CHAPTER 10

CONSERVATION AND DEVELOPMENT OF TRANSPORT INFRASTRUCTURE

ANNUAL REPORT 2019-20

CONSERVATION AND DEVELOPMENT OF TRANSPORT INFRASTRUCTURE

Coal Conservation

Conservation of Coal is an important area, particularly when our Coal reserves are finite. The aspect of conservation of Coal is taken into account right from the planning stage and maximum recovery is ensured during the implementation stage. Mines are designed to work the Coal seams either through opencast or through underground methods depending on the technical feasibility and economic viability.

Mechanised opencast (OC) mining is presently the commonly adopted technology for extraction of thick seams at shallow depth. This is also important from the conservation point of view since the percentage recovery by this technology is around 80% to 90%. Presently, this technology dominates the Coal industry contributing over 94% of country's Coal production. Further, whenever it is feasible, the developed pillars of underground mines are being extracted through opencast operations.

Introduction of new technologies like longwall method, shortwall method, highwall mining and Continuous Miner technology have resulted in increased percentage of extraction in underground mining (UG).

With the improvement in roof support technology with mechanized bolting with resin capsules, it has been possible to maintain wider gallery span and extract seams under bad roof conditions more efficiently resulting in improved conservation of Coal.

SAND STOWING

Sand stowing in underground mines is yet another effective means of Coal conservation, which is widely in use for extraction of Coal pillars from underground coal seams lying below built-up areas, such as important surface structures, railway lines, rivers, nallahs, etc. which otherwise would have resulted in locking of coal in pillars. Stowing also helps in the extraction of thick seams in several lifts increasing the percentage of extraction. Due to scarcity of sand, various experimental trials are being conducted to use other materials like fly ash, boiler ash, crushed overburden material etc. for stowing in underground mines as substitute for sand. Currently, crushed overburden material is being used commercially for stowing purposes in underground coal mines where sand is not available in the near vicinity of the mine or it is costlier to transport sand from distant river sources.

CONSERVATION AND DEVELOPMENT OF TRANSPORT INFRASTRUCTURE

The Coal Controller acts as the Member Secretary for the Coal Conservation & Development Advisory Committee (CCDAC), constituted under the Coal Mines (Conservation & Development) Act, 1974. The office of the Coal Controller receives process and scrutinizes applications/claims from Coal Companies regarding Protective work, Scientific Development Works, road and railways infrastructure projects in the coalfields areas to release of funds through CCDAC.

Ministry of Coal vide its Office Memorandum No. 20011/12/2018-IFD dated 04.01.2019 has communicated the Budget for two Plan Schemes as-

- Conservation & Safety in Coal Mines (BE&RE) - ₹ 4.00 Cr.
- Development of Transport Infrastructure in Coalfields – ₹ 130.50 Cr. (BE), ₹ 90.00 Cr. (RE).

There was spill over amount of ₹ 0.37 Cr. in Conservation and Safety Head and ₹ 68.50 Cr. in Development of Transport Infrastructure Head from 2018-19.

MoC has released an amount of ₹3.60 Cr. in Conservation & Safety and ₹ 75.46 Cr. in Development of Transport Infrastructure Head upto 31st December, 2019.

CIL: Railway Infrastructures Projects

In order to achieve the planned growth in production and evacuation in future, CIL has undertaken the construction of major railway infrastructure projects. These railway infra-

projects are being implemented by either Indian Railways (on deposit basis) or through JV companies with IRCON representing Railways, Subsidiary Company (representing CIL) and concerned State Government.

There are two major rail infrastructure projects being implemented on deposit basis and four rail infra projects being implemented by JV companies.

Deposit basis:

- East Central Railway, Patna is executing the Tori- Shivpur new BG line with a length of about 44.37 KM for North Karanpura Area of CCL, in Jharkhand with a project cost of ₹ 2399 Crores. The doubling of the entire line is complete along with OHE, Signaling and Communication almost complete. Presently coal is being dispatched through this new BG line
- South Eastern Railways, Kolkata has executed the Jharsuguda- Barpali- Sardega railway infrastructure project with a length of about 52.412 KM for Ib Valley Coalfields of MCL situated in Sundargarh district of Odisha at a cost of ₹ 1123.90 Crores and the line has been commissioned in April-2018. SE Rly has taken over maintenance, security, operation etc. from 26.11.2019.

Joint Venture basis:

- Execution of Shivpur- Kathotia section with a length of 49.085 KM is being undertaken by a JV company named Jharkhand Central Railway Limited (JCRL) with CCL, IRCON and State Government of Jharkhand as its partner at an estimated cost of ₹1799.64 Crores.
- Chhattisgarh East Rail Limited (CERL), a JV company formed by SECL, IRCON and the State Government of Chhattisgarh, is executing the construction of East Rail Corridor, in two phases:
  - Phase-I: Kharsia- Dharamjaigarh with spur to Gare- Palma and three feeder lines of about 132 Km. at an estimated cost of ₹ 3055 Crores. Kharsia-Korichapar (0-45 Km) section; commissioned on: 12.10.2019.
  - Phase-II: Dharamjaigarh – Korba with a length of about 62.5 Km at an estimated cost of ₹ 1686.22 Cr.
- Chhattisgarh EastWest Rail Limited (CEWRL), a JV company formed by SECL, IRCON and the State Government of Chhattisgarh, is executing the construction of East-West Rail Corridor (Gevra Road to Pendra) via Dipka, Katghora, Sindurgarh and Pasan with a length of about 135 KM and Feeder lines of about 35 Km at an estimated project cost of ₹ 4970.11 Crores.
- Mahanadi Coal Railway Limited (MCRL), a JV company formed by MCL, IRCON and the State Government of Odisha is executing the construction of railway infrastructure projects in the Talcher coalfield of MCL, to cater to the evacuation of coal, in two phases:
  - Phase-I (Inner Corridor): Angul- Balram- Jharpada-Tentuloi link at Talcher Coalfield of MCL with a length of 69.10 KM (which consists of the Jharpada- Kalinga- Angul link of 14.22 KM length) with an estimated cost of ₹ 1700 Cr (excluding the cost of land).
  - Phase-II (Outer Corridor): Tentuloi- Budhapunk of approximately 136 KM length.

FIRST MILE CONNECTIVITY PROJECTS

CIL has identified 35 First Mile Connectivity Projects in mines having capacity 4 Mty and above. All CIL subsidiaries have 'in-principally' approved their FMC projects in their respective Boards. Out of 35 Projects, tenders floated for 12 Projects, schemes of rest 23 Projects are under different stages of formulation. Out of 12 floated tenders, work has been awarded in respect of 8 projects, which are under constructions for 117 Mty capacity. Till now, one project namely Kusmunda PH-I has been commissioned.

Singareni Collieries Company Limited (SCCL):

Sand Stowing:

To protect important surface features like Public Buildings, Colonies, Rail lines, Public roads etc., underground Voids /goaf (after coal extraction) are filled up (stowed) with River sand. Due to the acute scarcity of sand, various experimental trials are being conducted to use other materials like Bottom Ash, Boiler Ash and crushed OverBurden material etc. for stowing in underground mines as a substitute for Sand in SCCL Mines.

Stowing in 17 underground mines of SCCL is being carried out by using river sand, Bottom Ash and Processed OverBurden.

Out of 20.22 LCuM stowing material used in underground mines during April to Dec, 2019, contribution of Processed overburden, Bottom ash and River sand was 6 %, 45 % and 49 % respectively.

Highwall mining is in operation in a mine of SCCL to extract the coal left in the final high wall of deep opencast mine.

Railway Infrastructure Project:

Keeping in view the planned enchantment of coal production and dispatch upto 85 MT in the next 5 Years, following steps regarding coal evacuation and infrastructure are being taken by SCCL –

- Coal transport by Rail: Rail is the safe, economic, eco-friendly mode of transport with capacity of transporting bulk quantity. SCCL has enhanced the quantity of coal by rail mode from 65.7% in 2016-17 to 73.4 % in 2019-20.
- Major ongoing Rail Projects of SCCL to enhance the coal evacuation capacity :
    1. BDCR to Sathupalli Railway lines in Telangana (12 MTPA capacity) (53.20Km @ ₹ 704.31 Cr)
    2. MCRL Railway Project in Odisha – for Naini and New Patrapara coal block (25 MTPA capacity)
- On-going Railway Siding :
    A. KK1 CHP, Railway Siding at Mandamarri (8.50 Km @ ₹ 65.90 Cr)
    B. Bethampudi to Koyagudem Railway Siding (8.20 Km @ ₹ 81.31 Crores)
    C. Sathupalli Railway Siding (about 8.00 Km length)
    D. STPP Railway Siding (33.00 Km @ ₹ 452.65 crores)
    E. Status of Goleti Railway Siding. (3.15 Km @ ₹ 28.00 Cr)
- Coal Handling Plant (CHP) : There are 9 nos. CHP of 50 MT capacity through which dispatches are by Rail / MGR systems. Remaining coal is being transported by road.
- 3 Nos. New CHPs also being constructed under 1st Mile connectivity -
- SRP CHP: Works completed. Trial run done and is ready for commissioning after approval by railways.
- JVR OC CHP: Work has been started and scheduled to be completed on 30.04.2021.
- Naini CHP: Expected to be completed in 2023-24. Approval of DPR of CHP can be done only by firming up the Railway siding by MCRL.

In addition to construction of Railawy line, Railway Siding and Coal Handling Plant, following arrangements are also being done -

- Pre-Weigh Wagon Loading systems: There are 07 nos. Pre-Weigh Wagon Loading systems and 12 nos. Truck Loading systems in SCCL, installed & working at various Mines & Coal Handling Plants.
- Crushers : In addition to the permanent crushers in the opencast mines , 4 Mobile crusher is installed in SCCL and 6 more are under various stage of commissioning.
- Approach Road / BT Road/ Asphalt road: Roads for coal transportation is being constructed and maintained as per requirement.

SCCL has taken following steps to prevent theft of coal during transportation :

- SAP is being used as cross check measure in transportation of coal from the mines to CHPs/Railway Sidings by establishing key points enroute. If any point enroute is not entered in SAP, the trip will not be considered as complete trip and necessary investigation will be taken up by concerned officials.
- Vehicle Track monitoring system are installed in all area. All the registered vehicles are provided with RFID tags, GPS instruments. The movement of vehicles will be monitored with the help of GPS and any deviation will be immediately communicated to the control rooms established for the purpose of monitoring in all areas.
- All the vital locations including Offices, mine loading points, weigh bridges, CHPs are provided with CC TV cams to monitor the movement of trucks. In addition to this, all check posts situated enroute are also provided with CC TV cameras.
- To keep continuous watch on movement of trucks, wagons from CHPs, a team named ANTI COAL THEFT SQUAD is in operation round the clock.
- The SCCL departmental and CISF security personnel have been engaged in different areas of the SCCL to prevent pilferage of coal to protect the Company's property.
- Surprise checks/raids are conducted by officials, special teams regularly.