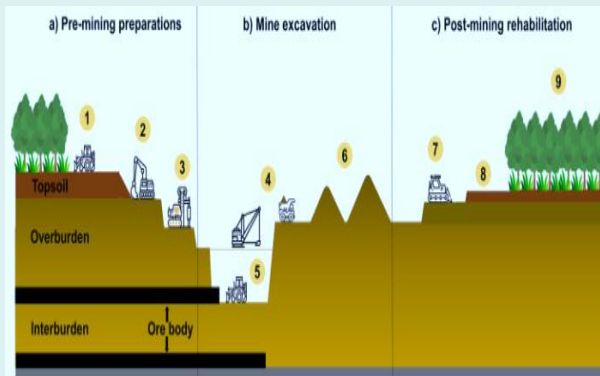


Mine Safety at Glance

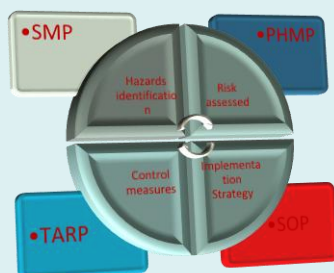


Coal India Limited (CIL) places safety at the core of its mission and business strategy. To uphold this priority, CIL has implemented a robust Occupational Health & Safety Policy across all mines and establishments, supported by dedicated Internal Safety Organizations (ISOs) within each subsidiary with emphasis on the following:

1. **Safety-Centric Design:** All operations and systems are engineered with safety, sustainability, and environmental protection in mind.



2. **Hazard Identification and Risk Assessment (HIRA) based SMP:** Site-specific Safety Management Plans are developed through systematic risk identification.



3. **Employee Engagement:** CIL fosters a proactive safety culture by encouraging workforce participation and awareness.



4. **Strategic Goal - Zero Harm Potential (ZHP):** Through continuous initiatives and best practices, CIL is committed to achieving ZHP in its operations.

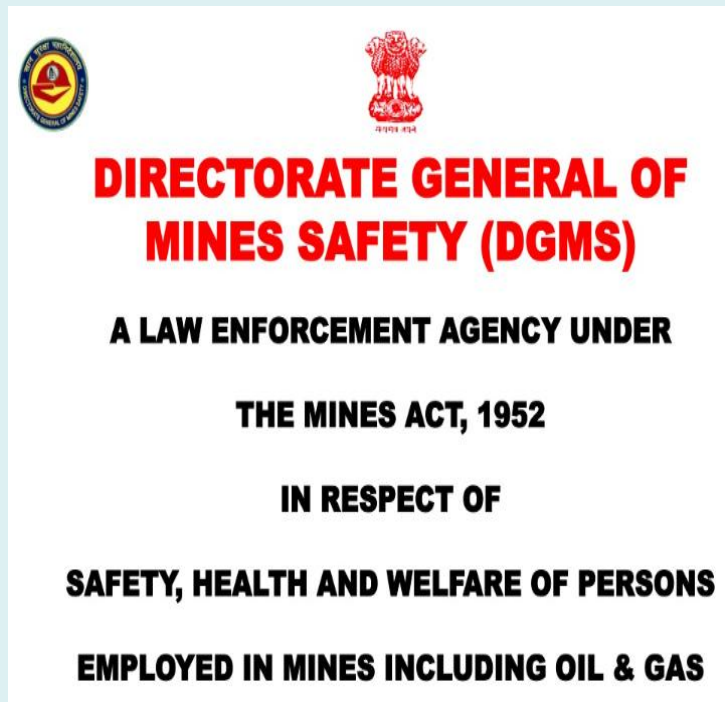




Statutory Framework for Coal Mine Safety:

Coal mining is a highly regulated industry worldwide due to its inherent operational and occupational hazards. In India, coal mine safety legislation is among the most comprehensive and extensive statutory frameworks designed to ensure occupational health and safety (OHS). Compliance with these safety statutes is mandatory. Key statutes governing coal mine safety include:

- 1 The Mines Act- 1952
- 2 The Mines Rules -1955
- 3 The Coal Mines Regulations - 2017
- 4 The Mines Rescue Rules -1985
- 5 The Electricity Act- 2003
- 6 The Central Electricity Authority (measures related to safety & supply) Reg. - 2023
- 7 The Mines Vocational Training Rules -1966
- 8 The Indian Explosive Act, 1884
- 9 The Explosive Rules - 2008
- 10 The Indian Boiler Act, 1923
- 11 The Workmen Compensation Act – 1923 (Principal Act amended as on date)
- 12 The Factories Act - 1948 Chapter -III & IV



Occupational Health and Safety Policy of

CIL: We, at Coal India Limited, are committed to ensure the health and safety of our employees. CIL believes that accidents are preventable and industrial health hazards are controllable with foresight, relevant training, purposeful attitude and appropriate equipment.

CIL is committed to:

- A. Carry out all mining and associated activities in such a manner as to avoid harm to employees, neighboring communities & environment.
- B. Comply all relevant statutes for occupational health and safety.
- C. Continuously promote and improve safe practices in all its operations in a planned manner along with its monitoring and feedback.
- D. Develop a culture of progressive improvement in practices and systems related to Occupational Health and Safety (OHS) at work places.

CIL will achieve these objectives by:

1. Planning and designing of mine with adequate provision for Occupational Health and Safety.
2. Hazard Identification and Risk Assessment based Safety Management System in mines.
3. Adoption of suitable technology for improvement in Occupational Health and Safety (OHS) system in work places.
4. Provision of adequate resources for effective execution of Occupational Health and Safety (OHS) system in work places.
5. Engage the safety personnel exclusively for improving safety standards and safety cultures of mines.
6. Organize appropriate forums with employees' representatives for joint consultations on occupational health and safety matters to promote motivation and commitment of employees in the occupational health and safety system;
7. Multi-level monitoring of the implementation of the Occupational Health and Safety (OHS) system in mines through Internal Safety Organization (ISO) at the company headquarters and Area Safety Officers at area level;
8. Periodically auditing of the procedures and practices related to Occupational Health and Safety (OHS) System;
9. Institute continuous education, training and retraining all employees with the accent placed on the development of safety oriented skills;

10. Continuous efforts to improve the occupational health standards, workplace ambience and health conditions of the employees.

To implement the Occupational Health & Safety Policy effectively, the following measures are ensured:

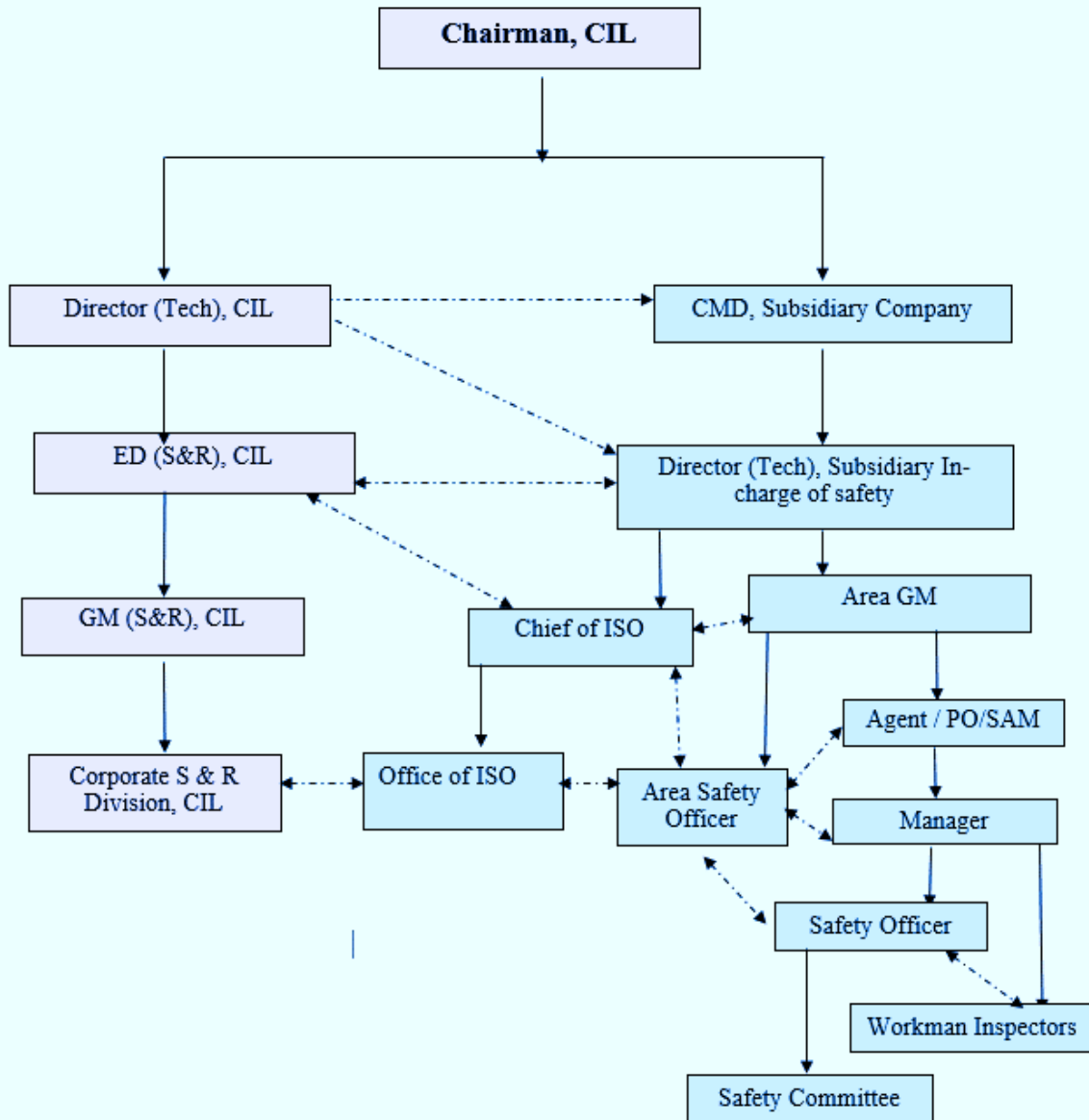
1. **Allocation of Adequate Funds:** Sufficient financial resources are earmarked to enhance and maintain mine safety.
2. **Deployment of Skilled Workforce:** An adequate number of trained personnel is deployed to ensure the safe execution of mining operations.
3. **Establishment of Internal Safety Organization (ISO):** A well-structured, multidisciplinary ISO is established to oversee and monitor the implementation of CIL's Safety Policy across all subsidiaries.
4. **Technological Advancements:** Continuous improvement and adoption of advanced technologies to enhance the safety and efficiency of mining operations.
5. **Scientific Studies and R&Ds:** Leveraging in-house expertise from CMPDIL and collaborating with scientific agencies and technical institutions for robust design, planning, and research initiatives.



6. **Ensure Employee Participation in safety management:** Ensuring workers' active involvement in all forums dedicated to monitoring and improving the mine safety.



Organizational Structure for Safety in Coal India Ltd:



- **Firm line** indicates Administrative relation.
- **Dotted line** indicates Functional relation.



Functions of Internal Safety Organization (ISO) (Abridged):



CIL has established a structured multi-disciplinary Internal Safety Organization (ISO) to assist the line management at various levels in matters related to mine safety. The major functions of ISO are as under:

1. Functions of ISO is multi-disciplinary in nature.
 2. Functions of the ISO are both audit and advisory in nature.
 3. ISO examine mine plans and schemes of every mine at least once a year.
 4. Make one inspection in each mine at every three months.
 5. Dangerous conditions observed during inspection are rectified through line management.
- 
6. Review the safety performance:
 - Once in every quarter by CMD.
 - At least once in every month by the Director (Technical).
 7. All applications sought for permission for opening/reopening of a district are independently checked and vetted by the ISO.

Major Activities for Corporate Safety & Rescue Division (ISO) of CIL:

1. Inspection of mines to review safety status of mine & follow up action thereof to improve safety standard of mines.
2. Preliminary RCA based fact finding enquiry into fatal accidents and major incidents.
3. Maintenance of accidents / major incidents database.
4. Analysis of mine Accident Statistics in order to find an action plan.
5. Monitoring Mine Safety Audit.
6. Imparting specialized training by SIMTARS accredited trainers to unit level and Area level executives, mine officials and members of Safety Committee.
7. Framing of internal Technical Circulars / Management Guidelines / Advisory related to safety issues and monitoring implementation thereof.
8. Monitoring safety related R&D activities in CIL.
9. Organizing a meeting of the CIL Safety Board and monitoring recommendations / suggestions made during the meeting.
10. Monitoring mine rescue preparedness at different mine rescue establishments.
11. Publication of Safety Bulletin for disseminating and sharing of knowledge in order to promote safety awareness and inculcate better safety culture.
12. Actively participated in organizing the meeting of the Standing Committee on safety in coal mines and monitoring recommendations / suggestions made during the meeting.
13. Liaisoning with various agencies on the matter of mine safety and ISOs of various subsidiaries.
14. Monitoring of CIL Safety Information System (CSIS) & NCMSR portal database and ensuring timely updating.
15. Response to parliamentary questions related to mine safety including queries raised by different standing committees such as standing committee on Steel & Coal, standing committee on labour, as well as questions raised by COPU, MOC, CA&G and VIPs and information sought under the Right to Information (RTI)- 2005.

Safety Monitoring Mechanism - CIL



(CIL- at Corporate level),

1. Board of Director meeting.
2. Risk Management Committee
3. CIL Safety Board
4. CMDs meeting
5. S&R Division, CIL



(at Subsidiary HQ level),

1. Tri-partite Safety Committee
2. Internal Safety Organisation (ISO)



(at Area level)

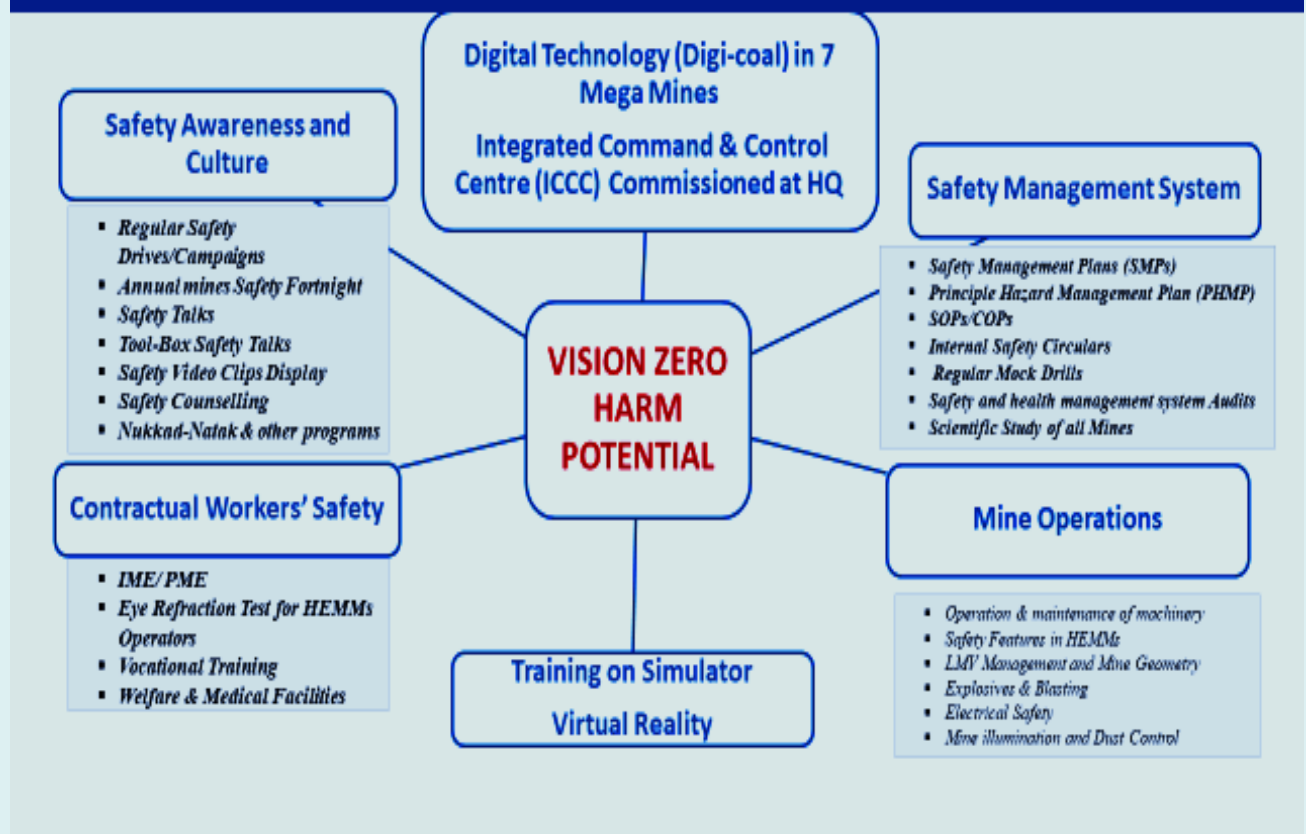
1. Tri-partite Safety Committee
2. Area Safety Officer (ASO)



(at Mine level)

1. Workman Inspectors (Mining / Mechanical / Electrical)
2. Safety Committee
3. Safety Officer
4. Other Competent Mine Officials

Initiatives for Improvement of Safety



Initiatives for Improvement of Safety



-



- [illegible]

In OC mines, separate roads for Light Motor Vehicles (LMVs), safety flags on LMVs, caution/danger boards, road dividers, and other necessary safety measures are provided.

SEPARATE ROAD FOR LIGHT VEHICLE

Light vehicle road



Light vehicle crossing



Vehicle SAFETY FLAG ,TRAFFIC SIGNS, CAUTION BOARDS, DELINATORS ALONG HAUL AND LV ROADS.

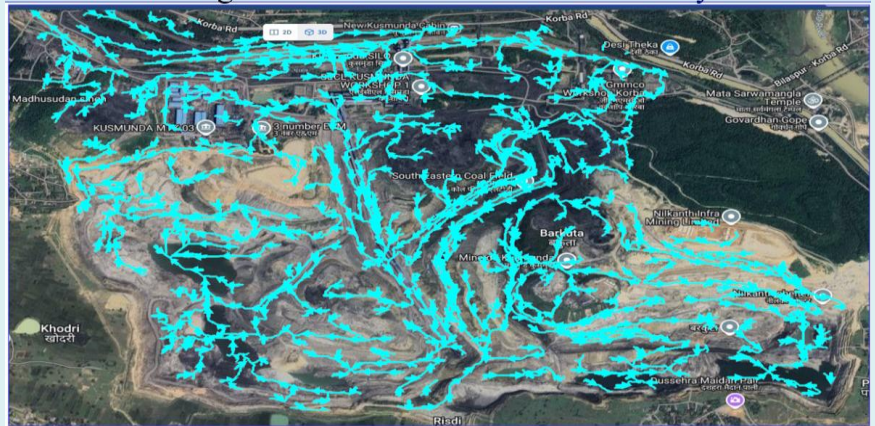
Opencast Safety Initiatives



Digital Transformation – Drone Survey

Use of Drones for Mine Safety:

Drones play a vital role in enhancing coal mine safety by enabling real-time monitoring, early hazard detection, minimizing human exposure, and supporting faster emergency response. They are particularly useful for monitoring OB dumps, high walls, and benches to identify cracks, slope failures, and instability. In addition, drones facilitate remote inspection after accidents or incidents, ensuring safe assessment before personnel entry.

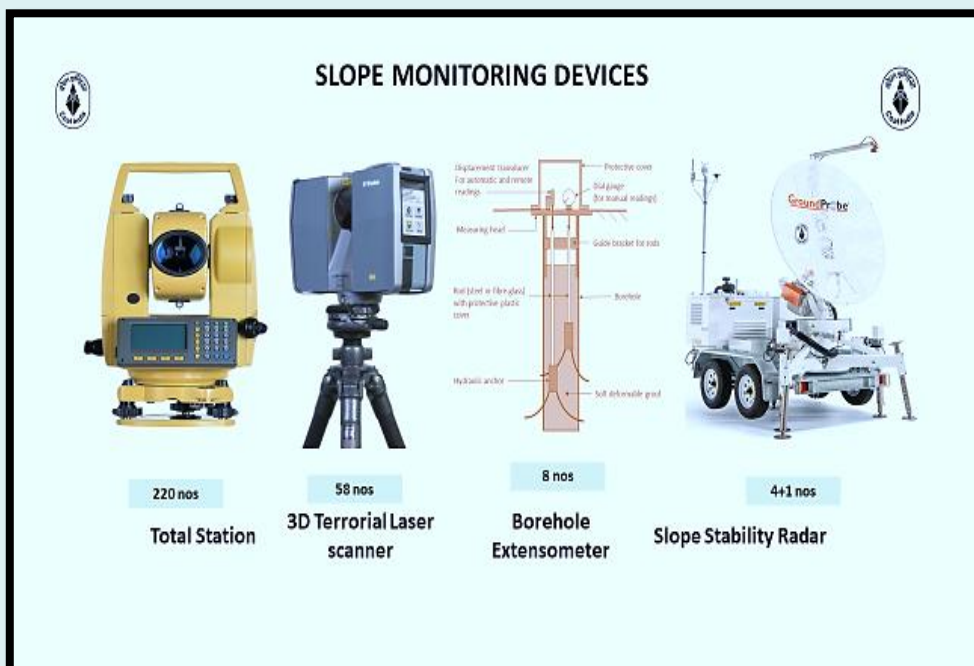


Monitoring Drainage pattern



Fig. - Deploying drones to monitor mining areas

Slope Monitoring System



A combination of devices and tools is being used to monitor OB dumps, high walls, and benches for detecting cracks, slope failures, and signs of instability.

Dust control in mines is essential not only for protecting workers' health and ensuring safe operations but also for environmental sustainability, regulatory compliance, and well-being of nearby community. The following dust control devices / system are in use:

Fog Cannon – High-pressure mist system for dust suppression in open areas, stockpiles, and loading points.

Mechanical Dust Extractor – Captures and removes dust directly at the source through suction and filtration.

Fixed Mist-Type Sprinkler – Stationary water spray systems installed along haul roads, conveyor belts, and transfer points.



Wheel Washing System – Prevents dust carryover by cleaning vehicle wheels before they exit the mine/plant premises.

Water Tanker – Mobile dust suppression through regular sprinkling on haul roads and work zones.

Vertical/Wind Barrier – Physical barriers (walls, fences, or green belts) to reduce wind speed and control dust dispersion.

Rainwater Harvesting Project – Captures and stores rainwater to ensure sustainable water availability for dust suppression.

CAAQMS (Continuous Ambient Air Quality Monitoring System) – Real-time monitoring of dust and air quality parameters for compliance and control.

An Integrated Control & Command Centre (ICCC) is a centralized digital platform that integrates data from multiple sources to enable real-time monitoring, analysis, and decision-making. It uses IoT devices, sensors, CCTV, SCADA systems, and advanced analytics to provide a single-window view of operations.



1. **Earthing & Grounding** – An effective earthing system to prevent electric shocks and ensure equipment safety.
2. **LOTO based Shutdown** – Strict adherence to Lock-Out/Tag-Out procedures during maintenance and repair with proper SOP for shutdown procedure.
3. **Protection Systems** – Use of flameproof, intrinsically safe, and adequately rated equipment suitable for hazardous mine environments. Installation of circuit breakers, MCBs, and protective relays for fault detection and automatic disconnection.
4. **Cabling & Connections** – Use of approved, well-insulated, mechanically protected cables; avoidance of loose/faulty joints.
5. **Preventive Maintenance** – Scheduled checks, testing of protective devices, and immediate rectification of defects.

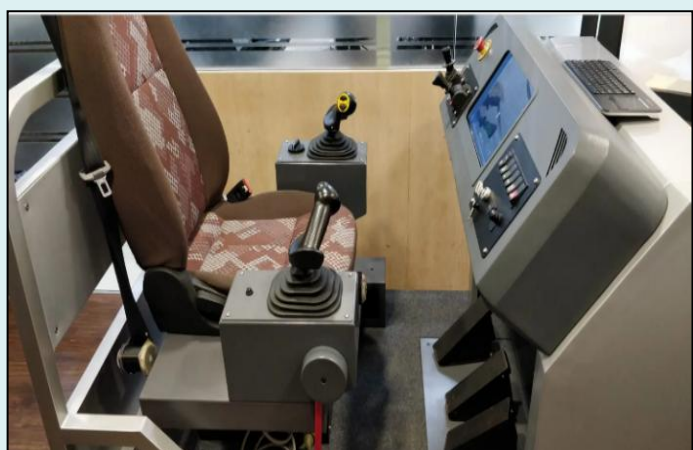
Simulation & Virtual Reality-based Training:



● Virtual Reality (VR) training for safety and emergency rescue



Simulation and Virtual Reality (VR)-based training are revolutionizing safety and skill development in coal mining by providing immersive, interactive, and risk-free learning environments that enhance operational preparedness.





Man Riding System

The Man Riding System for use for ensuring safe, quick, and less strenuous travel of workers while reducing fatigue-related risks.



UG Mine Safety:

Major safety in UG coal mines revolves around roof support, ventilation & gas control, fire & explosion prevention, inundation safeguards, safe transport, blasting safety, electrical precautions, dust suppression, and emergency preparedness to ensure worker protection and accident prevention.



UG Coal Mine Environment Monitoring System provides continuous, real-time surveillance of gases, dust, temperature, humidity etc. for ensuring statutory compliance and safeguarding miners against major hazards like explosions, fires, and occupational health risks.



Vertigo Test Facility at the Dudhichua Project CHP. The facility is designed for employees who are required to work at heights, enabling the identification of personnel fit for such tasks. This initiative is expected to enhance mine safety standards and further strengthen the safety culture and climate within the project.



Periodic Medical Examination

The system of Periodical Medical Examination (PME) in coal mines is a structured process mandated under the **Mines Rules, 1955** and related DGMS guidelines based on the recommendations National Safety Conferences of to safeguard the occupational health of mine workers with the following objectives:

- To assess and monitor the health of employees exposed to occupational hazards in coal mines.
- To detect occupational diseases (e.g., pneumoconiosis, noise induced hearing loss. etc) at an early stage.





Encouraging Participation of Women in safety matters:

Subsidiaries of CIL has establish a complete all-women mine rescue team. This ground-breaking initiative is a major step forward in promoting women's participation in the mining industry, which has traditionally been male-dominated.



Personal Safety Counselling, Family Counselling & Employee Assistant Program:

Employee is being personally consulted to understand the ability of the employee in terms of safety attitude and understanding; any personal problems or habits needs immediate attention. Accordingly, the assistant program is extended through a welfare officer or medical officer or person of influence. Further, family counselling sessions have been conducted to promote overall safety awareness and sensitivity among family members as well.

Special Safety Initiatives

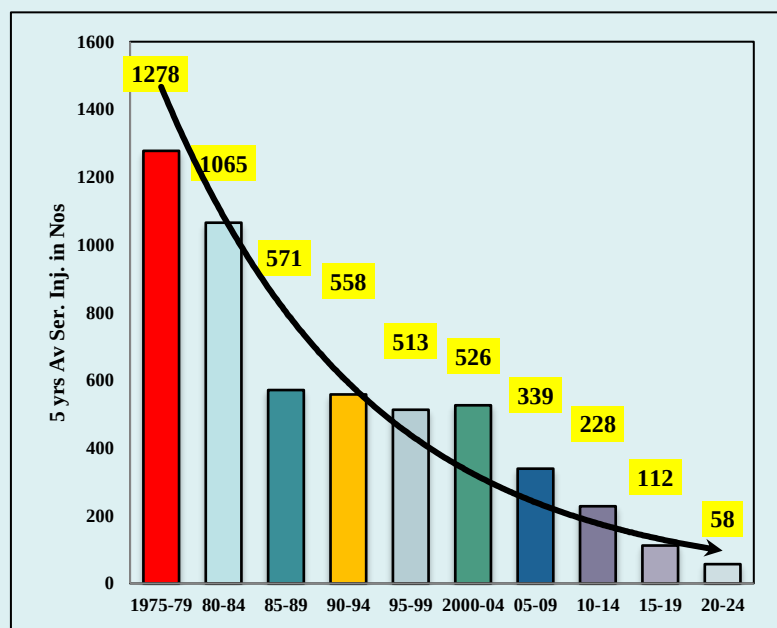
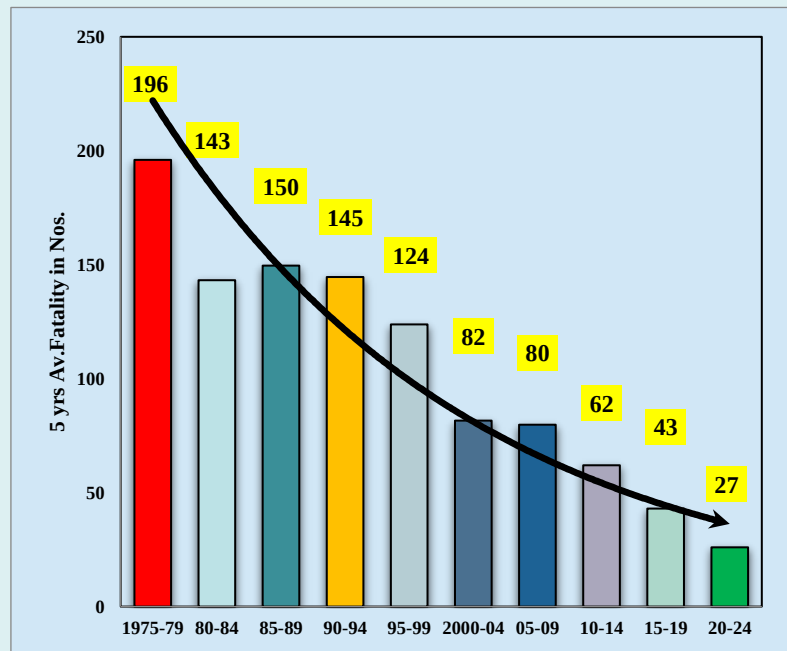


Accident Statistics: A Key Indicator of Safety in Mines - Accident statistics serve as a critical measure of safety performance in mines.

Over the years, Coal India Limited (CIL) has **achieved remarkable improvements in safety**, reflected in a significant reduction in accidents.

This progress can be attributed to the following key factors:

- **Shared Commitment and Collaboration:** A unified approach and synergistic efforts among all stakeholders.
- **Adoption of Advanced Technology and Systems:** Leveraging modern tools and methodologies to enhance safety.
- **Persistent Vigilance and Supervision:** Round-the-clock monitoring and proactive support from all concerned parties.
- **Continuous Skill Development and Awareness:** Ongoing initiatives to improve the knowledge, skills, and safety consciousness of the workforce.



Mine Emergency Response and Evacuation Plan (EREP)

- Procedures for immediate notification to all persons affected by the emergency.
- Procedures for the safe, orderly and immediate withdrawal of persons from danger.
- Procedures for rescue of persons incapacitated or trapped due to accident.
- Procedures for providing first aid, transportation, medical treatment to injured.
- Special training to respond to critical operations and mine emergencies.
- Mock Rehearsals for examining the efficacy of Plan.
- Demarcating Emergency Escape Routes in belowground and training on evacuation.
- Flow Chart prepared for transmission of information regarding crisis / disaster



- Subsidiaries of CIL maintain 6 Mine Rescue Stations (MRS), 16 Rescue Rooms-with-Refresher Training facilities (RRRT) and 16 Rescue Rooms (RR) at strategic locations to cater to the emergencies on 24X7 basis.



All Rescue Stations / Rescue Rooms are fully equipped with adequate numbers of rescue apparatus and staffed by adequate numbers of Rescue Trained Personnel (RTP) as per the MRR-1985.



WCL Mine Rescue Team Shines at IMRC 2024 - The WCL Mine Rescue Team from Coal India Limited (CIL) secured second place overall in the 2024 International Mine Rescue Competition (IMRC) held in Colombia. The team also earned second place in the First Aid category, marking the first time an Indian team has reached the podium in this prestigious event. The IMRC, organized annually by the International Mine Rescue Body (IMRB), promotes global excellence in mine rescue operations. The 2024 competition featured 21 teams from countries including India, China, Zambia, Australia, Vietnam, and Canada.





Safety Campaign as per DGMS Circular

सुरक्षा मेरी जिम्मेदारी है

क्या आपने पूछा ??

1. क्या मुझे इस वर्ष कार्य हेतु पर्याप्त प्रशिक्षण दिया गया है या क्या मैं पर्याप्त रूप से प्रशिक्षित पर्यवेक्षक के साथ हूँ ?
2. क्या इस कार्य के लिए सुरक्षित कार्यप्रणाली (एस. ओ. पी.) बनाई गयी है ?
3. क्या मेरे पास कार्यस्थल की अपेक्षित जानकारी है ?
4. क्या दिए गए उपकरण एवम् यंत्र ठीक अवस्था में है ?
5. क्या मेरे पास आवश्यक पी. पी. ई. (निजी रक्षा उपकरण) है ? (दस्ताने, चक्षु रक्षा, उच्चदृश्यता वाले आवरण, कर्ण सुरक्षा, सुरक्षा जुता एवम् सुरक्षा टोपी इत्यादि)
6. क्या मुझे इस कार्य हेतु किसी विशेष ऑथोराइजेशन/परमिट/ अनुमति की जरूरत है ?
7. क्या मौसम, कार्य परिवेश या अपर्याप्त प्रकाश कार्यसुरक्षा को प्रभावित करते हैं ?
8. क्या मेरी गतिविधि से कोई खतरा उत्पन्न हो सकती है या मैं दूसरों की गतिविधियों से खतरे में पड़ सकता हूँ ?
9. क्या कार्यपरिवेश स्वास्थ्य के लिए हानिकारक है ?
10. क्या मैं संकटकालीन स्थिति में आपात कार्यवाही योजना से परिचित हूँ ?