

work was split (July 2009) to seek rates for the civil work and structural work separately. Even in third tender, M/s EIEL had emerged as L-1 bidder for civil package which was cancelled later as L-1 bid was 9.9 *per cent* higher than estimates. The civil package was re-tendered (fourth time) in July 2010 but the offer of M/s EIEL was not considered. Ministry in their reply stated that due to poor performance of M/s EIEL in other SAIL plants, their offer was not considered. Reply is contestable. M/s EIEL executed structural work of Cold Rolling Mill in BSL and none of five reasons listed by BSL for delays could be attributed to poor performance of M/s EIEL. Moreover, if M/s EIEL's performance was poor, they should have been excluded from the tendering process from the beginning by invoking the extant guidelines of the Company for banning of business dealings.

After exclusion of bids of M/s EIEL from the civil work of MSM in DSP as commented in above paragraph, the L-1 bidder M/s Jain Infraprojects Ltd (JIL) was awarded the civil works contract in October 2010. Thus award of civil work which precede the main technological package and structural work took three years (November 2007-October 2010). Audit noted that M/s JIL failed to complete the civil work after receiving the progress payment of ₹ 45.65 crore. Besides the above work, M/s JIL was also awarded the civil work for Bloom cum Round Caster (BRC), an upstream project for MSM, and two other civil works which they failed to execute and works had to be awarded to other contractors through fresh bidding.

The total cost of civil and structural works of ₹178.20 crore obtained in first tender from M/s EIEL in May 2008 thus increased to ₹ 221.15 crore. Besides, time over run of three years in finalisation of tender for civil work and structural work of MSM adversely impacted the execution of MSM technological package which was to be completed by September 2012. Audit noted that 92 *per cent* of equipment valued at about ₹ 447.81 crore were received, but due to delays in civil and structural work, the erection work started in November 2013 which is now scheduled to be completed by May 2015. Ministry stated that increase in cost was recoverable from M/s JIL as risk purchase amount. Reply is not acceptable because the Company failed to realise risk purchase amount since July 2013, and due to delays in completion of civil and structural work, the MSM project has also got delayed by three years.

3.4.9 Deficiency in tender finalization for Rotary Polishing Line (RPL) in SSP

In SSP, tender specifications and tender finalisation was found to be deficient in respect of the polishing line facility created for quality improvement of cold rolled stainless steel sheets at a cost of ₹ 7.54 crore⁷. The work was awarded (Nov 2007) to M/s IMEAS, Italy on sole quote basis.

After opening the technical bid of M/s IMEAS (the bidder), the scope of work and performance conditions given in the tender were substantially changed at the instance of sole bidder. As per the tender document, only one rotary polisher was needed to produce 1000 tonne/year of mirror finish quality and bright annealed (BA) finish was input material to be

⁷ Capitalisation cost of the project including award cost of Rs. 6.55 crore and finance cost

processed in the RPL. The bidder accordingly quoted ₹ 3.86 crore for one polishing head that used BA finish, as the input material. The bidder indicated that mirror finish could be achieved with input material of 2B finish instead of BA finish, and two independent rotary polishing heads instead of one polisher would be required to produce 1000 tonne/year of mirror finish saleable product. The bidder also insisted to modify the standard defect liability clause. Due to change in scope of work their original price bid of ₹ 3.86 crore was increased to ₹ 6.55 crore. SSP, however, did not re-tender the work and accepted the suggestions of M/s IMEAS which resulted in ordering a vendor specific machine.

Ministry stated that accepted changes were the basic technical requirements to meet the original specification of 1000 tonne/year production capacity. SSP is regularly operating this machine based on market demand. Reply is not acceptable because changes in technical specifications after opening of bids showed that same were deficient. Such changes warranted re-tendering for level playing field for all probable bidders. M/s IMEAS left the work in April 2009 without establishing the performance guarantee parameters, and as output from the machine was not of desired quality (mirror finish), only 23 tonne was produced during five years (2009-14) against capacity of 1000 tonne per annum and 18 tonne could be sold.

3.4.10 Delay in award process for Beneficiation and Pelletisation Plant

This project was a priority project to gainfully utilise dumped iron ore fines and slimes available at Gua ore mines to make pellet. Pellet was to be used as substitute for part of lump ore used in blast furnace burden. Mountain of 38.66 million tonne dumped iron ore fines was also causing environmental damage to the rivers, agriculture land etc. The CAG Report no. AR(C) 11 of 2007 on the Company had reported accumulation and non-disposal of iron ore fines at Gua mines causing environmental hazards. As noted below, this project was initiated in May 2008 but it took more than three years to decide whether beneficiation and pelletisation plants should be tendered as composite work or two separate works.

1. Management decided to set up the beneficiation and pelletisation facility as a composite project and called Expression of Interest (EOI) in July 2008. Two parties were short listed but EOI was cancelled. It was decided to split the project into two separate works, i.e. Beneficiation Plant and Pellet Plant to seek more response from the bidders and speedy execution.

2. Based on response from separate EOIs, the Company issued notice inviting tender on 25 May 2010 for pellet plant in Gua mines. Two bidders were short listed after technical discussion for eight months and were asked to submit price bids. The dates for bid opening were changed twice. Thereafter the tender was cancelled (12 September 2011) and the Company reverted to its July 2008 decision to seek bids for the composite beneficiation and pelletisation facilities. Reasons given included seeking larger participation from the bidders, however audit noted that same reason formed the basis for Company's earlier decision to tender both works separately. Ministry stated that there were technology issues and composite work facilitated integration. The fact remains that failure on the part of the Company to take firm decision regarding floating of composite or separate bids resulted in

loss of 39 months (July 2008 - September 2011) in a project which was supposed to be a priority project.

3. A global tender for composite work for Gua mines (October 2011) resulted in three technically compliant bids. Technical evaluation and discussions took 11 months and only two bidders submitted revised price bid on 18 January 2013⁸. One bidder wanted more time for submission of price bid which was not allowed by the Company on the plea that his e-mail was received after the office hours of 16 January 2013, which reduced competition. L-1 Bid of M/s L& T led consortium at ₹ 2,742.84 crore was accepted. One year later, the letter of award was issued (April 2014) to the L-1 bidder. The Company, however, did not assess whether the price quoted in January 2013 remained competitive in April 2014, after lapse of 15 months.

Thus, delays in tender finalisation adversely affected mining operations at Gua mines. Lease of Gua mines which expired in February 2009, could not be renewed due to non-fulfillment of environmental conditions, and mining operations had to be stopped intermittently during 2009-14, and there was no operation between June 2011 - April 2013 and August 2014 - November 2014. Ministry stated that application for renewal was submitted on time and the same is under active consideration of the State Government. The fact remains that mining operations were adversely affected due to non-renewal of mining lease.

Recommendation:-

- 2. The Company may adequately document the lessons learnt from the ongoing implementation of modernisation and capacity expansion plan. This would be a useful document which would serve as a guide for future expansions.**

⁸ The bid opening date was re-scheduled from 17th January to 18th January 2013.

Chapter IV: Project Execution

As commented in the previous chapter, the tender finalisation process was not efficient. Average time taken between in-principle approval and final approval was 37 months in 153 contracts. There was therefore an urgency to execute the works in a timely manner so that the Company could go into production without further delays. We, however, noted that project execution suffered inordinate delays on account of poor planning and absence of effective monitoring.

4.1 Delay in execution of Projects

All the 104 contracts of ₹ 100 crore or more were not completed within the scheduled completion time stipulated in the contracts. As could be seen from the Table 8 below, delays in 21 contracts was between 1-2 years, in 39 contracts between 2-3 years, while in 38 contracts it was more than three years.

Table 8: Details of delays in various packages across the plants*

Plant	No. of packages verified	No. of delayed packages	No. of packages in which there has been delay of			
			Less than 1 year	1-2 years	2-3 years	More than 3 years
ISP	28	28	-	2	9	17
BSP	33	33	3	11	8	11
BSL	12	12	-	2	4	6
DSP	3	3	-	-	3	-
RSP	24	24	1	5	15	3
SSP	2	2	2	-	-	-
RMD	2	2	-	1	-	1
Total	104	104	6	21	39	38

* Computed from contractual date of completion to date of completion, and in case of ongoing projects, estimated date of completion fixed by the management

There were instances of poor deployment of resources, delays in submission of drawings and supply of equipment, and some contractors did not complete the job and left mid-way. The contractors redeployed their manpower to other sites in some cases. Audit noted that contractors' eligibility criteria were relaxed to attract sufficient competition. Overbooked capital goods industry/reputed civil and structural contractors had overstretched themselves, hence they could not effectively complete the projects within the contractual time.

However, there were avoidable delays directly attributed to the Company because they originated from inadequate planning prior to award of the contracts. Excessive reliance on the consultant's capacity without adequate oversight over their work; delays in handing over of sites and work fronts to the contractors; and split of the projects into number of unmanageable sub-packages had largely contributed to much of the delays. A number of projects could not be executed in synchronised manner as planned, resulting in idle capacity.

4.1.1 Deficiencies in the performance of Consultant

1. MECON was the consultant-cum-project manager for ISP projects and the total fees for this work was ₹ 302.25 crore. We noted several lapses on the part of MECON. Some of the lapses on the part of MECON which affected overall commissioning of the plant are as under:

- MECON did not conduct soil investigations of brownfield area where some MEP projects⁹ were planned despite reference from the ISP management. It was noted during the execution of the contract that huge mass of slag, cast iron/steel boulders, scraps, skulls etc. was blocking the major portion of the area identified for downstream projects. Removal of such material resulted in net delays of 20 months in execution of civil and structural work. As a result, completion schedule of BOF and CCP in ISP was also significantly delayed. Consequently, completed upstream projects like BF and Oxygen Plant were not utilized at all, and SP, Wire Rod Mill and COB were utilized 3-4 per cent, 7 per cent and 61-36 per cent respectively, of their rated capacity, during 2013-14 and 2014-15 (December 2014).

Ministry stated that MECON had followed soil quality in the plant area as given by M/s CEMINDIA Company Ltd but their report did not indicate quantity of slag, boulders etc. Only BF and Oxygen Plant could not be put to use which they expected to start within a month's time. Ministry reply is not tenable. M/s CEMINDIA in its report of 1989-90 clearly stated that this area was not suggestive of placing open foundations of important nature and vulnerable structures, and the bearing capacity and settlement of only non-plant and normal building foundation was suitable for construction. Plant management and MECON, however, chose to ignore the findings of M/s CEMINDIA, and no soil testing was conducted. Thus the causes of delays were within management control and were not unforeseen as contested by the management.

- MECON could not finalise and/or approve design and drawings of major technological packages and civil and structural projects in time. Follow-up and coordination with the contractors was poor and there were delays in inspection of work and certification of measurements of work in most cases. Ministry stated that delay in supply of drawings at no point attributed to delay in execution as on all occasions more number of drawings were available than required for execution. Reply has to be seen in the context of the findings of the management committee which noted delays of 6-12 months, on the part of MECON in final approval of both basic and detail designing in most of major technological packages. Layout of plant in most of the packages was revised a number of times leading to delays in execution of projects. Technical and commercial decisions at site were also delayed due to inadequate supervisory manpower.

⁹ Basic Oxygen Furnace (BOF), Continuous Casting Plant (CCP), Mills, Lime and Dolomite Calcination Plant

2. Civil work for continuous casting plant (CCP) and basic oxygen furnace (BOF) and Structural work for CCP in RSP were awarded in August 2008 and was required to be completed by February 2010, but Consultant submitted only 29 *per cent* and 90 *per cent* of total drawings respectively up to April 2010. Delays in submission of drawings affected the work schedule of the contractors. Both the projects have been delayed by about five years (up to February 2015). Ministry stated that delays in submission of drawings happened because load data were required from suppliers of equipments, but equipments were ordered later during October 2008 to August 2012. Drawings were also to be retro-fit with the existing civil and structural foundations. Reply is not tenable. Civil and structural work precedes construction of main plant. Synchronisation of such project activities were required to be planned before award of the work and therefore were within management control.

3. There were delays in submission and approval of drawings for all the main technological packages reviewed by audit in BSP. Delays were due to inadequate assessment of bills of quantity and scope of work which resulted in frequent amendment of work orders and plant layout. Ministry admitted that the onus for submission and approval of drawings was of the contractors and consultants and they had to depend on expertise of the consultants.

4. In civil work of Basic Oxygen Furnace in RSP, centre line of civil foundation of converter was shifted by 275 mm towards the tapping side because drawing provided by MECON did not give complete information about the non-symmetry of column axis. The Company had to incur extra expenditure of ₹ 1.55 crore for replacing the bearing pedestal but no recovery was made from the consultant. While accepting the observation, Ministry stated that MECON could have been more vigilant before issuing the final construction drawings.

In absence of formal terms of reference and penalty clause, the accountability of MECON was not enforceable. Ministry stated that scope of consultancy services was specifically defined. Reply has to viewed against the fact that MECON was allowed to work on ad-hoc basis from 2006 until December 2011/January 2012 when plant-wise formal agreements were signed indicating scope of work and payment terms. Except liquidated damage for delays in deliverables, there was no penal clause to safeguard the Company against cost overruns attributable to the Consultant.

4.1.2 Delays in handing over of site and work front to the contractors

Preparing sites and fronts suitable for execution of main technological packages were critical for early start of the main technological and erection packages. However, for many projects the sites were not 'ready to handover' at the time of award of contracts. Table 9 shows that in 14 contracts of ₹ 7,472 crore, there was 11 months - 53 months delay in handing over the front/site to the contractors for construction and erection of main plant.

Table 9: Details of projects showing delay in handover of sites and work front to contractors

Plant	Name of the project	Contract Value (Rs. in crore)	Completion (mm/yy)		Delay in (Months)	
			As per contract	Actual/estimated	Overall completion	Providing site/ front
BSP	Coke Oven Battery - 11	400	01/11	09/14	44	15
	Universal Rail Mill	1,174	06/13	06/15	24	18
	Bar and Rod Mill	406	08/12	06/15	34	18.5
RSP	BOF	329	05/12	06/14	25	20
	New Plate Mill-Rolling	732	02/13	06/14	16	11
	New Plate Mill-Finishing	519	02/13	03/15	25	27
	3 rd Slab Caster	482	02/11	06/13	28	16
	COB VI Proper	368	02/11	4/13	26	12
	Slab Re-heating Furnace for NPM	83	08/12	06/14	22	13
ISP	Ore Handling Plant	535	05/10	01/13	32	12
	Basic Oxygen Furnace	1,121	12/10	03/15	51	22
	Continuous Plant	448	07/10	03/15	56	21
	Universal Section Mill	696	12/09	02/15	62	53
BSL	Main Receiving Station	179	05/10	01/16	68	25

Ministry stated that brownfield projects were saddled with unknown and unforeseen conditions. Except in case of ISP, delays in handing over sites to contractors have been primarily due to synchronisation with existing infrastructure/operating facilities like site levelling, dismantling, clearance and relocations of the existing old structures/entities. Deforestation of some area was also required in BSP. Reply is not tenable as causes of delays were within management control and were not unforeseen. The MEP projects were to be set up on brownfield at their existing plants site and suitability of proposed sites should have been known to management at project planning stage itself. Clearance of area, dismantling and relocations of the existing old structures/entities were to be completed well before or synchronised with the term and conditions of the technological contracts. Delays in providing sites/fronts for these projects thus caused considerable delay in integrated commissioning of these plants.

4.1.3 Split of the projects into number of un-manageable sub-packages

Awards of a complete package to one contractor or consortium of contractors have many advantages like single party responsibility, better co-ordination, and timely completion of the project. It was however noted that SAIL often split the works which resulted in delays. Some cases are analysed below.

1. The supply of equipments and erection of new Basic Oxygen Furnace (BOF) in BSP was awarded to two different contractors for ₹ 1,335.92 crore and ₹ 50.61 crore respectively. Though 92 per cent of supply of imported equipment was completed and paid by August 2011, the overall completion of BOF is yet to be completed (February 2015) mainly due to non-completion of work by erection contractor. It was noticed that initial erection contract was terminated due to non-performance, and had to be re-tendered. Audit also noted that a composite contract was initially advised by the consultant.

2. Work of third Slab Caster in RSP was awarded (October 2008) at a total price of ₹ 482.32 crore with 28 months for completion i.e., by 23 February 2011. The contractor had supplied 92 per cent of equipment up to March 2011. However, the erection work was delayed due to non-completion of civil work which was to be completed by another contractor.

Ministry stated that going in for a turnkey contract for complete project would have been easier to manage than splitting them in multiple packages. But at that point of time, all the international bidders had sufficient work in their hand. Split of projects into multiple packages was resorted to seek cost reduction by maximum participation of bidders which are now causing interface problems and delays. Ministry acknowledged that splitting of contracts into multiple packages caused interface problems and delays. Such situation arose because there were limited numbers of international suppliers and the management chose to tender all the projects of proposed expansion capacity simultaneously in already overbooked capacity which allowed the equipment suppliers to dictate techno-commercial terms.

4.1.4 Non-synchronization of projects

Expansion of integrated steel making capacity involves installation of production facilities in upstream and downstream in a synchronized manner. Any disruption at any stage in the full production stream starting raw material handling system to installation of rolling mills means some facilities could be completed and sitting idle while others are being in work-in-progress. Sequence and timelines for steel production streams given in Table 10 below shows that the synchronization was not achieved.

Table 10: Statement showing projects in production stream not completed in synchronized manner

Plant	Timelines forward/execution	Sequence of steel production stream starting from RMH (mm/yy)						
		RMH	CO	SP	BF	BOF	CCP	RM
ISP	Date of Award	02/08	09/07	09/07	09/07	02/08	09/07	09/07
	Scheduled completion	05/10	07/10	03/10	04/10	12/10	07/10	02/10
	Actual/Likely completion	01/13	01/13	01/13	04/13	09/15	03/15	04/13
BSP	Date of Award	04/10	09/08	08/10	08/10	10/08	04/09	08/10
	Scheduled completion	04/12	01/11	12/12	12/12	08/11	12/11	06/13
	Actual/Likely completion	03/15	09/14	03/14	09/15	03/16	03/16	06/15
RSP	Date of Award	07/08	07/08	07/08	07/08	12/09	09/08	07/10
	Scheduled completion	02/11	02/11	03/11	04/11	05/12	02/11	02/13
	Actual/Likely completion	04/13	04/13	07/12	08/13	06/14	06/13	06/14

RMH= Raw Material handling facility; CO= Coke Ovens and associated facility; SP= Sinter Plants; BF= Blast Furnace; BOF= Basic Oxygen furnace; CCP= Continuous Casting Plant; RM=Rolling Mills

Table shows that:

1. Synchronization issue was fairly addressed in ISP at the time of awarding the contract and fixing the contractual completion period. However, the avoidable causes as noted in subparagraph 1 below Para 4.1.1 of this report were not addressed at the planning stage. As a

result, upstream plants, namely RMH, COB, SP, and BF were ready for intended use by January- April 2013, but could not be utilized until December 2014, when BOF and CCP were partially completed. Full completion of CCP and BOF was scheduled for March and September 2015 respectively.

2. In BSP, at the contract award stage, non-synchronization of production facilities was observed wherein mid-stream facilities like COB, BOF and CCP were scheduled to be completed earlier (2011) than other upstream and/downstream projects (like RMH, SP, BF & RM) which were scheduled for completion in 2012 and 2013. Due to delays in execution of the projects, downstream projects would be ready 9 to 18 months later than the upstream facilities leading to idle production capacity during the intervening period.

3. Some of the facilities in RSP were idle because of non-completion of upstream and/or downstream facilities. Sinter plant was completed in July 2012 whereas Ore Bedding and Blending Plant in the upstream were stabilized by February 2014. Coke Oven Battery was in operation from April 2013 but Blast Furnace in the downstream became operational in August 2013. Capacity of the Blast Furnace was not fully utilised until June 2014 when Basic Oxygen Furnace in the downstream facility became operational. Due to delay in completion of Basic Oxygen Furnace, the slab caster was idle for one year after it was completed in June 2013. The new plate mill which was expected to convert the slab into finished product was completed after one year of completion of its upstream facility.

4. The ID Fan System was to supply converter gas to the Gas Holder Complex. Therefore, both the projects of BSL were required to be completed simultaneously. Tenders were invited for both the projects in May 2007 but the contract for Gas holder complex was awarded in September 2008 and ID Fan System in December 2012. ID fan system was re-tendered in November 2009 after a delay of two and half years and could be finalised through another re-tendering in July 2011 after eligibility criteria were relaxed. Though the Gas Holder Complex was completed in December 2012 and ready for testing and commissioning, the same was lying idle awaiting the completion of its interlinked project ID Fan Complex. Thus ₹ 86.73 crore incurred on Gas Holder Complex remained idle and benefit envisaged from both the projects amounting to ₹ 53.44 crore per annum could not be achieved.

5. New Main Receiving Station (MRS) of 220 KV level along with 132 KV switchyards and auxiliary facilities, constructed at the cost of ₹ 199.85 crore in BSL, became operational in January 2014, for receiving power supply through new 2X250 MW Power Plant of M/s BPSCL. Since M/s BPSCL did not construct the power plant, BSL approached (June 2012) DVC to supply power at 220 KV level from its Chandrapura Switchyard, which is likely to take another three to four years. Pending supply of power at 220 KV level from DVC, this facility is used by stepping down to 132 KV, Thus the new MRS is being made operational at sub optimal level only and is not being used for the purpose it was constructed.

6. A Power Distribution package meant for SMS-II and CCD shops in BSL was awarded in October 2008 on turnkey basis at a contract value of ₹ 18.41 crore. The work was

completed in January 2011 but SMS-II and CCD shops have not been completed. Management claimed that power is supplied for testing and commissioning of various ongoing projects.

Ministry stated that initially the projects were to be tendered and executed in synchronised manner. Non-synchronization was mainly due to re-tendering and break-up of packages to seek competitive prices in an overbooked equipment suppliers market and therefore was beyond their control. Eligibility criteria were also relaxed to have more bid participation. Completed plants in RSP were put to hot trial to avoid contractual complications and there was scope for using output of new facilities in the existing integrated steel plants while taking some existing units under repair. The fact remains that the Company failed to ensure synchronisation of various production facilities in ISP, BSP and RSP which was crucial for achieving the envisaged capacity expansion of the respective steel plants.

4.1.5 Delay in completing custom formalities

Sinter plant in BSP was awarded (August 2010) at a price of ₹ 639.30 crore was to be completed by December 2012. However, despatch clearance for major imported items was obtained in September 2012. Consequently the items were received (December 2012 – March 2013) in Bhilai, and the work was completed in March 2014. Ministry stated that issue of registration certificate was delayed by Customs department because it took time to persuade the custom officials to exclude value of design engineering. Reply is not tenable. The contract was not timely registered with Customs which caused major delay.

4.1.6 Non-installation of Sendzimir Mill-3

A Sendzimir or Z Mill was ordered for SSP (September 2007) on M/s Waterbury Farrel, Canada, (WF) led consortium with an Indian agency for ₹ 102.26 crore to produce 88,000 cold rolled stainless steel, to be completed by October 2009. While transporting the imported Z Mill from Chennai Port to Salem, the vehicle met with an accident in May 2010 resulting in damage to the equipment. Despite repeated attempts by the Company, the party did not complete the job. Thus, ₹124.27 crore incurred so far remained unfruitful.

Ministry stated that they made repeated attempts to get the machine repaired and balance work done by the vendor but they could not succeed and performance guarantee was encashed. The balance work would cost at least ₹ 48 crore and it will be made operational within 12 months. It is evident from the reply that the Company failed to take prompt action in terminating (October 2012) the contract at the risk and cost basis. The re-tendering of the balance work was under process; hence the completion of the project would be further delayed.

4.2 Risk and cost Purchase Action

To safeguard the interest of the organisation against the negligence of the contractors, every contract included a clause 'At the risk and cost of the Contractor'. The contracts were

terminated at the risk and cost of the contractor in eight cases. The risk and purchase notices were issued two-three times to seek attention of the concerned agency for expediting the progress in 10 technological packages of RSP, however, the notices had no effect on the performance of the contractors and the delays in completion could not be contained. M/s Hindustan Steel Construction Ltd. (HSCL) and M/s Sino Steel Industry & Trade Group Corporation, China (SSIT) against whom risk and cost purchase penalty was imposed for incomplete work in ISP were also executing other contracts in the same Plant. However, unrealised risk and cost purchase amount was not recovered from their running bills or dues from the other contracts. In ISP, M/s SSIT was paid ₹ 1.44 crore (October 2011 to June 2012) of pending claim after deciding to terminate the contract, and initiating a separate tender (October 2011) for the balance work.

Audit noted that the risk and cost purchase clause was neither deterrent for the contractors to complete the job expeditiously nor could it ensure realisation of the risk purchase cost from the contractors. This was because the payment to the contractors was linked to the progress of work (which is considered as advance) and if they become non-performer, they could see not much financial stake except to the extent of bank guarantee which is only five per cent of the contract. The Company did not strengthen the contractual provisions while awarding the MEP projects involving long gestation period.

Ministry stated that besides forfeiture of bank guarantee, there were other safeguards like debarring from future participation, holding of construction equipment. There were limited number of suppliers/project executors for high value technology projects items and the Company had to go for persuasions as there was no surety for alternatives. Recovery of risk purchase action from contractors' running bills of other projects would have adverse impact on progress of those projects. The fact remains that the Company failed to ensure its financial interests, and in the eight cases where the risk purchase action was initiated, the Company realised ₹ 30.55 crore from encashment of bank guarantee against the total claim of ₹ 118.90 crore. Further, no action was initiated to blacklist the non-performing contractors from future work.

Recommendation:-

- 3. The Company may revisit the existing policies, procedures and practices with regard to project management, contract procurement and execution, and strengthen them to adequately mitigate the risks of time and cost overrun in future ventures.**

Chapter V: Project Monitoring

Implementation of MEP projects at plant levels was monitored by ED (Projects) and CEO of the respective plants. Functional directors and Chairman reviewed the progress during plant visits and senior management meetings. A Board sub-committee (BSC) was constituted in July 2006 to review/monitor the capital projects. Board of Directors of the Company reviewed the projects initially when these projects were submitted for approval of capital investment within their delegation of authority. It also reviewed the progress of the projects through the minutes of the BSC meetings. The Board was also being informed of physical and financial progress of capital schemes. Ministry of Steel also reviewed the progress of the projects in quarterly meetings and monthly reviews at Secretary Level. Ministry of Statistics and Programme Implementation, Cabinet Secretariat/Prime Minister Office also reviewed progress at regular intervals. These meetings, however, had no significant impact in containing delays as noted below.

5.1 Inadequate monitoring of MEP projects

1. Delays were observed at every stage of project management cycle as reported in the preceding chapters. Besides significant delays in tender finalisation (refer Paragraph 3.1), execution of all the major projects has been delayed by 3 years- 6 years (refer Paragraph 4.1) from their contractual date of completion. In the course of eight years of ongoing implementation of MEP, the Company revised their completion dates a number of times. Table 11 below shows the dates of the integrated commissioning of expanded production facilities extended on year to year basis.

Table 11: Changes in overall completion of the MEP projects during seven years

(mm/yy)

Plants	2007 as committed to Prime Minister Office	March 2009	March 2010	March 2011	March 2012	March 2013	March 2014	December 2014
ISP	02/10	07/10	06/11	03/12	03/13	12/13	06/14	03/15
BSP	09/10	11/11	03/13	03/13	09/13	03/14	03/15	09/15
BSL	08/10	12/10	12/11	12/11	10/12	12/13	05/14	06/15
DSP	10/10	-	12/12	12/12	03/13	12/13	12/14	05/15
RSP	10/10	04/11	03/13	03/13	03/13	12/13	09/14	03/15
SSP	03/10	03/10	06/10	09/10	09/10	09/10	09/10	09/10
Cumulative CAPEX (₹ in crore)		3,799	12,056	21,052	30,675	39,279	48,189	51,872

2. Audit noted that the Company had reported (May 2013) to the 'BSC on monitoring of the major projects' that new Coke Oven Battery, Sinter Plant, Wire Rod Mill and Power Blowing Station in ISP were commissioned during the year 2012-13. But it later claimed that there were major defects in these plants and therefore should not be considered as commissioned. The Company intimated to audit that the dates for completion of these projects as 'ready to intended use' should be the dates on which these defects were rectified and not the dates intimated to the Board of Directors or its sub-committee. It would be seen that there was no definiteness as to the date on which a project was completed and different dates were being reported to different stakeholders.

3. Audit noted that as per 'status report of on-going projects' as on 31 December 2014, integrated commissioning in ISP and RSP was to be completed in March 2015. However, the status report for the month ended 31 January 2015 showed it as completed in December 2014.

Ministry stated that project management is a complex task which may have many contingencies. Planned completion schedule was based on assumption that all activities would be completed without delay. Delays in completion of project occurred because these assumptions could not be achieved. Projects were closely monitored at all levels. There may be some inaccuracy in estimation of completion time but delays and slippages in completion schedule were not within management control as explained in management replies to relevant audit paragraphs and therefore should not be seen as failure of monitoring agencies.

Reply of the Ministry may be viewed against the following facts:

1. Board sub-committee (BSC) met thrice during 2011, 2012 and 2013 and twice during 2008 but met only once in 2007, 2009 and 2010. In its sixth meeting held on 3 July 2009, the BSC desired to meet every month to review the status of implementation of at least one plant with the Head of the Plant. But seventh BSC meeting was held eight months later on 31 March 2010. It was noted that in the meetings of the BSC the Plant management made a presentation of the status of implementation of MEP projects, reasons for delays and action taken, and commercial disputes with contractors. The BSC sometimes sought some more information to be presented in next meetings; noted with concern the delays and revised dates of implementation for various MEP projects; suggested to analyse delays to avoid their occurrence, deploy the experienced officials, and select right contractor; and emphasised for early completion of projects. Some of suggestions were repeated in subsequent meetings. BSC discussions, however, did not result in actionable points and responsibility centres for implementation of BSC suggestions. BSC listed actionable points in its 11th meeting held in March 2012 for the first time. Implementation status of BSC's action points were not discussed in the subsequent BSC meetings. We noted that the BSC meetings were a forum for information sharing and did not serve as a centre for taking decisive action for timely completion of projects.

2. Though minutes of all the BSC meetings were submitted to Board of Directors as one of the agenda items, there was no deliberation on them and matter was marked as noted by the Board. Out of 77 Board meetings held during January 2008 and 11 August 2014, the physical and financial progress of capital projects were either not discussed or merely noted in 49 Board meetings. There was no discussion on progress of MEP projects in the Board meetings held between September 2013 and August 2014. During this 12 month period, integrated commissioning was progressively extended by 18 months - 24 months. In meetings where Board chose to discuss MEP projects, deliberations were no better than what we noted for the BSC meetings. Plant Heads or Director (Technical) or Director (Project) presented the status of implementation of MEP projects to the Board. However, no concrete action plan with responsibility centres was devised to fast track the completion of projects.

Thus, oversight of Board of the Company and its sub-committee over implementation of MEP projects was not effective and they failed to ensure timely completion of projects.

5.2 Impact of delays in completion of MEP projects

The Company's goal was to take advantage of the buoyant market conditions by going early into steel production. As shown in Table 12, the Company failed to take advantage of buoyancy in steel market as the integrated commissioning of capacity expansion projects in five integrated steel plants could not be completed by the year 2010 as planned. The MEP is now scheduled for completion during 2015.

Table 12: Planned/likely completion, CAPEX and annual gross margin envisaged from MEP

(₹ in crore)

Plant	Completion date (mm/yy)			Capex as of 31 March				Capex as of 31 December	Annual Gross Margin envisaged from MEP Projects
	Planned		Estimated	2011	2012	2013	2014		
	*	**	#					2014	
ISP	02/10	12/11	03/15	10,618	13,088	14,481	15,788	16,641	2,549
BSP	09/10	03/13	09/15	2,448	5,180	8,534	12,492	13,835	3,030
BSL	08/10	12/11	06/15	1,874	2,625	3,470	4,591	4,952	528
DSP	10/10	12/12	05/15	218	751	1,522	2,153	2,455	833
RSP	10/10	03/13	03/15	4,030	6,841	9,032	10,870	11,682	2,498
				19,188	28,485	37,039	45,894	49,565	9,438

*As committed by Ministry of Steel to the Prime Minister Office; ** Revised planned completion dates communicated to Ministry of Steel in 2011; # Likely completion of integrated commissioning last estimated in December 2014 by SAIL management.

Audit noted that despite global economic slowdown, there was growth in domestic demand for steel products. Total finished steel production in India had increased from 58.09 million tonne in 2007-08 to 78.47 million tonne in 2013-14 and total consumption increased from 56.39 million tonne in 2007-08 to 83.78 million tonne in 2013-14 (about 50 per cent). Per capita use of steel in India in term of per kg of crude steel had also increased from 47.3 kg in 2007 to 63.9 kg in 2013.

There was sufficient market for SAIL to sell its steel products had the MEP projects been completed in 2010 as planned. By failing to complete the MEP projects within the planned period, the Company ceded space to its competitors. SAIL's market share in saleable steel had decreased from 25 per cent in 2004-05 to 14.6 per cent in 2013-14.

As shown in Table 12, the Company had envisaged annual gross margin of ₹ 9438 crore from MEP. Due to delays in completion of capacity expansion by over four years, obtaining envisaged annual gross margin has also got delayed. Cash and bank balance which was ₹ 22,436 crore at the end of March 2010 has dried up to ₹ 2,305 crore at the end of March 2015

and profit before tax reduced from ₹ 10,132 crore in 2009-10 to ₹ 2,359 crore in 2014-15. This could largely be attributed to delays in obtaining return on their substantive investment (₹ 49,565 crore as of 31 December 2014) made in implementation of MEP in five integrated steel plants.

While accepting delays in implementation of MEP, Ministry also stated that some facilities of the production stream have already been put into operation. Reply is not tenable. Audit notes that in five integrated steel plants, some individual projects of integrated production stream were commissioned, but capacity utilisation was very limited to keep the commissioned plants going and the output was used internally. There has not been overall increase in production since 2007-08. Production of hot metal, crude steel, pig iron and saleable steel in 2007-08 was 15,199 mt, 13,964 mt, 441 mt and 13,044 mt whereas production of these products in 2013-14 respectively was 14,447 mt, 13,579 mt, 223 mt, and 12,880 mt¹⁰, which is lower than the production of 2007-08.

Recommendation:-

- 4. The Company may strengthen their project monitoring system at all levels. There should be appropriate monitoring mechanism at the Plant and the Board level that would not only monitor but should have the authority to take corrective action as well as fix responsibility at each stage of delay.**

¹⁰ Sources: Annual Reports of the company

Chapter VI: Conclusion and Recommendations

6.1 Conclusion

The modernisation and expansion plan (MEP) was formulated by the Company in the backdrop of a buoyancy in the steel market and the Company aimed to take advantage of the prevailing market conditions to increase steel production. The MEP aimed at enhancing SAIL's market share; improve profitability through higher productivity, cost reduction, value addition in its products, and higher customer satisfaction. It also aimed at improving the availability of key raw materials; and alleviating infrastructure bottlenecks.

The Company decided (2006-07) to implement the entire MEP to enhance hot metal production capacity from 13.83 million tonnes per annum (mtpa) during 2006-07 to 23.46 mtpa by including corresponding upstream and downstream production facilities across all the steel plants. It also compressed the implementation period by two years to year 2010 against 2012 as planned in the Corporate Plan.

It was, however, noted that the Company could not implement the MEP within the planned timelines. Capacity expansion could only be completed by September 2010 in only one of the Steel plants namely Salem Steel Plant. The capacity expansion projects in five integrated steel plants have been delayed by over four years and are now scheduled for completion during 2015. In view of such delays and the fact that the MEP would only be completed by 2015, we are unable to comment as to how far SAIL succeeded in achieving the objectives of increase in steel production, reduction in costs, higher productivity, removal of infrastructure bottlenecks etc.

We, however, noted a number of issues which have been discussed in the report and these are in the nature of interim findings. We would be in a position to present a full view regarding the impact of MEP only after the modernisation and expansion is completed across all the plants. Main audit findings are as under:

6.1.1 Against planned increase of 9.63, 8.56, and 9.16 mtpa in production capacity of hot metal, crude steel and saleable steel respectively, the company could add 1.86 mtpa (0.66 mtpa in BSL and 1.20 mtpa in RSP) of hot metal; 1.24 mtpa (1.06 mtpa in RSP and 0.18 mtpa in SSP) of crude steel; and 1.30 mtpa (1.14 mtpa in RSP and 0.16 mtpa in SSP) of saleable steel up to March 2014. Table 13 below shows capacity of hot metal, crude steel and saleable steel at the beginning of the MEP, total capacity envisaged after completion of ongoing MEP, and total capacity as of March 2014.

Table 13: Capacity envisaged after completion of MEP and achieved up to March 2014

(Production Capacity in million tonne per annum)

Plant	Total capacity at the beginning of MEP			Total capacity after completion of ongoing MEP			Total capacity as of March 2014		
	Hot Metal	Crude Steel	Saleable Steel	Hot Metal	Crude Steel	Saleable Steel	Hot Metal	Crude Steel	Saleable Steel
ISP	0.85	0.50	0.42	2.91	2.50	2.39	0.21@	0.50	0.42
BSP	4.08	3.93	3.15	7.50	7.00	6.56	4.70#	3.93	3.15
BSL	4.59	4.36	3.78	5.77	4.61	4.18	5.25	4.36	3.78
DSP	2.09	1.80	1.59	2.45	2.20	2.12	2.09	1.80	1.59
RSP	2.00	1.90	1.67	4.50	4.20	3.99	3.20	2.96	2.81
SSP	-	-	0.18	-	0.18	0.34	-	0.18	0.34
ASP	-	0.23	0.18	-	0.48	0.43	-	0.23	0.18
VISP	0.22	0.12	0.10	0.33	0.23	0.22	0.22	0.12	0.10
Total	13.83	12.84	11.07	23.46	21.40	20.23	15.67	14.08	12.37

Increase in 0.62 mtpa was due to up-gradation of Blast Furnace-7 completed in 2006-07. It was not included in our analysis as this was not part of MEP, @ Reduction was due to closure of three old Blast Furnaces.

The Company had spent ₹ 16,641 crore in ISP, ₹13,835 crore in BSP, and ₹ 2,455 crore in DSP up to December 2014, without any capacity increase in hot metal, crude steel and saleable steel. RSP has however shown an increase in hot metal, crude steel and saleable steel. In BSL, ₹ 4,952 crore were spent but there was capacity increase in hot metal only and there was no addition in crude steel and saleable steel capacity.

6.1.2 Due to non-synchronisation in projects execution, some facilities were completed and sitting idle while others were in work-in-progress. Capacity utilisation of some commissioned projects was very limited to keep the plants going and the output was largely used internally or sold as semi-finished. Due to delays in MEP implementation, major techno-economic indices envisaged in the MEP like blast furnace productivity, coal to hot metal ratio and fuel rate could not be achieved as on March 2014.

6.1.3 Total Steel Production capacity of crude as well as finished steel in the country grew substantially during the period 2007-08 to 2013-14 as given in Table 14. Likewise, steel consumption in the country also rose sharply as would be seen from Table 14. The market conditions were absolutely favourable for SAIL to sell its steel products had the MEP projects been completed by 2010 as planned. By failing to complete the MEP projects within the planned period, the Company ceded space to its competitors and SAIL's market share in saleable steel had decreased from 25 per cent in 2004-05 to 14.6 per cent in 2013-14.

Table 14: Steel production capacity, actual steel production and consumption in India

(Quantity in million tonnes per annum)

Total for India	2007-08	2013-14
Crude Steel Capacity	59.85	101.02
Finished steel production	58.09	78.47
Steel Consumption	56.39	83.78
Per capita steel use (Kg crude steel)	47.3	64.0

6.1.4 The Company had made financial projections which showed annual addition to gross margin of ₹ 9,438 crore from MEP. Due to delays in completion of capacity expansion by over four years, the finances of the Company were severely strained. Cash and bank balance which stood at ₹ 22,436 crore at the end of March 2010 has dried up to ₹ 2,305 crore at the end of March 2015, and profit before tax reduced from ₹ 10,132 crore in 2009-10 to ₹ 2,359 crore in 2014-15. Such dip in the financials could largely be attributed to delays in obtaining return on their substantive investment (₹ 49,565 crore as of 31 December 2014) made in implementation of MEP in five integrated steel plants.

6.1.5 The project planning, tender finalisation, project execution, and monitoring of MEP implementation were inefficient at all stages of project management cycle and across all the plants. Main causes which contributed to considerable delay in completion of MEP projects are as under:

1. Simultaneous implementation of all the MEP projects across all plants within the compressed timelines, coupled with limited spare capacity with the equipment suppliers and contractors had led to insufficient competition and significant increase in cost of MEP implementation. There was insufficient competition and 20 contracts of ₹ 100 crore or more totalling ₹ 10,556 crore were awarded on single qualified bid basis and other 20 contracts valuing ₹ 6,600 crore were awarded on two qualified bid basis. The prices at which such contracts were awarded were significantly higher than the estimated costs updated by the consultants for all scope creep and price escalation up to opening of the price bids.

2. While planning for MEP in July 2008, the Company did not factor in fund requirement for capacity enhancement of mines. To meet the additional capital expenditure of ₹ 10,264 crore for capacity enhancement of mines, the Company had to scale down (June 2009) the scope of MEP to ₹ 64,886 crore and MEP projects valuing ₹ 18,375 crore planned for BSP, BSL, DSP and RSP were excluded/deferred. Selection of MEP projects to be deferred was purely adhoc. The Company deferred only such projects which were not ordered at the time of review in June 2009. This created mismatch among integrated production streams.

3. Tender finalisation and contract execution was inefficient. Out of 153 projects of ₹ 20 crore and above awarded during 2008-13, the Company took more than two years in 25 cases and more than three years in 87 cases, in completing the tender finalization process.

4. All the 104 contracts of ₹ 100 crore or more were not completed within the scheduled completion time stipulated in the contracts. Delay in 21 contracts was between 1-2 years, in 39 contracts it was 2-3 years, while in 38 contracts it was more than three years. In 14 main technological contracts, there were delays ranging from 11 months to 53 months in handing over the front/site to the contractors for construction and erection of main plants.

5. Oversight of SAIL Board and Board sub-committee (BSC) on monitoring capital projects over implementation of MEP projects was not effective and they failed in containing the delays.


6.2 Recommendations

We recommend that:

1. The Company may review its policy for appointment of consultants through nominations. Selection of consultants through open tender would provide opportunity to conduct structured assessment of their project management capacity as well as to obtain fair market price.
2. The Company may adequately document the lessons learnt from the ongoing implementation of modernisation and expansion plan. This would be a useful document which would serve as a guide for future expansions.
3. The Company may revisit the existing policies, procedures and practices with regard to project management, and contract procurement and execution, and strengthen them to adequately mitigate the risks of time and cost overrun in future ventures.
4. The Company may strengthen their project monitoring system at all levels. There should be appropriate monitoring mechanism at the Plant and the Board level that would not only monitor but should have the authority to take corrective action as well as fix responsibility at each stage of delay.

New Delhi

Dated: 23 June 2015



(PRASENJIT MUKHERJEE)

Deputy Comptroller and Auditor General
and Chairman, Audit Board

Countersigned



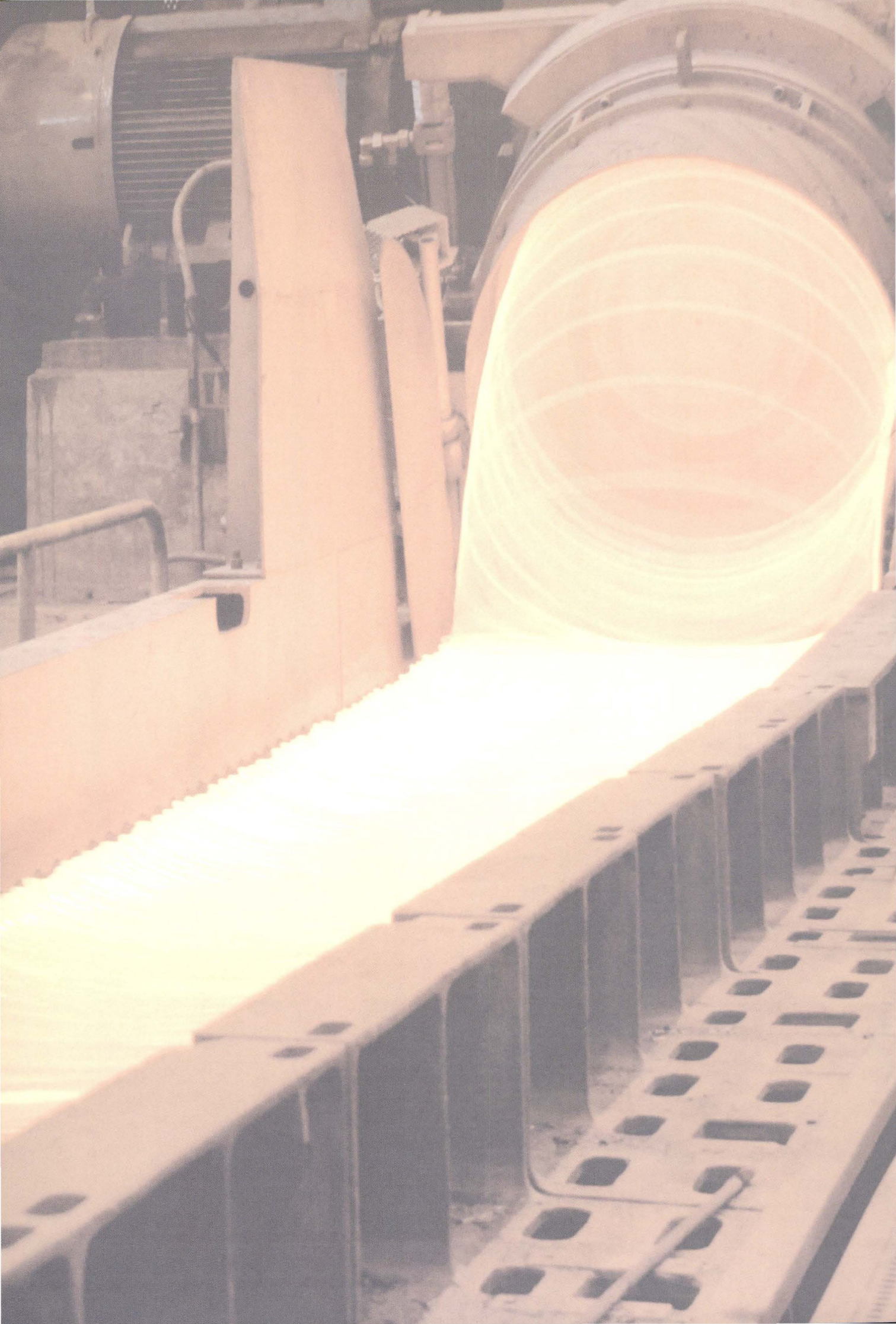
(SHASHI KANT SHARMA)

Comptroller and Auditor General of India

New Delhi

Dated: 23 June 2015

Glossary



Glossary

Sl. No.	Abbreviation	Full Form
1	AR(C)	Audit Report (Commercial)
2	ASP	Alloy Steels Plant
3	BA	Bright Annealed
4	BEC	Bhilai Engineering Corporation
5	BF	Blast Furnace
6	BHEL	Bharat Heavy Electricals Limited
7	BOF	Basic Oxygen Furnace
8	BPSCL	Bokaro Power Supply Company (Private) limited
9	BRC	Bloom cum Round Caster
10	BSC	Board Sub - Committee
11	BSL	Bokaro Steel Plant
12	BSP	Bhilai Steel Plant
13	CAG	Comptroller and Auditor General
14	CAPEX	Capital Expenditure
15	CCD	Continuous Casting Department
16	CCP	Continuous Casting Plant
17	CDCP	Coke Dry Cooling Plant
18	CEO	Chief Executive Officer
19	CENVAT	Central Value Added Tax
20	COB	Coke Oven Battery
21	CP	Corporate Plan
22	CPFR	Composite Project Feasibility Report
23	CRM	Cold Rolling Mill
24	CVC	Central Vigilance Commission
25	DPR	Detailed Project Report
26	DSP	Durgapur Steel Plant

27	DVC	Damodar Valley Corporation
28	EAF	Electric Arc Furnace
29	EIEL	Era Infrastructure Engineering Limited
30	EOI	Expression of Interest
31	EPIL	Engineering Projects India Limited
32	GDP	Gross Domestic Product
33	HEC	Heavy Engineering Corporation
34	HSCL	Hindustan Steelworks Construction Limited
35	HSM	Hot Strip Mill
36	IPU	Investment Planning Unit
37	ISP	IISCO Steel Plant
38	JIL	Jain Infraprojects Limited
39	L&T	Larsen and Toubro
40	MBE	McNally Bharat Engineering
41	MEP	Modernization and Expansion Plan
42	MIS	Management Information System
43	MRS	Main Receiving Station
44	MSM	Medium Structural Mill
45	MTPA	Million Tonne per annum
46	MVA	Mega Volt Ampere
47	NPM	New Plate Mill
48	PAG	Project Appraisal Group
49	PCR	Project Completion Report
50	PD	Project Directorate
51	RINL	Rashtriya Ispat Nigam Limited
52	RMD	Raw Materials Department
53	RMHS	Raw Material Handling System
54	RPL	Rotary Polishing Line
55	RSP	Rourkela Steel Plant
56	SAIL	Steel Authority of India Limited

57	SMS	Steel Melting Shop
58	SP	Sinter Plant
59	SPCL	Shapoorji Pallonji Company Limited
60	SSIT	Sino Steel Industry & Trade Group Corporation
61	SSP	Salem Steel Plant
62	VAT	Value Added Tax
63	VISP	Visvesvaraya Iron and Steel Plant

