

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
ISP	Basic Oxygen Furnace	1,121	12/10	03/15	51	22
	Continuous Plant	448	07/10	03/15	56	21
ISP	Universal Section Mill	696	12/09	02/15	62	53
	BSL	Main Receiving Station	179	05/10	01/16	68

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 for award/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.**