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this issue contains...

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President's Message.....

Dear members..

At the outset, I congratulate both the recipients of the" Lifetime Achievement Awards", Shri Deepak Vidyarthi and Prof (Dr.) S.S. Rathore. I also congratulate all the winners of various other Awards and the Quiz competition.

The just concluded 4th Council meeting and the 51st Annual General Meeting were unique. Firstly because of the record attendance in the Council meeting. Then for the two important decisions taken in the council meeting as well as their consequent approval in the AGM. The best part was the excellent manner in which the arrangements for these meetings were made and the care taken by the Jabalpur Chapter Chairman and his team in ensuring the comfort of the guests, by providing wonderful hospitality with a personal touch. Hats off to Shri Pukhraj Neniwal, the Jabalpur Chapter Chairman, and his entire team. After two days of tiring sessions, the musical night relaxed all the participants. Shri Pukhraj and his team along with Shri A K Garg, the Council member kept the audience deeply engaged entertaining them with their melodious songs duly supported by befitting group dances by the members and their family members.

In the earlier Council meetings, there were some agendas of repeated nature. These used to be discussed but no decisions were taken. This time at least two of the long pending issues were resolved to the satisfaction of all members. These were related to conducting elections simultaneously for the vacant posts of VP II & VP III along with next general election for electing the Council for the term 2025-27. The second decision was the pleasant solution provided by the voluntary initiative shown by Shri M.S. Paliwal, Chairman Rajasthan Chapter-Udaipur for organizing an International Seminar Jointly by all the three Rajasthan chapters to raise funds to assist Jaipur Chapter in settling its liabilities. The proposal was accepted by the Jaipur and Jodhpur chapters' representatives present in the meeting and was welcomed by all. Thanks to Shri Paliwal.

Few more such pending issues are awaiting decisions. Hope these issues will be taken up and resolved in the next Council meeting. I also expect initiative by some active chapters to take responsibility for organizing a seminar by and for the student members.

Thankfully, the reports of the activities conducted by some of the Committees were presented and deliberated upon in the Council meeting. Accordingly, it was decided that the headquarters will organize an International Seminar sometime during January 2025 in Hyderabad. Let's look forward to its successful organization.

S.N. Mathur
President

Mining Engineers' Association of India

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EDITOR'S DESK

Dr. P.V. Rao
Editor, MEJ

India's strategic focus on critical minerals is vital for bolstering its economic growth and technological advancement. The country has identified 30 essential critical minerals that are crucial for high-tech industries, clean energy technologies, and national security applications. This initiative aims to reduce dependence on imports, strengthen supply chains, and support India's transition to a low-carbon economy.

Industries like electronics, telecommunications, transport, and defense rely heavily on critical minerals. They are also vital for green technologies like solar, wind, and electric vehicles, which are key to India's renewable energy and decarbonization goals. Critical minerals are essential for India's defense, aerospace, nuclear, and space sectors, requiring high-quality and reliable materials. Securing a steady supply of these minerals is crucial for India's self-reliance and preparedness and enabling the transition to a low-carbon economy by supporting renewable energy and electric mobility. They are integral to India achieving its target of 450 GW of renewable energy capacity by 2030.

However, India faces several challenges related to critical minerals, including limited domestic resources, heavy reliance on imports, and increasing global demand. To address these issues, the Indian government has taken several actions viz. identifying and periodically updating the list of critical minerals, establishing the Centre of Excellence for Critical Minerals (CECM) to manage the critical mineral strategy, auctioning the first-ever rights to mine critical minerals to the private sector, and strengthening international cooperation and partnerships.

India is actively fortifying its critical mineral supply chains through partnerships with Western nations like the U.S. and Australia, while also refining its rare earths strategy. The Indian government is pushing public sector undertakings (PSUs) and their subsidiaries to expedite the acquisition of critical mineral assets abroad. Some key developments include, i) signing the Critical Minerals Investment Partnership with Australia in March 2023, a significant achievement to invest in critical minerals projects and establish supply chains between the two countries, ii) establishing collaborations with Chile, Argentina, and Bolivia to secure lithium supplies; and conducting surveys and progressing with signing non-disclosure agreements with Chilean authorities to identify mines and facilitate downstream tie-ups in Bolivia, iii) eyeing critical mineral assets in South America and Africa, including in countries like Zambia and Congo, and iv) joined the U.S. led Mineral Security Partnership to diversify supply chains and enhance mineral security.

The government is auctioning the first-ever rights to mine critical minerals to the private sector to bolster domestic production. It has so far launched four tranches of critical mineral block auctions but has faced challenges in generating adequate industry interest and bids for many of the blocks. In the first tranche launched in November 2023, the government put up 20 critical mineral blocks for auction across several states. However, the auction process for 13 of these 20 blocks was later canceled due to a lukewarm response from bidders. 7 blocks received no bids or less than 3 qualified bidders and these 7 blocks were re-auctioned in subsequent tranches. In the second tranche launched in February 2024, the government listed 18 critical mineral blocks for auction but had to cancel 14 of these blocks due to a lack of bids. These 14 canceled blocks were then included in subsequent auctions. 7 blocks from the first tranche that received less than 3 bids were included in the third tranche auction. The fourth tranche, which was launched on June 24, 2024, included the auction of 21 critical mineral blocks, encompassing valuable minerals such as Graphite, Glauconite, Phosphorite, Potash, Nickel, PGE, Phosphate, and Rare Earth Elements. Ten of these 21 blocks were from previous tranches.

The key successful bidders in the first tranche were smaller, and lesser-known companies. The highest auction premium of 400% was for the Uttar Pradesh phosphorite block, which was awarded to Sagar Stone Industries. The lithium block in Chhattisgarh was awarded to Maiki South Mining at an auction premium of 76.05%. The overall auction process has received limited participation from major mining players so far.

The companies that won these initial critical mineral blocks are expected to start production within 2-3 years. However, the government has acknowledged that once these mines start production, India will need advanced technology and expertise to efficiently extract and process these critical minerals. To address this, the government holds gatherings of business players and industry stakeholders to facilitate technology sharing and collaborations. It also pursues bilateral talks with countries like the U.S. to acquire the necessary technology. India must attract large private sector investments and enlist its active participation across all facets of mineral exploration, deposit evaluation, mining, and processing of critical minerals. The ongoing efforts to secure supply chains and enhance domestic capabilities will significantly shape the country's future economic landscape.

- Editor

NEWS FROM THE MINERAL WORLD

NMDC prepares to double capacity by 2030

The company is also looking towards acquisition of mining assets in various parts of the world, which will substantiate the target of 100 Mt production by 2030.

Targeting 100 million tonne (Mt) of iron ore production by 2030, NMDC, the county's largest iron ore merchant miner, is carrying out an internal restructuring which includes setting up new divisions like projects department and ramping up on human resource. Overseas acquisition – for iron ore and also lithium mines - is also being looked into.

Speaking to *businessline*, Amitava Mukherjee, Chairman and Managing Director, NMDC, said: "Towards the 100 Mt target by 2030, we plan to produce 78 Mt from existing mines, 14 Mt (51 per cent of 27.5 Mt) from the mines of NCL (an NMDC-CMDC Limited JV) and the balance 8 Mt from the newly applied mining leases across states of Odisha, Karnataka, Chhattisgarh, Jharkhand etc."

The company is also looking towards acquisition of mining assets in various parts of the world, which will substantiate the target of 100 Mt production by 2030, he added.

The current production capacity of NMDC iron ore mines is around 50 Mt, with Kirandul (Chhattisgarh) at 18 Mt, Bacheli (Chhattisgarh) at 18 Mt and Donimalai (Karnataka) at 14 Mt.

Capacity Expansion Plans Underway

A nearly ₹50,000 crore investment plan is under consideration, with nearly ₹9000 crore of capex and investment being planned every year year, sources said. Capacity expansion measures are in full swing. Construction of the 12 Mtpa Screening Plant and adoption of Rapid Wagon Loading System (RWLS), along with new Crushing Plants planned for both Deposit 14 and 11C.

While expanding infrastructure for the ambitious target, NMDC has also applied for additional EC capacities to enhance Kirandul's production capacity to 30 Mt by FY30.

In Bacheli, the company is building new loading facilities and increasing the capacity of the Screening Plant to take up the production capacity to 31 Mt from the complex.

With 61 Mt expected from the Bailadila – yet to start production, NMDC is also awaiting permissions on the enhancement of its capacity in Karnataka to achieve 17 Mt from Donimalai.

From the NCL mines, NMDC plans to produce 21 Mt from Deposit 13 and 7 Mt from Deposit 4, (from which NMDC share of production will be 14 Mt) taking up the total production capacity to 92 Mt by FY30. Apart from this, NMDC targets to achieve a balance 8 Mt of iron ore from greenfield mines as well as from acquisition route.

Strategic Planning

"We have done meticulous strategic planning at the management level coupled with robust tactical planning at the field level, aligned to the medium- and long-term goals of the company," Mukherjee said.

The company is enhancing production and evacuation capacities, building supply chain resilience, augmenting technical and digital strength, and also focusing on ESG principles. In FY24, NMDC established a 'Works Organisation' that will streamline the execution of ambitious projects in the pipeline, through close monitoring.

The National Steel Policy intends to take India's steelmaking capacity to 300 Mt by 2030 for which around 450 million tonnes of iron ore would be required. The present share of NMDC production in national production is around 16 percent and the miner has targeted a production capacity of 100 Mt by FY30, thereby maintaining its share of production in national production to 22 percent.

NMDC has engaged global consulting agencies to draw advisory strategies on what to sell, whom to sell, and how to sell to channel a broader view on commercial sales, distribution, and logistics.

Richa Mishra Abhishek Law,
Businessline | July 21, 2024

Coal India ventures into non-coal mineral mining with graphite project

Graphite is the first mineral Coal India Limited (CIL) will diversify its operations beyond coal, following an order from the Ministry of Mines granting the company a composite license for prospecting and mining. This license pertains to the Khattali Chhoti Graphite Block in Alirajpur, Madhya Pradesh.

"This is the first mineral other than coal for us," Debasish Nanda, Director of Business Development at Coal India, told PTI.

CIL is required to pay a mining premium of 150.05 percent of the value of minerals dispatched to the state government.

Coal India said the timeline is one year for the grant of the composite license and three years for the execution of the mining lease deed, the miner informed bourses. Currently, the project is in a very preliminary phase, necessitating further exploration. In alignment with the government's Atmanirbharta vision, Coal India has formed a special team to focus on other critical minerals both globally and within India. Graphite, which has multiple applications including use in batteries, is a key area of focus amid the ongoing EV revolution in India. Nanda mentioned that it is too early to estimate the capital expenditure for the project. However, Coal India will leverage its coal mining expertise from its subsidiary Central Mine Planning & Design Institute Limited (CMPDI) during the initial phase.

PTI | July 22, 2024

➤ **How can the Ministry of Mines force Jharkhand State to auction valuable mineral blocks to private companies, violating the letter and the spirit of PESA/FRA Act?**

Addressed to Shri Rajiv Gauba, Union Cabinet Secretary

It is reported that the Centre is forcing the Jharkhand government to auction 10 valuable mineral blocks [at G2 (general) and G3 (preliminary) level of exploration] to private companies immediately, failing which it would go ahead and put them to auction.

In principle, the Centre issuing such a threat to a State government runs counter to the spirit of federalism.

More important, 12 districts in their entirety in Jharkhand (Ranchi, Khunti, Lohardagga, Gumla, Simdega, Latehar, West Singhbhum, East Singhbhum, Saraikela, Kharsawan, Dumka, JaMtara) and major parts of 3 districts (Palamu, Garhwa, Godda) stand notified as "Scheduled Areas" under the Fifth Schedule to the Constitution, where two important protective Central laws, namely, Panchayats (Extension to the Scheduled Areas) Act, 1996 [PESA] and the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA) are applicable. Both PESA and FRA confer special rights on the local adivasi Gram Sabhas, whose prior consent is mandatory before any mineral block is to be auctioned in a Scheduled Area.

The Ministry of Mines is either blissfully unaware of the Constitutional provisions applicable to such Scheduled Areas or openly defiant of those provisions, a situation that does not reflect well on the Centre's sensitivity and respect for enforcing those two legislations.

I am marking a copy of this letter to the Jharkhand government, the Union Ministry of Tribal Affairs, and the NCST, in addition to the office of the Rashtrapati Ji for intervention.

E A S Sarma, Countercurrents.org | 15/07/2024

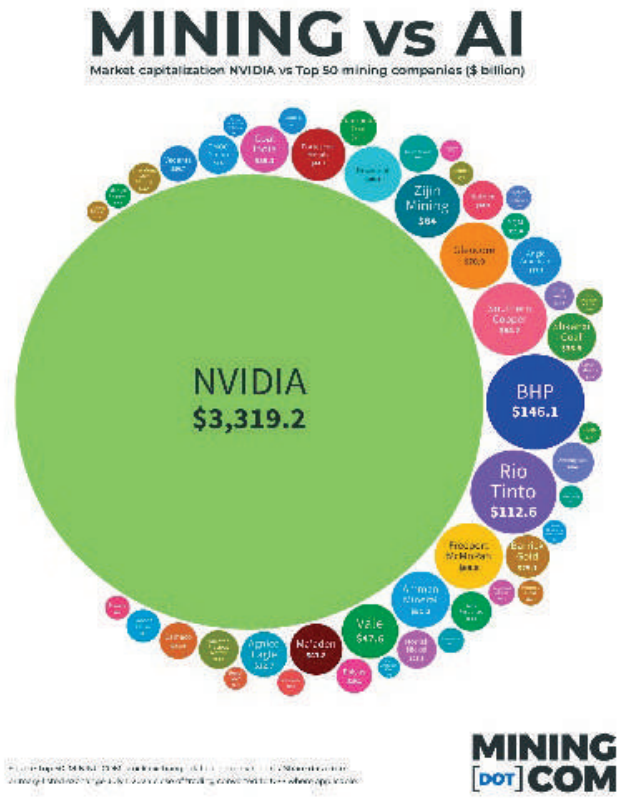
➤ **Mining vs AI: What's wrong with this picture?**

As the saying from mid-19th century California goes, during a gold rush the easiest way to get rich is selling shovels and picks. Never has this old business school adage been truer than for NVIDIA. The California-based company's market worth has skyrocketed as companies rush to buy its graphics processors to power artificial intelligence projects.

Nevertheless, it's jarring to see the companies doing the actual shovelling be appraised by the market in such a contrasting way. The MINING.COM ranking of the 50 most valuable mining companies shows a combined value of $1.4 trillion at the end of the second quarter, not even half that of NVIDIA.

There is another maxim from the mining industry: If it can't be grown it has to be mined.

Looking at this chart, that's clearly not something often mentioned in investment circles.



Frik Els | July 10, 2024

➤ Jammu and Kashmir lithium block gets no bids in second attempt

India's Jammu and Kashmir did not receive any bids in a second attempt to auction mining rights for lithium reserves found last year, according to a source with direct knowledge of the matter. The government in February 2023 found its first lithium deposits in Jammu and Kashmir with estimated reserves of 5.9 million metric tons.

After it failed to get a required minimum of three bids in its first auctions in November, the block was again put up for auction in March with a May 14 deadline for bids. The source, who declined to be identified as they were not authorised to talk to the media, said the block was likely to be given to a government agency for further exploration after no bids were made. India's Ministry of Mines did not immediately respond to a Reuters request for comment. As electric vehicles have focused on the need for lithium, used in making batteries, India has sought to secure assets overseas as well as domestically. Analysts have however questioned the composition of the deposit in Jammu and Kashmir. The Indian government in June last year, listed 30 minerals, including lithium, nickel, titanium, vanadium and tungsten as critical to its quest for cleaner energy.

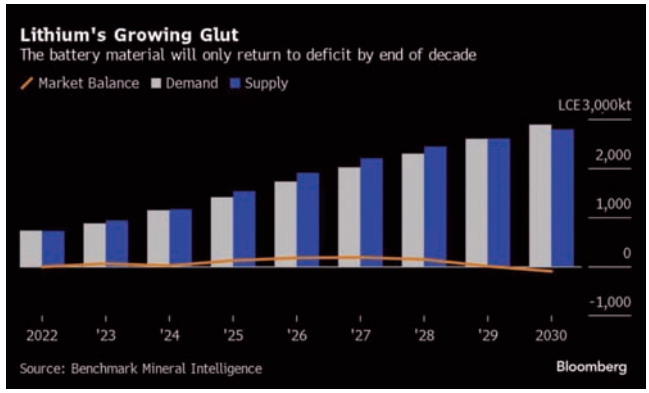
Reuters | July 03, 2024

➤ With no recovery in sight, lithium prices force miners to reevaluate output

Albemarle extracts lithium from underground brine deposits at this site in Silver Peak, Nevada. Credit: Albemarle

With lithium prices languishing near three-year lows and showing no signs a recovery is coming, attention is now turning to whether miners will be forced to rein in supply of the battery metal.

The price of the material that's vital to the energy transition has plunged by around 80% since late 2022, and Benchmark Mineral Intelligence sees the current glut deepening through 2027. While some smaller producers have already cut output, the question now is whether the bigger firms will choose to shutter mines and delay projects from Australia to Chile.



Clearer indications of the intentions of some top miners may be revealed in the coming weeks with the release of quarterly production reports or earnings. The insights from Pilbara Minerals Ltd., Mineral Resources Ltd., Albemarle Corp. and Arcadium Lithium Plc may provide clues on what the supply response might look like.

A prolonged period of low lithium prices could "trigger a renewed wave of mine supply cuts and project delays,"

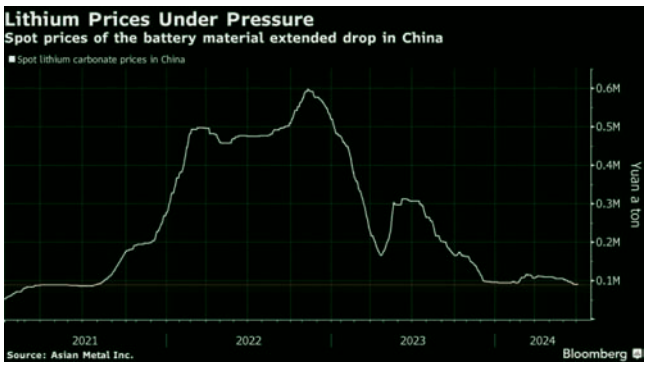
said Alice Yu, the lead metals and mining research analyst at S&P Global Commodity Insights. Prices for spodumene, a lithium-bearing raw material, dropped last week closer to the level when mining output cuts previously occurred between mid-January and end-February, according to data from Platts.

Lithium remains in the doldrums due to slowing growth in electric-vehicle adoption and increased supply. Spot prices of lithium carbonate in China have been hovering near the lowest since March 2021.

The market is expected to see a growth in supply of 32% in 2025, outpacing demand expansion of 23%, according to Benchmark Mineral. The surplus is set to peak in 2027 before a deficit returns at end of the decade, the consultancy said.

Some smaller players have already reacted to the prolonged price slump. Australia's Core Lithium Ltd. said this month it would halt operations at its Finniss project. In China, two of Zhicun Lithium Group Co.'s carbonate units will be put into maintenance from this month.

The weaker demand-growth outlook for EVs has continued to put downward pressure on lithium, with China's market maturing while European and American consumers delay purchases. The EV tariffs imposed by the EU and US against China products "have not only weighed on sentiment but have led to a drop in real-world lithium hydroxide demand," said Claudia Cook, an analyst at Benchmark Mineral.



Chinese industry giants Ganfeng Lithium Group Co. and Tianqi Lithium Corp. both swung to preliminary net losses in the first half. While major miners such as Pilbara Minerals are still aiming to expand output, there's growing pressure on other miners to curtail production. "We've downgraded supply forecasts for Brazil, Chile, Argentina, and Australia due to diminished profit margins," said Linda Zhang, the battery materials lead for Asia Pacific at CRU Group.

Some producers are clinging on despite having little to no profit margin, Benchmark Mineral's Cook added, citing reasons including maintaining a skilled workforce, avoiding restarting-production costs, and preserving relationships with their buyers.

World's Top Lithium Producers

	2023	2030 Forecast
1	Albemarle	Albemarle
2	SQM	SQM
3	Pilbara Minerals	Arcadium Lithium
4	Arcadium Lithium	Ganfeng Lithium
5	Tianqi Lithium	Mineral Resources
6	IGO	Pilbara Minerals
7	Mineral Resources	Sigma Lithium
8	Qinghai Salt Lake	Sinomine
9	Ganfeng Lithium	Tianqi Lithium
10	Jiangxi Tungsten	IGO

Source: Benchmark Mineral Intelligence
Note: Supply forecast based on mined production and asset ownership percentage
Bloomberg

The stronger focus on supply comes as hopes fade for a significant demand rebound this year, with the supply chain still working through inventories and carmakers rethinking their EV strategies. BloombergNEF last month slashed its EV sales estimates and warned that the auto industry is falling further off the track toward decarbonization.

The question now is how long lithium companies will be able to maintain output should prices remain stagnant, or even fall further. Curtailments and project deferments are expected to "peak next year," and that could tighten the market balance in the medium term, CRU's Zhang said.

Bloomberg News | July 21, 2024

➤ US has second-longest mine development timeline in the world, S&P Global says

The area where Pebble mine would be built, 320 km southwest of Anchorage, within the Bristol Bay watershed. (Image courtesy of Northern Dynasty Minerals)

(Continued on Page 21)

HUMAN ERROR AND ITS IMPACT ON MINING ACCIDENTS: AN ANALYTICAL STUDY

Suman Kanjilal[1] and Dr S C Jain[2]

Abstract

This research paper dives into the critical analysis of two significant mining incidents includes the Lalmatia Open Cast Coal Mine disaster and the Palaspani Manganese Mine incident. Using a variety of analytical techniques such as Human factors Analysis and Classification System (HFACS), Analytical Hierarchy Process (AHP), Bow Tie Risk Management, and Fault Tree Analysis (FTA). The study aims to identify and analyse the human factors that contributed to these accidents.

The Lalmatia Open Cast Coal Mine disaster resulted in multiple fatalities due to the collapse of a mine face. It worsened by inadequate safety measures and failure to act on evident hazards. In the Palaspani Manganese Mine incident, a mine roof collapsed during mucking operations, leaving two workers seriously injured and one worker deceased. Both scenarios illustrate the lapses in safety culture, regulatory oversight, and human decision-making processes.

This study pinpoints critical human factors that were crucial in these disasters through in-depth analysis. These factors include poor supervisory actions, a lack of risk awareness, and inadequate training. The results highlight how important it is to promote a culture that prioritizes safety. In the end, this research helps to prevent such accidents by providing insightful analysis and suggestions for raising safety standards in the mining sector.

Keywords: *Mining accidents, safety culture, Analytical Hierarchy Process (AHP), Human Factors Analysis and Classification System (HFACS), Bow-Tie Risk Management, Fault Tree Analysis (FTA).*

1. Introduction

Mining is still among the most hazardous occupations due to the high number of accidents. This results in serious injuries, fatalities, and large financial losses. Human aspects are essential in addition to the many other factors that contribute to these accidents. Mining operations are complicated and high-risk, therefore in order to reduce possible hazards, strict security procedures, ongoing supervision, and a strong safety culture are required. This research paper focuses on a detailed analysis of two major mining accidents, i.e. the Palaspani Manganese Mine event and the Lalmatia Open Cast Coal Mine tragedy.

Mining has an existence which runs back thousands of years. It has influenced economies, communities, and landscapes while promoting global industrialization, urbanization, and technical developments. But in addition to its proven benefits to human advancement, the mining sector has hazards and challenges of its own & the most significant of which is the likelihood of mining accidents.

1.1 Types of Mining Accidents

The term "mining accident" describes a broad range of events and situations. Several general categories of accidents are frequently seen in the mining business. Causes of mining accidents can vary greatly based on factors such as geological conditions, technological complexity, and regulatory oversight:

i. **Structural failures:** Some of the most critical and real risks that miners encounter when working underground are structural failures. It includes cave-ins, roof collapses, and tunnel collapses.

ii. **Explosion & fires:** Mining activities are at serious risk from explosions and fires. Risks increases in areas where combustible gases, dusts, and vapours are present. The most frequent causes of explosions and fires are methane explosions, coal dust explosions, and spontaneous combustion of coal seams in underground coal mines.

iii. **Equipment malfunctions:** The safety and productivity of mining operations also depends on the machinery and equipment that operates effectively. Problems includes poor maintenance, incorrect use, and design defects. This can cause equipment to malfunction, break down, or fail.

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iv. **Toxic gas exposure:** Underground mining operations pose a considerable risk of exposure to poisonous gases. Gas includes methane, carbon monoxide, and hydrogen sulphide. This can lead to diseases such as respiratory distress, asphyxiation, and other harmful health impacts.

v. **Chemical spills & contamination:** Hazardous material handling, transportation, and storage can result in chemical spills and contamination events. It threatens public health, the health of the environment, and the well-being of local communities. As a result, management including cleanup measures must be taken quickly.

vi. **Transportation accidents:** Vehicles such as Dump truck, Man hauler, trains, conveyor belts, etc. are used in this process. These accidents can be caused by a variety of factors such as poor road design, mechanical failure, severe weather, and driver mistake.

1.2 Importance of study Mining Accidents

The importance of researching on mining accidents will give us the broad view on cause and remedy for any accident that occur during mining activities. Following are the reasons which will emphasize the importance of the necessity for careful study:

i. **Protection of human life:** Miners' safety and well-being are important factors that go beyond practical and financial issues therefore, protection of human life is the first priority in any mining operation.

ii. **Safeguarding economic viability:** The financial stability and operational continuity of mining companies can all be negatively impacted by mining accidents. The impact happens on larger economies as well as on the communities that depends on mining for jobs and economic development.

iii. **Enhancement of safety culture:** Mining disasters frequently act as wake-up calls for industry participants after which they review their organizational cultures, safety protocols, and processes.

A multidisciplinary strategy which integrates ideas from psychology, ergonomics, sociology, organizational behaviour, and safety research is necessary for understanding the significance of human factors in mining accidents.

1.3 Analytic Hierarchy Process (AHP)

The Analytic Hierarchy Process (AHP) is a method for organizing and analyzing complicated choices using mathematics and psychology. It was developed in the 1970s by Thomas L. Saaty and has since been improved. It can be broken down into three sections:

- The primary goal
- All possible solutions or alternatives
- The criteria.

AHP provides a logical framework for making significant decisions. It is done by quantifying the criteria and other options involved in a decision. The criteria are then related to the primary goal. In decision theory, the AHP model is frequently used. Generally, it accounts for competing, measurable, and abstract criteria.

1.4 Human Factors Analysis and Classification System (HFACS)

The Human Factors Analysis and Classification System (HFACS) was designed by Dr Scott Shappell and Dr Doug Wiegmann. To examine and assess aviation-related human factors issues this comprehensive human error framework was first used by the US Air Force. HFACS was largely inspired by James Reason's Swiss cheese concept (Reason 1990) as shown in Plate 3.1. The HFACS framework provide a means of aiding in the investigative process as it helps to concentrate training and preventive efforts. Investigators can systematically identify organizational issues, both inactive and active that caused an accident. The goal of HFACS is to understand the underlying reasons of an event rather than assigning blame.

1.5 Fault Tree Analysis (FTA)

Finding the potential causes of a system failure is feasible through fault tree analysis (FTA). It is sometimes referred to as event tree analysis at times. A fault tree is a diagram that is used to visually represent the various potential causes of a failure. FTA can assist maintenance teams in setting a priority list after identifying and addressing the primary causes for corrective measures. FTA illustrates the various circumstances or events that could result in an unfavorable result. These results may include equipment failure, using a fault tree analysis graphic.

1.6 Bow-Tie Diagram

A Bow Tie diagram is a risk management tool that shows the preventive and mitigating measures. These measures are being taken by visually representing the path from potential hazards to their possible consequences as. The danger is positioned in the middle of the diagram, then followed by threats on the left and consequences on the right.

2. Lalmatia open cast coal mine Disaster

2.1 Accident summary

The accident occurred in the Maintala Dip Mine, also known as Mahalaxmi Patch, within the Rajmahal Project. The mine had been closed for two months due to unsafe mining conditions. on 26th December 2016 mining resumed with permission from the Director General of Mines Safety (DGMS). The height of the overburden was around 700 -800 feet and is surrounded by three sides of the working face of the mine. The overburden was dangerously close

to the working face that violates the basic safety norm of maintaining a 60-meter distance. The accident occurred on 29th December 2016, during the second shift at about 07:30 PM. A large quantity of overburden slid down onto workers below. At the time of the accident, 35 to 40 dumpers and one shovel were in operation that suggests that 70 to 80 workers were present.

2.2 Analytic Hierarchy Process (AHP) on the incident

Applying the Analytic Hierarchy Process (AHP) method to prioritize risk factors, decision-making criteria, and intervention options relevant to safety management within the context of this accident.

2.2.1 Establishing Criteria

For AHP analysis criteria are establish that are relevant to safety management in mining accidents.

Based on the information provided, following criteria are identified:

- Unsafe mining conditions (UMC)
- Ignored safety warnings (ISW)
- Violation of safety norms (VSN)
- Inadequate safety measures (ISM)
- Poor emergency response (PER)

Compare each criterion against the others and assign values based on their relative importance. The ratings for the criteria and the performance are determined by the expert judgments from professors and professionals in the sector of mining.

Expert opinions can be obtained by having participants compare the relative merits of alternatives of certain criteria in pairwise comparisons as shown in Table 1.

Table 1: Normalised Matrix based on the rating

CRITERIA	UMC	ISW	VSN	ISM	PER
UMC	1	4	6	7	5
ISW	1/4	1	4	5	3
VSN	1/6	1/4	1	3	2
ISM	1/7	1/5	1/3	1	3
PER	1/5	1/3	1/2	1/3	1

To normalize the matrix, divide each element by the sum of its column as shown in Table 2.

- UMC: 1 + 1/4 + 1/6 + 1/7 + 1/5 = 1 + 0.25 + 0.1667 + 0.1429 + 0.2 = 1.7596
- ISW: 4 + 1 + 1/4 + 1/5 + 1/3 = 4 + 1 + 0.25 + 0.2 + 0.3333 = 5.7833
- ISM: 6 + 4 + 1 + 1/3 + 1/2 = 6 + 4 + 1 + 0.3333 + 0.5 = 11.8333
- PER: 7 + 5 + 3 + 1 + 1/3 = 7 + 5 + 3 + 1 + 0.3333 = 16.3333
- ES: 5 + 3 + 2 + 3 + 1 = 5 + 3 + 2 + 3 + 1 = 14

Table 2: Normalized pairwise comparison matrix:

CRITERIA	UMC	ISW	VSN	ISM	PER
UMC	0.568	0.691	0.507	0.428	0.357
ISW	0.142	0.338	0.173	0.307	0.214
VSN	0.095	0.043	0.084	0.204	0.143
ISM	0.081	0.034	0.028	0.061	0.214
PER	0.114	0.058	0.042	0.020	0.071

To find the priority vector, average each row of the normalized matrix as shown in Table 3. Multiply priority vector to respective column of normalized matrix and sum it to obtain values as shown in Table 4.

Table 3: Priority Vector

CRITERIA	PRIORITY VECTOR
UMC	(0.568+0.691+0.507+0.428+0.357) / 5 = 0.5102
ISW	(0.142+0.173+0.338+0.307+0.214) / 5 = 0.2348
VSN	(0.095+0.043+0.084+0.204+0.143) / 5 = 0.1138
ISM	(0.081+0.034+0.028+0.061+0.214) / 5 = 0.0836
PER	(0.114+0.058+0.042+0.020+0.071) / 5 = 0.061

Table 4: Ratio of weighted sum value and Criteria Weights

CRITERIA	weighted sum value	Criteria Weights	λ_{max}
UMC	3.4536	0.5102	6.77
ISW	1.1828	0.2348	5.04
VSN	0.5115	0.1138	4.49
ISM	0.3774	0.0836	4.51
PER	0.3592	0.061	5.89

Average λ_{max}: (6.77+5.04+4.49+4.51+5.89)/5=26.7/5=5.34

Consistency Index (CI) for Main Criteria

CI = (λ_{max} - n) / (n - 1), where n = 5

CI = (5.34–5)/(5 – 1) = (0.34)/(4) = **0.085**

Consistency Ratio (CR) for Main Criteria

Random Index (RI) for n=5 is 1.12 (standard value for RI)

CR = CI / RI = 0.085/1.12= **0.076**

The CR is less than 0.10, which is acceptable.

i. **Unsafe mining conditions** is identified as the most critical factor contributing to the accident as this has the highest priority weight of 0.5102. This highlights how important it is to manage risky situations in mining operations. This is very important factor to study in order to stop incidents like this from happening again.

ii. **Ignored safety warnings** is the second most critical factor with a priority weight of 0.2348. Employees' failure to pay attention to safety warnings. Also it highlights the need for improved response to safety concerns and communication.

iii. **Inadequate safety measures** has a priority weight of 0.1138. This highlights the importance it is to provide proper security measures. Also improve precautions to keep employees safe in high-risk situations.

iv. **Poor Emergency Response** is the fourth most critical factor and have priority weight of 0.0836. The analysis highlights how important it is to have efficient emergency response strategies in place. This is to lessen the effects of mishaps when they happen.

v. **Electrical Safety** with a priority weight of 0.061 and is the least critical factor among those considered. Though it's not as critical as the other reasons in this specific instance but it is essential.

2.3 Human Factors Analysis and Classification System (HFACS) on the incident

2.3.1 Level 1: Unsafe acts

- **Routine violations:** Workers continued working despite noticing and reporting cracks in the overburden. The threat of termination was the driving force behind this regular violation.
- These are the situational, psychological, and environmental elements that affect risky behaviour.

2.3.2 Level 2: Preconditions for unsafe acts

- **Environmental factors:** The presence of unstable overburden creates unsafe mining conditions.
- **Physical environment:** The overburden violated safety regulations as employees stands between 700 and 800 feet high. It is very dangerous to work near face.
- **Adverse mental states:** The contractor threatened to dismiss the workers if they didn't work in those unsafe conditions. This made employees worried and less cautious about their safety.

2.3.3 Level 3: Unsafe supervision

- **Inadequate supervision:** The management failed to act on the reported cracks and safety concerns raised by the workers.
- **Anticipated improper activities:** The decision to carry on with mining activities without addressing the dangerous circumstances that were previously reported.

2.3.4 Level 4: Organizational influences

- Resource Management: exporting to an insufficiently safe contractor.
- Organizational Climate: a mentality that values output over worker safety and ignores safety alerts will result in systemic safety problems.

2.4 Bowtie diagram of the Lalmatia open cast coal mine Disaster

Fig 1 shows the Bow-tie diagram for Lalmatia open cast coal mine Disaster which includes following important terms:

- **Hazard:** Unstable mine overburden is the primary hazard.
- **Top Event:** The crucial incident is the overburden's fall.
- **Threats:** The continuation of hazardous mining conditions and the failure to address apparent cracks increases the chances for hazard to occur. Labor was forced to work in dangerous conditions and excessive amounts of material too close to the working face led to the top event.
- **Mitigative controls:** Effective emergency response and rescue plans, sufficient dewatering systems, and staff education are important to lessen the effects.

2.5 Fault Tree Analysis (FTA) of the Chas Nala Colliery Disaster

Fig 2 shows the Fault tree analysis for Chas Colliery Disaster which includes following important terms:

- **Top event:** This is represented by a rectangular shape with the label " rajmahal mine accident".
- **Basic events (BE):** These are represented by circular shapes and the label "inadequate safety protocols, cracks in overburden, unsafe overburden height, resumed work without safety, Lack of Training, management inaction, and emergency resources insufficient".
- **Intermediate events (IE):** These are represented by rectangular shape with the label "unsafe mining conditions, ignored safety warnings, and poor emergency response".

3. Palaspani Manganese Mine Incident

3.1 Accident summary

A fatal disaster happened at M/s Krishnaping Alloys Limited in Palaspani Manganese Mine in Chhindwara,

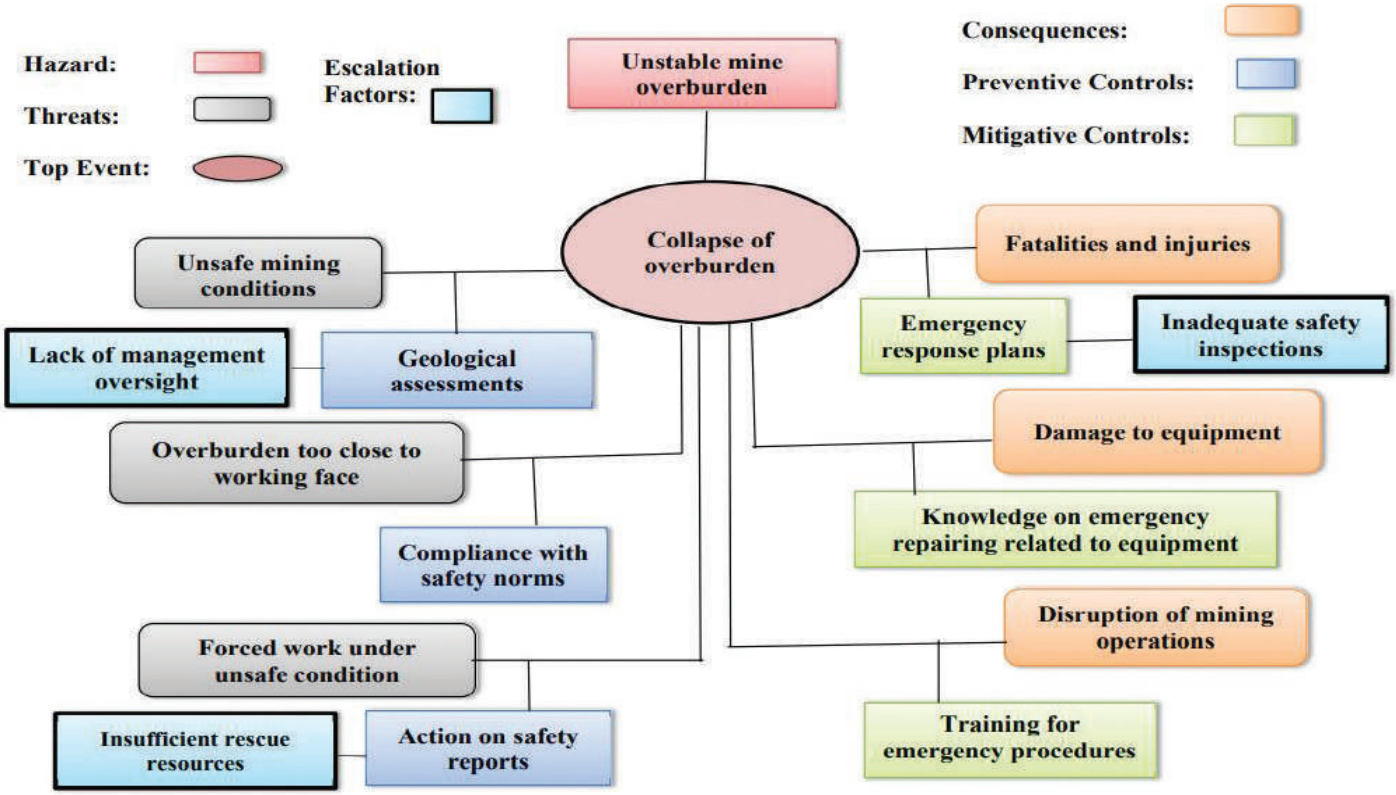

Fig 1 *Bowtie diagram of the Lalmatia open cast coal mine Disaster*

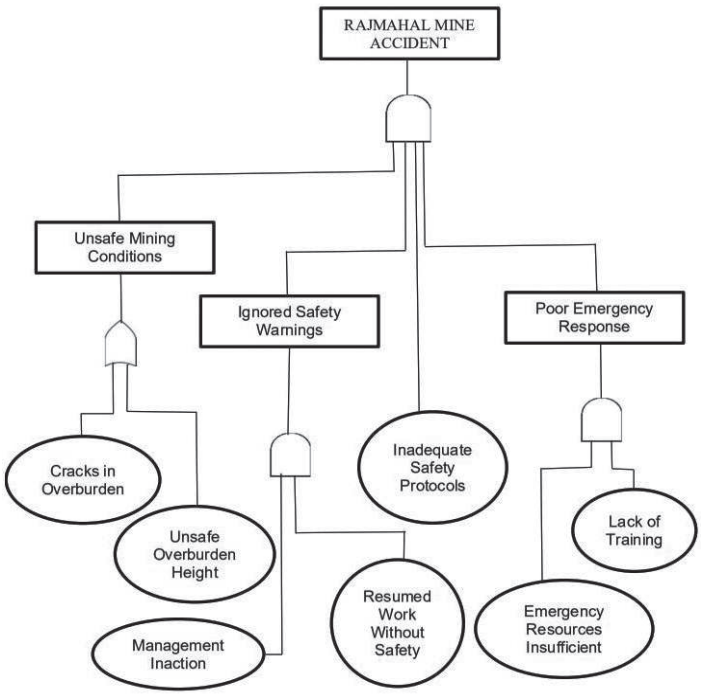

Fig 2 *Fault Tree Analysis (FTA) of the Chas Nala Colliery Disaster*

Madhya Pradesh. This happened on March 13, 2024 at a subsurface level of 292.00 meters. The incident happened at 18:15 hours on Hangwall West Ore Drive between West X-Cut 1 and West X-Cut 2. A portion of the mine roof fell during mucking operations. It was about 1.8 meters long, 2 meters wide, and 0.20 meters thick. The portion of mine roof collapsed on top of a crew of four miners. This includes assessing potential hazards before deploying personnel or machinery. To understand the importance of teaching and training to all staff members on the risks of roof and side collapses. Also, crucial safety measures are required to prevent such occurrences was highlighted.

3.2 Analytic Hierarchy Process (AHP) on the incident

3.2.1 Establishing criteria:

- Support of mine strata (SMS)
- Geological assessments (GA)
- Training and education (TE)
- Safety protocol adherence (SPA)

Expert opinions can be obtained by having participants compare the relative merits of alternatives of certain criteria in pairwise comparisons as shown in Table 5.

Table 5: Normalised Matrix based on the rating

CRITERIA	SMS	GA	TE	SPA
SMS	1	2	3	5
GA	1/2	1	2	4
TE	1/3	1/2	1	3
SPA	1/5	1/4	1/3	1

Calculate the sum of each column to obtain normalized matrix as shown in Table **6**:

- SMS: 1+1/2+1/3+1/5 = 2.033
- GA: 2+1+1/2+1/4 = 3.75
- TE: 3+2+1+1/3 = 6.333
- SPA: 5+4+3+1=13

Table 6: Normalized pairwise comparison matrix:

CRITERIA	SMS	GA	TE	SPA
SMS	0.492	0.533	0.474	0.385
GA	0.246	0.267	0.316	0.308
TE	0.164	0.133	0.158	0.231
SPA	0.098	0.067	0.053	0.077

To find the priority vector, average each row of the normalized matrix as shown in Table 7. Multiply priority vector to respective column of normalized matrix and sum it to obtain values as shown in Table 8.

Table 7: Priority Vector

CRITERIA	PRIORITY VECTOR
SMS	(0.492+0.533+0.474+0.385)/4=0.471
GA	(0.246+0.267+0.316+0.308)/4=0.284
TE	(0.164+0.133+0.158+0.231)/4=0.171
SPA	(0.098+0.067+0.053+0.077)/4=0.074

Table 8: Ratio of weighted sum value and Criteria Weights

CRITERIA	weighted sum value	Criteria Weights	λ_{max}
SMS	2.059	0.471	4.373
GA	1.097	0.284	3.863
TE	0.663	0.171	3.876
SPA	0.366	0.074	4.946

Average λ_{max}: (4.373+3.863+3.876+4.946)/4 = 4.2645

Consistency Index (CI) for Main Criteria

CI = (λ_{max} - n) / (n - 1), where n = 4

CI = (4.2645–4)/(4-1) = 0.2645/3 = 0.088

Consistency Ratio (CR) for Main Criteria

Random Index (RI) for n=4 is 0.90 (standard value for RI)

CR = CI / RI = 0.088/0.90 =0.097

The CR is less than 0.10, which is acceptable.

i. **Support of mine strata:** This criterion was given the highest priority that reflects its critical importance in preventing accidents. It has a weight of 0.471. Effective support of mine strata can greatly lessen this risk of roof collapses which was the main cause of the disaster.

ii. **Geological assessments:** It has a 0.284 priority weight which indicates geological assessments are essential. It is to understand and minimize possible risks associated with the geological characteristics of the mine.

iii. **Education and training:** This criterion has a weight of 0.171 that highlights the significance of teaching and training mine workers. Appropriate instruction can improve the employee's ability to identify and respond to unsafe condition.

iv. **Safety protocol adherence:** Although it has lower priority but still it contributes a significant factor in maintaining overall safety. Following to strict safety procedures can lower the probability of accidents.

3.3 Human Factors Analysis and Classification System (HFACS) on the incident

3.3.1 Level 1: Unsafe acts

- **Skill-Based Errors:** The crew could have experienced insufficient skills to identify early warning signs of a potential collapse of the roof. By this crew can take immediate corrective actions.
- **Routine Violations:** There may have been a routine disregard on the importance of safety regulations. This is done by paying close attention to understand the necessity to support the mine roof and frequent geological inspections.

3.3.2 Level 2: Preconditions for unsafe acts

- **Environmental factors physical environment:** A dangerous working environment has resulted due to the mine roof's damaged structural integrity. The measurements taken of the collapse region shows that the roof had insufficient support.
- **Inadequate training:** The workers particularly involved in the accident have only nine months of experience. That indicates that they weren't given adequate instruction on the risks and safety measures related to roof collapses.
- **Communication and teamwork:** Errors in communication and teamwork could have prevented timely reporting. This further delayed the response to early signs of instability.

3.3.3 Level 3: Unsafe supervision

- **Inadequate supervision:** Geological studies were not carried out before mucking activities. This resulted in ineffectively support of the mine roof. It's possible that supervisors ignored their duty to strictly follow safety procedures.
- **Planned inappropriate operations:** There may have been pressure to continue operations without

adequate safety measures in place. It also reflects on how planned decisions prioritized productivity over safety.

3.3.4 Level 4: Organizational influences

- **Resource management:** The organization potentially lacked sufficient resources for proper mine roof support and safety training.
- **Organizational processes:** The processes may have not been followed for regular geological assessments.

3.4 Bowtie diagram of the Palaspani Manganese Mine Incident

Fig 3 shows the Bow-tie diagram for Palaspani Manganese Mine Incident which includes following important terms:

- **Hazard:** The unstable mine roof poses a major risk.
- **Top Event:** The crucial incident was the mine ceiling collapsing.
- **Threats:** Insufficient structures of support, poor geological evaluations along with unsuitable procedures for inspection and maintenance are the major threats.

3.5 Fault Tree Analysis (FTA) of the Ruchayan Village Coal Mine Incident

- Fig 4 shows the Fault tree analysis for Chas Colliery Disaster which includes following important terms: **Top event:** This is represented by a rectangular shape with the label "roof collapse in underground mine".
- **Basic events (BE):** These are represented by circular shapes and the label "unsupported strata, inadequate safety training, weak geological formations, failure to assess geological conditions, non-compliance with support, and insufficient Safety Measures".
- **Intermediate events (IE):** These are represented by rectangular shape with the label "inadequate geological conditions, and ignored safety procedures".

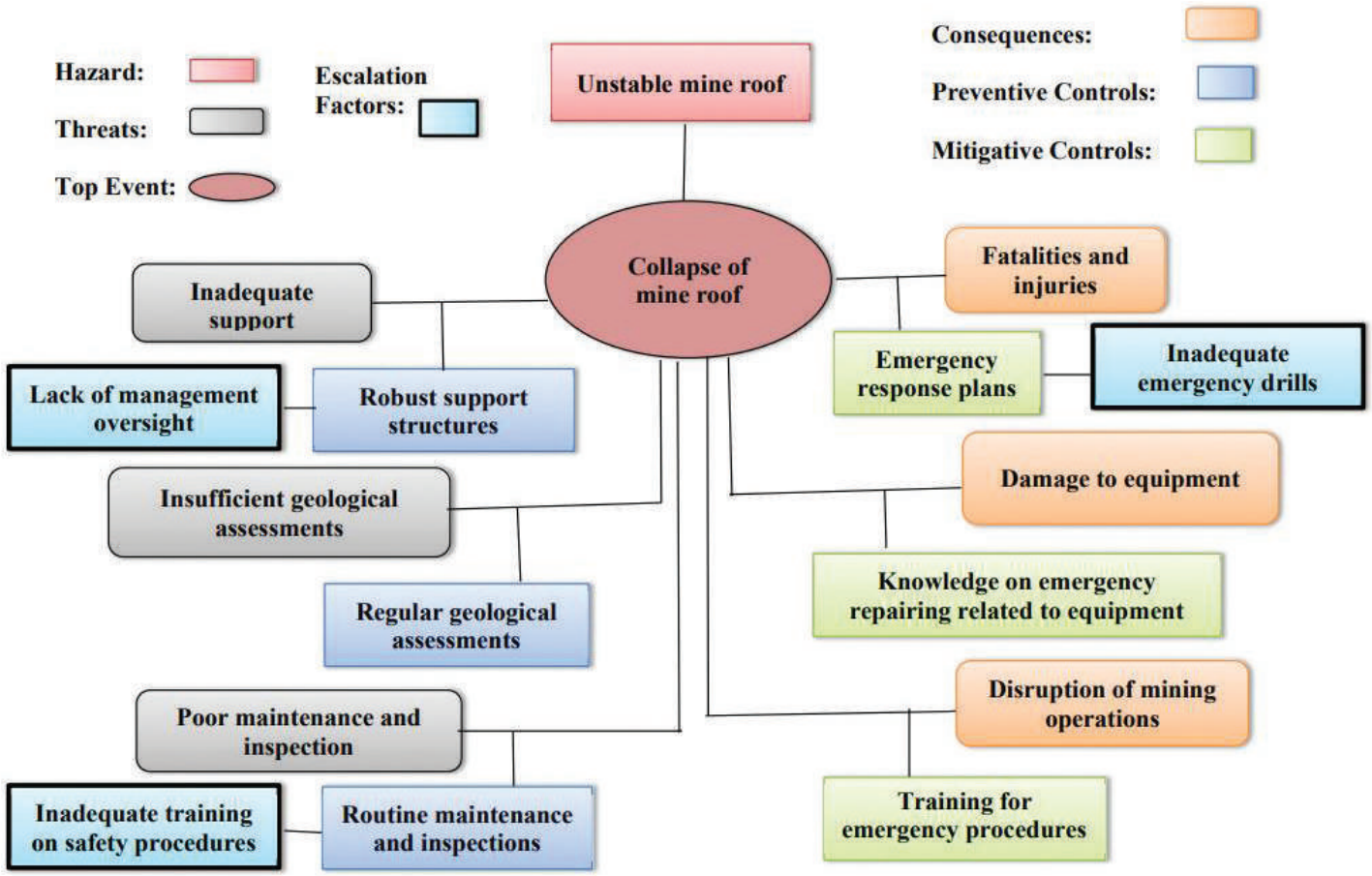

Fig 3 *Bowtie diagram of the Palaspani Manganese Mine Incident*

4. CONCLUSIONS

The research highlights important areas that requires attention and improvement by applying comprehensive analytical methods. The analysis of the Lalmatia Open Cast Coal Mine disaster and the Palaspani Manganese Mine incident provided critical insights into the following human factors contributing to mining accidents:

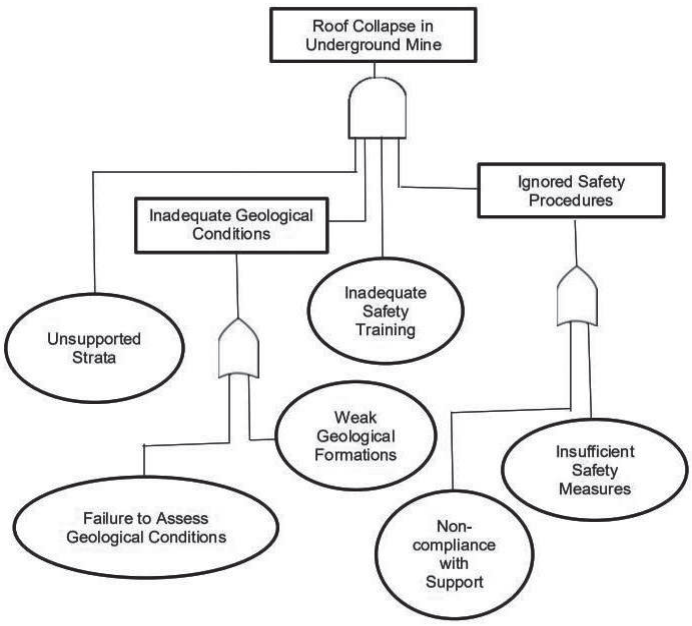

Fig 4 *Fault Tree Analysis (FTA) of the Ruchayan Village Coal Mine Incident*

i. **Inadequate Safety Culture:** These two events highlight the widespread absence of a strong safety culture in mining operations. Sufficient preventive measures were not taken in the Lalmatia accident despite of visible cracks and regular worker warnings. The Palaspani incident's fatal collapse was caused due to insufficient routine inspections.

ii. **Failure to Act on Identified Hazards:** A major factor in both accidents was lack of action regarding known threats. Lalmatia employees noticed fissures in the overburden days before collapse, but no remedial work was done. The absence of regular inspections in Palaspani allowed dangerous circumstances to continue unnoticed.

iii. **Inadequate Training and Awareness:** Significant problems in worker awareness and training were found in both occurrences. In Lalmatia, workers persisted to labour in unsafe conditions. This happened because they were unaware of the dangers or were afraid of losing their jobs. At Palaspani was partially triggered by insufficient training in hazard recognition and reaction.

iv. **Supervisory and Organizational Failures:** In each case, there were clear supervisory failures. Although obvious warning indications were given in Lalmatia, supervisors failed to implement safety procedures or take preventative action. Production was given priority over safety in organizational decision-making. Prioritizing safety in organizational decision-making and enhancing supervisory roles and responsibility are important.

It is feasible to drastically lower the frequency and seriousness of mining accidents by addressing these crucial areas. It will guarantee a safer working environment for all employees engaged in mining activities. In addition to offering insightful advice for enhancing safety in the mining sector, the conclusions also further reinforce the primary goal of avoiding further fatalities.:

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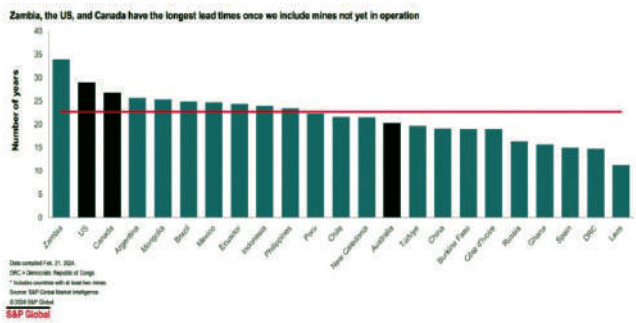
(Continued from Page 12)

According to a new report by S&P Global, the United States has the second-longest lead times in the world for developing a new mine. Mines in the US go from discovery to production in an average of 29 years, longer than in any other country except Zambia (34 years), the consultancy says.



"The long US lead times stand in contrast to the country's sizeable resource base. The US copper endowment (more than 275 million tonnes in reserves and resources) is comparable to those of Canada and Australia combined and sufficient to satisfy domestic demand for the foreseeable future," the report reads.

The United States' endowment of lithium (more than 43 million tons in reserves and resources) is more than twice that of Australia, which currently accounts for half of the world's lithium production, S&P says.

The report also shows that the United States receives less mining exploration budgets than its advanced economy peers. Investment has been 57% higher in Australia and 81% higher in Canada over the past 15 years. The report examines 268 mines worldwide to determine average development times from discovery to production. Most of the mines are operating. Only three mines have come into production in the US since 2002, while ten additional non-operating projects have remained in development for decades — one having been in development since 1978.

	Operating mines that came online 2002-2023			Non-operating mines (still in development, pre-production)			Total mines (operating and non-operating)		
	No. of properties	In-situ value (US$)	Average value (US$)	No. of properties	In-situ value (US$)	Average value (US$)	No. of properties	In-situ value (US$)	Average value (US$)
Australia	11	367.7 B	33.4 B	18	398.7 B	22.2 B	29	766.5 B	26.4
Canada	11	161.1 B	14.7 B	19	916.5 B	48.2 B	30	1,077 B	35.9
US	3	35.5 B	11.8 B	10	1,039 B	103.9 B	13	1,074 B	82.6

S&P Global

"Pre-production value of the 10 US mines still in development, though not yet operating, represents a value of more than $100 billion worth of copper, gold, lithium and zinc," comments Mohsen Bonakdarpour, S&P executive director.

Ghana, the Democratic Republic of Congo, and Laos had some of the shortest development times in the world, at roughly 10 to 15 years, while Australia had an average of 20 years.

The report found that a high rate of litigation against US mining projects has dampened exploration budgets in the country. Among US projects facing Indigenous and environmental opposition are Rio Tinto and BHP's Resolution Copper project in Arizona, and Northern Dynasty's Pebble copper and gold project in Alaska, neither of which are permitted.

The report also found that gold mines developed the fastest globally, at an average of 15.2 years, while nickel mines developed the slowest at 17.5 years.

MINING.COM Staff Writer | July 18, 2024

➤ Sri Lanka opposes India's bid to explore cobalt from an undersea mountain in Indian Ocean

The island nation's government has urged the ISA to refrain from accepting New Delhi's plea for exploration rights in Afanasy Nikitin Seamount till the United Nations Commission on the Limits of the Continental Shelf (UN-CLCS) decides on its continental shelf claim.

New Delhi: A fresh maritime dispute between New Delhi and Colombo seems to be brewing with Sri Lanka objecting to India's plea to the International Seabed Authority (ISA) based at Kingston in Jamaica for rights to explore cobalt-rich ferromanganese crusts in Afanasy Nikitin Seamount in the Indian Ocean.

Colombo has argued that the area where India wants to explore cobalt-rich ferromanganese crusts is entirely within the extended continental shelf claim of Sri Lanka. The island nation's government has urged the ISA to refrain from accepting New Delhi's plea for exploration rights in Afanasy Nikitin Seamount till the United Nations Commission on the Limits of the Continental Shelf (UN-CLCS) decides on its continental shelf claim. The ISA is "following applicable procedures in this regard and the matter is ongoing", a spokesperson of the Ministry of Foreign Affairs of the Sri Lankan government said.

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MEAI NEWS

BANGALORE CHAPTER

Mines Safety Association Karnataka In association with the Mining Engineers' Association of India

Organized National Mining Conclave – 2024 at J. N. TATA Auditorium, Indian Institute of Science, Bangalore, on 28th& 29th June 2024; Total Attendees: 775

Welcome address by Mr K Madhusudhana

On 28.06.2024, the National Mining Conclave 2024 commenced with an impactful welcome address delivered by Shri K. Madhusudhana, Honorable Secretary, MSAK and CEO of M/s MSPL Limited. The address set the tone for the event, highlighting the purpose of the conclave, important issues to be addressed, and key themes of innovation, sustainability, and collaboration within the mining industry. Shri K. Madhusudhana began by acknowledging the presence of DGMS Officials, distinguished guests, and delegates from across the industry. This gesture underscored the significance of collective efforts in shaping the future of mining in the nation.

Lighting of Lamp by the Dignitaries

Following the welcome address, the dignitaries inaugurated the program by lighting Lamp. The lamp, symbolizing enlightenment and auspiciousness, was placed at the center of the stage. Each dignitary, starting with the Chief Guest, Guest of Honor, and representatives from Various Mining Companies, approached the lamp to light it, accompanied by the chanting of hymns or prayers, creating a solemn atmosphere.

Address by Shri. D.B. Sundar Ramam:

Shri. D.B. Sundar Ramam began by acknowledging the efforts of Mines Safety Association Karnataka, the Mining Engineer's Association of India, and the presence of fellow industry leaders, policymakers, and stakeholders gathered at the conclave. He highlighted the importance of such platforms in fostering dialogue and collaboration for sustainable development in mining. Addressing the complexities faced by the mining industry, Shri. D.B. Sundar Ramam outlined key challenges such as environmental sustainability, regulatory compliance, and technological advancements. He stressed the need for innovative solutions to mitigate these challenges while ensuring responsible mining practices.

Address by Dr. Suresh Prasad

Dr. Suresh Prasad, Regional Controller of Mines (SZ), Bangalore delivered an insightful address at the National Mining Conclave 2024. His expertise and role as a key regulatory figure provided valuable perspectives on regulatory frameworks, industry challenges, and the future trajectory of the mining sector in India.

Dr. Suresh Prasad emphasized the role of technology and innovation in transforming the mining sector. He cited examples of technological advancements in mining practices, such as drone surveys, automation, artificial intelligence, and remote sensing, which enhance efficiency, safety, and environmental stewardship.

Address by Shri. Deo Kumar

Shri. Deo Kumar commenced his address by extending a warm welcome to esteemed guests, industry leaders, and delegates gathered at the conclave. He highlighted the significance of the event in fostering dialogue, sharing knowledge, and addressing critical issues affecting the mining industry. Reflecting on India's commitment to sustainable development goals (SDGs), Shri. Deo Kumar emphasized DGMS initiatives to promote safe mining practices. He discussed collaborative efforts with mining companies to integrate environmental sustainability, social responsibility, and economic viability into their operations.

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Address by Shri. Girish R, IAS

Shri. Girish R, an esteemed IAS officer serving as the Director of the Department of Mines & Geology, Karnataka delivered a pivotal address at the National Mining Conclave 2024. He emphasized the importance of collaborative efforts and knowledge exchange in shaping the future of mining practices in Karnataka and beyond. He discussed the diversity of minerals extracted and the operational scale of mining activities within Karnataka and acknowledged the services of the Mines Safety Association, Karnataka, and the Mining Engineers' Association of India.

A souvenir is published on this occasion to make the event markable and rememberable one. The release of the souvenir at the National Mining Conclave 2024 marked a significant moment in the event, symbolizing the culmination of collective efforts and contributions toward advancing the mining sector. The ceremony was graced by esteemed dignitaries, including the Chief Guest and other notable personalities from the industry and government sectors.

Release of Souvenir by Chief Guest & other Dignitaries

Release of Book by Shri. Prabhat Kumar

This event was even memorable after the release of the book titled "The Smart Slope Management with Fragrance of Rampura Agucha Mine" was a momentous occasion at the National Mining Conclave 2024. This book, authored by Akhilesh Joshi, Director-HZL, Vedanta who was not present at the event due to pre-occupation with another program, and Dr. Pramod Rajmeny, a renowned Geotech Consultant, delves into innovative slope management techniques applied at Rampura Agucha Mine, showcasing advancements and best practices in the mining industry. This book will be helpful to the mining fraternity.

Felicitation of Shri. Prabhat Kumar, Director General, DGMS

The Felicitation of Shri. Prabhat Kumar, Director General of the Directorate General of Mines Safety (DGMS), at the National Mining Conclave 2024 was a momentous occasion recognizing his exemplary leadership and contributions to the mining industry. The ceremony was attended by distinguished guests, industry leaders, policymakers, and

stakeholders who gathered to honor and acknowledge Shri. Prabhat Kumar's dedication and achievements in advancing safety standards and regulatory practices in mining operations.

Shri. Prabhat Kumar began his address by extending a warm welcome to the audience, industry leaders, policymakers, and stakeholders from the mining community. He appreciated the efforts made by the Mines Safety Association of Karnataka in organizing this National Mining Conclave-2024 with a large number of participants across the nation. He underscored the significance of the conclave in fostering dialogue, sharing knowledge, and addressing critical issues affecting the mining industry. Addressing the audience, Shri. Prabhat Kumar provided an overview of the current state of the mining sector, highlighting key challenges such as environmental sustainability, regulatory compliance, and community relations. He emphasized the need for collaborative efforts and innovative solutions to address these challenges effectively. Shri. Prabhat Kumar discussed the role of government policies and initiatives in supporting the mining sector's growth and sustainability. He highlighted recent reforms aimed at enhancing transparency, efficiency, and responsible mining practices.

Presidential Address by Shri. R Praveen Chandra

Shri. R Praveen Chandra commenced his address by extending a warm welcome to Shri Prabhat Kumar, Director General, esteemed guests, delegates, and participants gathered at the conclave. He underscored the significance of the event and shared his experiences, pain, and support from the industries in conducting the event successfully.

Providing an overview of the current state of the mining sector, Shri. R Praveen Chandra discussed its contributions to the economy, employment generation, and resource management. He highlighted the sector's strategic importance in supporting industrial growth and infrastructure development.

Emphasizing the role of innovation and technological advancements, Shri. R Praveen Chandra highlighted examples of transformative technologies in mining operations. He discussed the potential of automation, artificial intelligence, and data analytics to enhance efficiency, safety, and environmental stewardship.

Vote of Thanks by Shri. Dhananjaya G. Reddy

Shri. Dhananjaya G. Reddy, Vice President-II of the Mining Engineers' Association of India (MEAI) and Chief Operating Officer (COO) of ERM Group delivered a heartfelt vote of thanks after Inaugural Session of the National Mining Conclave 2024.

He expressed sincere gratitude to the Chief Guest, esteemed dignitaries, and speakers who graced the conclave with their presence and valuable insights. He highlighted their contributions in enriching the discussions and guiding the industry forward.

VALEDICTORY FUNCTION

Welcome address by Shri. R Praveen Chandra

Shri. R Praveen Chandra began his welcome address by extending a warm greeting to all participants, dignitaries, and guests in attendance. He underscored the significance of the conclave as a platform for fostering dialogue, sharing knowledge, and addressing pertinent issues in the mining industry.

Shri. Jayavibhava Swamy, esteemed Guest of Honour at the National Mining Conclave 2024, delivered a notable address highlighting key perspectives and insights pertinent to the mining industry. His presence added significance to the event, providing valuable contributions and perspectives to the gathered audience. Shared his reflections on the

current state of the mining industry, emphasizing its pivotal role in resource extraction, infrastructure development, and employment generation. He highlighted the sector's contributions to national and regional economies. Discussed issues such as regulatory frameworks, environmental sustainability, technological advancements, and community engagement. He underscored the opportunities for innovation and growth within these challenges.

Address by Guests of Honour by Shri. Jayavibhava Swamy

Address by Chief Guest Shri. Deo Kumar

The National Mining Conclave 2024 was graced by the presence of Shri. Deo Kumar, who delivered the keynote address as the Chief Guest. This report details the key points and significance of the Chief Guest's address, highlighting their insights and contributions to the event. Addressing the challenges confronting the mining industry, the Chief Guest discussed regulatory complexities, environmental concerns, technological advancements, and community relations. They emphasized the need for innovative solutions and sustainable practices.

After the National Mining Conclave 2024, the Vote of Thanks was delivered by the Secretary of the Mining Safety Association of Karnataka (MSAK). The Secretary of MSAK expressed gratitude to all participants, including dignitaries, delegates, speakers, sponsors, exhibitors, and volunteers, for their invaluable contributions and active participation in making the conclave a success.

Special recognition was given to the organizing committee members, event coordinators, and support staff who worked tirelessly behind the scenes to ensure smooth execution of the conclave. Their dedication and hard work were acknowledged as instrumental in the event's success.

The Secretary thanked the keynote speakers, session chairs, and presenters for sharing their expertise, insights, and research findings on various aspects of the mining industry. Their contributions enriched the conclave and facilitated meaningful discussion

The Secretary extended heartfelt thanks to the sponsors and supporters whose financial assistance and logistical support were essential in organizing and hosting the conference. Their partnership and commitment were crucial in creating a platform for industry exchange and networking.

BELLARY-HOSPET CHAPTER

New Site Purchase and Registration

The successful registration of the newly purchased site for the BH Chapter has been completed on 16.07.2024. The site is located at Sankalapur Village Road, Ward No.22, Hosapete Taluk, Vijayanagara District and the property has been officially acquired and registered under the presence of Shir. K Madhusudhana, Shri. K Prabhakar Reddy, and Shri. G Laxminarayana, Shri. Gopal Joshi and office bearers of BH Chapter. The registration process involved verifying the property title, ensuring it is clear and free of encumbrance, and completing all necessary legal documentation.

This acquisition signifies a significant advancement for the Chapter, providing a dedicated space for meetings, events, and community activities. Our next steps include developing detailed plans for site utilization,

The Chapter is committed to maximizing the potential of this site to benefit our Chapter and enhance our operational capabilities. Your continued support and guidance are invaluable as we move forward with this exciting venture.

Site Location & Details

- Location: Sankalapur Village Road, Ward No.22, Hosapete.
- Site No: Sy. No.118/3A
- Size: 2119 Sq Ft
- Cost: Rs.13,90,000

Development Plans: We are now working on outlining the site's development plans, considering our chapter's needs and preferences. The acquisition of this new site marks a significant achievement for our MEAI BH Chapter. It provides us with a dedicated space to conduct our meetings, events, and activities, fostering greater collaboration and growth within our community.

Handing over of cheque to site owner

RAJASTHAN CHAPTER-UDAIPUR

Technical Talk: Challenges and New Policy in the Mining Sector of Rajasthan

A workshop was organized on May 17, 2024, by the Mining Sub-Committee of the Udaipur Chamber of Commerce and Industry (UCCI) in association with MEAI and CTAE Udaipur to discuss the challenges and new policies in the mining sector. The Keynote speaker was Mr Deepak Tanwar, Additional Director, Department of Mines and Geology (DMG). The event took place in the Chamber of Commerce auditorium and featured a range of distinguished guests and experts from the mining industry.

Key Participants

- Mr. Deepak Tanwar, Additional Director, Department of Mines and Geology
- Dr. Anupam Bhatnagar, Head of Mining Department, CTAE College
- Mr. Madhu Sudan Paliwal, President of Udaipur Chapter
- Special hospitality by Mining Engineer Mr. Asif Ansari
- Chaired by Mr. Mangilal Lunawat, Chairman of the Mining Sub-Committee
- Dr. Hitanshu Kaushal, Committee Member, Coordinator Dr. Hitanshu Kaushal introduced the main topics of the meeting, which included:
- Latest challenges and changes in the mining industry.
- Consideration of the mining case in the Aravalli range and the recent Supreme Court decision.
- Transition from DEIAA to SEIAA and its current status.
- Process of facilitating mining and expediting approvals.
- Mining and environmental issues.
- Discussion on the issue of GST on royalty.
- Discussion on transit passes applicable to the mineral industry.
- Issues of mining lease extension.

Presentations and Insights

Mr. Deepak Tanwar delivered a detailed presentation addressing the concerns of the mining industry with a positive outlook.

- Discussed government efforts to facilitate the mining business.
- Provided updates on the Aravalli range issues, GST on royalty, and environmental clearances from SEIAA.
- Announced that thousands of applications for environmental clearance have been uploaded and approvals will be granted soon.
- Highlighted the formulation of a new policy for transit passes to benefit the mineral processing industry.
- Addressed environmental, social, and administrative issues related to mining.

Mr. Mangilal Lunawat described the problems and challenges faced by the mining industry. Emphasized the role of the government in turning these challenges into opportunities.

Shri Anshu Kothari presented the report on UCCI's activities. Stressed the strong presence of the mining industry in the sector's development and the importance of the Chamber of Commerce and Industry.

Dr. Anupam Bhatnagar suggested ways for industry and the environment to progress sustainably. Highlighted the

importance of proper mining technical experts. Shared his experience as a committee expert in mining and environmental matters, advocating for positive and factual representation of the mining industry.

Mr. Madhu Sudan Paliwal and Asif M. Ansari **p**resented activities of Rajasthan Chapter-Udaipur. MEAI always played a significant role in amendment of rules in RMMCR 2017 for the requirement of EC on overburden/ M-Sand to support the mining industry. This effort is very important for the mining industry to promote Zero waste mining and help in environment friendly conditions of the mines Expressed strong positive sentiments towards working with the industry for development. Mr Asif M. Ansari assured availability 24 hours to address potential challenges.

The meeting concluded with a vote of thanks by Mr. Dilip Talesara, Vice President of UCCI. This systematic approach to discussing challenges and new policies in Rajasthan's mining sector highlighted the collaborative efforts between industry experts, government officials, and the Udaipur Chamber of Commerce and Industry to address and overcome the current challenges.

Technical Talk: "Courage under Pressure: Rescue Operations"

Date: 19th May 2024
Venue: Keys Select Lemon Tree Hotel, Udaipur
Organized by: Rajasthan Chapter- Udaipur

As Mining industry particularly underground mining is more prone to accidents so, it requires immediate and courageous rescue efforts. To address this critical aspect, the government enacted the Mines Rescue Act 1985, mandating that mine managements train their employees in rescue operations to save lives during emergencies. Recognizing the importance of preparedness and bravery in rescue operations, MEAI organized a technical talk on "Courage under Pressure: Rescue Operations."

The event was held at the Keys Select Lemon Tree Hotel, under the aegis of the Mining Engineers' Association of India, Rajasthan Chapter and Udaipur. The session was led by a team of experts from Hindustan Zinc Limited (HZL) who discussed the subject of the technical talk in detail through PPT, the team of experts included:

- Sh. Manish Meghwal, Manager (Mining), Kayad Mines
- Mr. Vedant Krishna Tiwari, Deputy Manager (Mining), Rescue Head
- Mr. Toms Joseph, Manager (Mining)

Highlights

Expert Presentations

The experts discussed the use of modern equipment and techniques for rescuing miners from various underground emergencies such as fires, rock falls, water inrushes, and more. They emphasized the importance of preparedness and shared detailed information on advanced rescue tools and procedures, including:

- Well-equipped ambulance vans used in rescue operations
- Refuge chambers and their role in providing safety
- Fire prevention methods for underground machinery
- Emergency preparedness protocols
- Advanced rescue training

Kolihan Mine Rescue Operation

The presentations included a detailed account of the recent rescue operation at Kolihan Copper Mines, where an accident on 16th May 2024 trapped several officers due to a cage (lift machine) chain breakage. The HZL team, under the directive of the Deputy Director General North West Zone, collaborated with KCC's rescue team. The team, comprising Sh. Manish Meghwal, Vedant Krishna Tiwari, Toms Joseph, Bhupendra Singh, Lavraj Jangir, Kamlesh Suthar, Pukhraj Yadav, Rajmal Lohar, Dharmaram, Jai Singh, and Akshar Dadure, displayed exceptional courage and patience, successfully rescuing all trapped individuals.

Honoring the Heroes

For their commendable performance, the MEAI Rajasthan Chapter honored the rescue team with appreciation letters, shawls, and traditional Uparanas.

Speeches and Addresses

Sh. Madhu Sudan Paliwal, Chairman, MEAI Udaipur, at the beginning, welcomed the dignitaries and members. He highlighted the critical nature of mine rescue operations, emphasizing the need for technical proficiency and immense bravery. Emergencies in underground mines can arise from a variety of situations. He thanked the above team for their patience in emergency times, quick decision-making, adopting rescue strategies, and facing the complexities of the accident.

Sh. Arun Kumar Kothari, former President of MEAI, narrated how the team of HZL, without caring for their lives, rescued the victims trapped in the lift and praised the HZL team for their selfless efforts in rescuing the trapped victims.

Sh. B Dayasagar, Director of Mine Safety, DGMS, underscored the emotional and mental challenges faced during such operations and the importance of sharing experiences for future preparedness. As we gather to recognize this commendable achievement, let us also reaffirm our commitment to safety and excellence in our profession.

Sh. Kishore Kumar, CEO, Agucha Mines, HZL, commended MEAI for the felicitation and noted the inspirational impact of the rescue operation. and pointed out that it is not easy to carry out rescue operations in emotionally charged situations. HZL. The unforgettable work done by the HZL team in collaboration with the KCC rescue team will prove to be inspiring for others

Sh. ML Lunawat, Director, Aravali Mineral and Chemical Limited, shared his views and stressed the importance of adopting best practices in rescue operations for minor mineral miners.

Participation and Conclusion

The event saw the participation of 70 MEAI members and received excellent feedback from both members and the industry. It was well-covered by the media, highlighting the importance and success of the event.

The program was moderated by Dr. Hitanshu Kaushal, Executive Member of the Chapter.

Concluded with a vote of thanks by Mr. Asif M Ansari, Secretary of the Chapter.

Report on "Vision Document@2047 for Mining Sector"

On Friday, June 14, 2024, a meeting was convened by the Rajasthan Mines & Geology Department (DMG) Rajasthan at Udyog Bhawan, Jaipur, to discuss and draft the Vision Document 2047 for the state's mining sector. The meeting was attended by senior officials of the Department, stakeholders, and representatives from various mining associations, including the Mining Engineers' Association of India (MEAI) Rajasthan-Udaipur chapter.

The primary objective of the meeting was to brainstorm and formulate strategies to enhance the mining sector in Rajasthan by the year 2047. Key goals include:

- Tripling the area of mining leases to more than 7,000 square kilometers.
- Providing direct and indirect employment to over one crore people.
- Increasing the annual revenue from mining to Rs 25,000 crores.

Key Discussions

Current Status and Potential

Mines Director Sh Bhagwati Prasad Kalal, IAS highlighted the current status of mining in Rajasthan:

- In Rajasthan there are 82 minerals and mining is going on in 57 minerals only
- Rajasthan holds a monopoly in many minerals and is planning to start gold and potash mining.
- The mining sector contributes 6 to 8 percent to the state's GDP.
- Direct employment is provided to 7-8 lakh people, and indirect employment to 25-28 lakh people.

Technological and Policy Advancements

Director Mines and Geology emphasized the need to adopt the latest technologies, including zero loss mining technology, and increase private participation in mineral exploration to reduce imports. Detailed exploration using modern technologies and faster pace of exploration were also discussed.

Participants and Contributions

The meeting was conducted by SME Sh Devendra Gaur, with notable contributions from Additional Director Sh BS Sodha & Sh MP Meena, SME Sh NS Shaktawat, Sh Pratap Meena, Sh KC Goyal, and OSD Sh Krishna Sharma.

Significant contributors/suggestions were given by Sh Akshay Deep Mathur, Chairmain of Federation of mining association, Jaipur, Sh MagiLal Lunawat, Sh Rajendra Harlalka (Entrepreneur) from Udaipur, Sh MS Paliwal, Chairman MEAI-Udaipur chapter, Sh Ashok Chhajed from Golchha Group, Sh Radhaballabh Maheshwari from Beawar, Sh Naveen Sharma of Bajri Transport Association, Sh Ayush Saxena of Fegmill, Sh Rajendra Kumar Bhardwaj from Karauli, Sh Panna Lal Kachhwah of Jodhpur, Rajesh Songara, Sh Asim Agarwal from RSMM, Sh Gopal Rathi from Hindustan Copper.

Suggestions from the Members

The Chapter proposed several suggestions for the Vision Document:

1. **Vision:** To transform Rajasthan into the most efficient mineral-extracting state, tripling (threefold) mineral production, boosting employment, and enhancing state prosperity. This will be achieved while ensuring high revenue generation and maintaining strict environmental and social standards.
2. **Mission:** Develop a legally sustainable and industry-friendly mineral policy. Promote economically sound and stable mining development.
    - **Exploration:** Conduct detailed exploration using modern technologies. Create a separate PSU for exploration or utilize RSMML. Use NMET and SMT funds for exploration to unlock mineral wealth. Make a proper mineral-wise inventory and make it publicly available.
    - **Increasing Mineral Mining:** Expand mining from the current 57 minerals to more of the 82 available minerals in the state. Create a special task force with incentive schemes and R&D setup.
    - **Overcoming Skill Manpower Scarcity:** Establish a new Mining University in Udaipur. Offer vocational employment-ready certificates (for Forman, Mining Mate, Blaster and Operators) and diploma courses with industry-sponsored internships.
    - **Processing and Value Addition:** Encourage mineral processing within the state to raise employment and boost the economy. Identify industrial areas with facilities for R&D and incentives for setting up industries. Promote techniques like beneficiation, calibration, blending, sizing, and concentration.
    - **Use of Waste:** Prefer and mandate the use of mining waste for filling work instead of fresh excavated muck.
    - **Concessions:** Grant leases based on demand and supply to conserve minerals for future generations.
    - **Identification of Mineral-Bearing Areas:** Identify, demarcate, and reserve mineral-rich areas for mining to avoid conflict and ease business.
    - **M-Sand Policy:** Revise the M-Sand policy to promote the lease for using overburden.

- **Availability of Bajri (River Sand):**- Reserve river sand mining for State PSU in river sand-rich districts. In other districts, conduct auctions similar to MP State's practice, transitioning eventually to State PSU.
- **Industrial Status:** Grant industry status to the mining sector to promote investment.

The Vision Document 2047 aims to significantly advance Rajasthan's mining sector, ensuring sustainable development, technological integration, and economic growth while maintaining environmental and social standards. The collaborative efforts and suggestions from various stakeholders are expected to contribute effectively to the vision's success.

Report on Workshop on Advanced Surveying Technology

On June 22, 2024, a workshop was organized by MEAI-Udaipur Chapter and MLS University Udaipur in Collaboration with Topcon Sokkia & Technosys Team at Hotel Regenta, Udaipur. In this workshop Members of MEAI-Udaipur Chapter, Representatives from MLS University, Professionals from Vedanta HZL and RSMML along with Local mining and geoscience professionals

The workshop on Advanced Surveying Technology showcased the latest innovations in surveying instruments, specifically focusing on the capabilities of Sokkia Robotic Total Stations and GNSS solutions. This event facilitated insightful interactions among mining professionals, geoscientists, surveyors, and technology enthusiasts, emphasizing the transformative potential of these technologies in geospatial applications.

Highlights of the Workshop

Introduction to Sokkia's Robotic Total Stations: The workshop began with an in-depth introduction to Sokkia's new robotic total stations, the iX-1200 and iX-600 models. Key features highlighted included:

- Long-range reflector-less measurements: Enhances productivity by enabling measurements without the need for physical reflectors.
- Hybrid Positioning™ technology: Combines GNSS and optical technologies to ensure precise positioning.
- Ultra Trac™ prism lock technology: Maintains lock on the prismevenin dynamic conditions, ensuring continuous and accurate data collection.

Live Demonstrations

1. **IX-1200 Total Station**
   - High-speedultrasonicmotorcontrol:Demonstrated the ability to quickly adjust and track prisms, essential for maintaining accuracy in dynamic environments.
   - Precise prism tracking: Show cased the instrument's capability to maintain accuracy over long distances and through various obstructions.

2. **IX-600 Total Station**
   - Compact design and robust performance: Highlighted the versatility of the iX-600 indiverse surveying and construction applications.
   - Field adaptability: Demonstrated its effectiveness in both large-scale and small-scale projects.

3. **GNSS Receivers: GCX2 Receiver** known for its compact design and high performance, the GCX2 was show cased formidability to deliver accurate positioning in challenging environments, such as areas with dense tree cover or urban settings with signal obstructions.

Technical Sessions

Experts from Sokkia conducted several technical sessions, offering detailed insights into the integration of robotic total stations with GNSS technology. Key topics covered included:

- Benefits of Hybrid Positioning™: Detailed explanation on how the combination ofGNSS and optical technologies can enhance accuracy and reliability in surveying operations.
- Data collection and analysis using Sokkia software: Demonstrations on how to effectively use Sokkia's proprietary software for efficient data collection, processing, and analysis, ensuring high-quality geospatial data.
- Future trends in geospatial technology: Discussion on emerging technologies and their potential impact on the field of geospatial surveying, including advancements in automation, AI integration, and enhanced data analytics.

NetworkingOpportunities

The event also provided unique networking opportunities, allowing participants to:

- Connect with industry peers and share experiences.
- Explore potential collaborations and partnerships.
- Engage in interactive Q&A sessions with experts, seeking advice on optimizing surveying operations and leveraging advanced technologies for various applications.
- Chapter Chairman, MS Paliwal suggested organizing such an event in our student chapter in collaboration with MEAI and knowledge of the latest technology of surveying which was accepted by them. Ms Seema Jaleria, professor, Earth science, MLU also express such view.
- Approximately 80 members attended the event.

The workshop successfully demonstrated the advanced capabilities of Sokkia's robotic total stations and GNSS solutions, emphasizing their potential to revolutionize geospatial technology. The technical sessions and live demonstrations provided valuable insights into the integration of these technologies, enhancing the knowledge and skills of all participants.

This report underscores the significance of continuing education and collaboration in the field of surveying, highlighting the role of advanced technology in driving efficiency and accuracy in geospatial data collection and analysis.

MEAI 4TH COUNCIL MEETING

MEAI 4TH NATIONAL COUNCIL MEETING HELD AT JABALPUR ON 19-07-2024

The 4th Council Meeting of MEAI was held on 19-07-2024 at 11.00 AM in Hotel Pasricha, Jabalpur. Jabalpur Chapter hosted the Council Meeting in Physical mode.

Shri. S.N. Mathur - President, Shri. D B. Sundara Ramam, Vice President – I, Shri. Dhananjaya G Reddy, Vice President – II, Shri. M. Narsaiah – Secretary General and Shri. B. Sahoo, Jt. Secretary cum Treasurer attended the meeting and conducted the meeting.

The Council members and others from the Jabalpur Chapter who attended the meeting physically are Shri. Deepak Vidyarthi, Dr. P.V. Rao, Dr. S S Rathore, Shri. V Lakshminarayana, Dr. S K Vashisth, Shri. Madhusudan Paliwal, Shri. Asif Mohmmed Ansari, Shri. A K Garg, Dr. T. N. Venugopal, Dr. C.H. Rao, Shri. P C. Bakliwal, Shri. Ravi Chandran Raj, Shri B. Surender Mohan, Shri. Pukhraj Nenival, Shri. Pratyendra Upadhyay, Shri. P.N Sharma, Shri. Anil Mathur, Shri. K. Venkataramana, Shri K. Prabhakara Reddy, Shri. Mallikarjuna S.H.M, Shri. P. Venkateswara Rao, Shri. L. Krishna, Shri. B. Venkateswarlu, Shri. B L Kotriwala, Shri. Sitaram Kemmannu, Ms. Gunjan Pande, Shri K. Sudhakar, Shri K. Sudhakar, Shri. Ram Prasad Chowdary, Shri. Prem Raj Dave and Shri. Rajesh S.

Welcome address by Shri. M. Narsaiah, Secretary General, MEAI

Homage made towards people who departed since the last Council meeting

Shri. S.N. Mathur, President addressing the Council members

Shri. B. Sahoo, Jt. Secretary cum Treasurer presenting the Audit report for the year 2023-2024

Shri. Sirish Shekar presented the HQ with a check for Rs. 28 lakhs from the surplus made in the International Conference organized by the Barajamda Chapter at Jamshedpur

Shri. Dhananjaya G Reddy, VP-II & Shri. K. Madhusudhana, IPP presenting the HQ with a check for Rs. 5 lakhs from the surplus made in National Conclave organised by Bangalore Chapter

L to R: Shri. B. Sahoo, Jt. Secretary cum Treasurer, Shri. M. Narsaiah, Secretary General, Shri. S.N. Mathur, President, Shri. D.B. Sundara Ramam, Vice President – I, Shri. Dhananjaya G Reddy, Vice President – II and Shri. K. Madhusudhana, Immediate Past President

Felicitation to Office Bearers Shri. Pukhraj Nenival, Chairman and Shri. Pratyendra Upadhyay, Secretary of Jabalpur Chapter for organizing the 4th Council meeting and 51st AGM at Jabalpur

MEAI 51ST ANNUAL GENERAL MEETING-HIGHLIGHTS

Held on 19-07-2024 2:30 PM at Jabalpur

MEAI - President, Shri. S.N. Mathur addresses the 51st Annual General Meeting

MEAI's Annual report was released on the occasion by Shri. S. N. Mathur, President. Also seen In the picture are Shri. D.B. Sundara Ramam, Shri. Dhananjaya G Reddy, Shri. K. Madhusudhana and Shri. M. Narsaiah

Shri. S N Mathur and other dignitaries released a report on Transparent Illusions written by Dr. C.H. Rao

Partial view of MEAI members who attended the 51st Annual General Meeting at Hotel Pasricha, Jabalpur on 19th July 2024

MEAI 51ST AWARDS CEREMONY GLIMPSES

Held on 19th July 2024 at Jabalpur

1. Lifetime Achievement Awards 2023

Shri. Deepak Vidyarthi, Former Executive Director, NMDC Ltd and Council Member, MEAI received Lifetime Achievement Award for the year 2023

Dr. S.S. Rathore, Retd. Professor and Dean, College of Technology and Engineering, Maharana Pratap University of Agriculture and Technology (MPUAT) Udaipur and Council Member, MEAI received Lifetime Achievement Award for the year 2023

2. MEAI - Awards Instituted by Organisations/ Individuals

MEAI - NMDC Award for the year 2023 was presented to Shri. Ram Shanker Sharma, Associate VP & Head -Operation, JSW Steel Ltd

MEAI – Abheraj Baldota Memorial Gold Medal Award (Mining Engineer of the year) 2023 was presented to Shri. Mallikarjun Sarapur, Executive Director I/c, Karnataka State Minerals Corporation Limited

MEAI - SRG Information Technology Award for the year 2023 was presented to Dr. Lingampally Sai Vinay, Mining Expert (Energy Cell), Ministry of Coal, Government of India

MEAI - Master Tanay Chadha Memorial Geologist Award for the year 2023 was presented to Dr. Sakthi Saravanan Chinnasamy, Associate Professor of Economic Geology, Department of Earth Sciences, Indian Institute of Technology, Powai, Mumbai

MEAI - SCCL Coal Award - Mining Engineer for the year 2023 was presented to Dr. Narayan Kumar Bhagat, Sr. Technical Officer (2) & Assistant Professor (AcSIR), Rock Excavation Engineering Division, CSIR-CIMFR

MEAI - Smt. Bala Tandon Award for the year 2023 was presented to Shri. Rajendra R Harlalka, Managing Director, Khetan Business Corporation Pvt. Ltd

MEAI - SIMMINDS Award for the year 2023 was presented to Shri. RC Purohit, Retd. Mines Head & Assistant Vice President (Mines), JK Cement Ltd.

MEAI – SERVICE EXCELLENCE AWARDS

Shri. D.B. Sundara Ramam receiving the Service Excellence Award for the year 2023

Shri. P.N. Sharma, Chairman, Nagpur Chapter receiving the Service Excellence Award for the year 2023

Shri. Pukhraj Nenival, Chairman, Jabalpur Chapter receiving the Service Excellence Award for the year 2023

Shri. Pratyendra Upadhyay, Secretary, Jabalpur Chapter receiving the Service Excellence Award for the year 2023

Ms. Gunjan Pande, Secretary, Ahmedabad Chapter receiving the Service Excellence Award for the year 2023

Shri. Ram Prasad Chowdary, Secretary, Jodhpur Chapter receiving the Service Excellence Award for the year 2023

Shri. Anil Mathur, Chairman, Jaipur Chapter receiving the Service Excellence Award for the year 2023

Shri. Madhu Sudhan Paliwal, Chairman, Udaipur Chapter receiving the Service Excellence Award for the year 2023

Shri. Asif Mohmmed Ansari, Secretary, Udaipur Chapter receiving the Service Excellence Award for the year 2023

Shri. Shirish Shekar, Secretary, Barajamda Chapter receiving the Service Excellence Award for the year 2023

Shri. B. Venkateswarlu, Chairman, Bailadila Chapter receiving the Service Excellence Award for the year 2023

Shri. L. Krishna, Secretary, Hyderabad Chapter receiving the Service Excellence Award for the year 2023

Shri. Sitaram Kemmannu, Secretary, Bangalore Chapter receiving the Service Excellence Award for the year 2023

Shri. SHM Mallikarjuna, Chairman, Bellary Hospet Chapter receiving the Service Excellence Award for the year 2023

Shri. P. Venkateswara Rao, Secretary, Bellary Hospet Chapter receiving the Service Excellence Award for the year 2023

Shri. K. Sudhakar, Secretary, Rayalaseema Chapter receiving the Service Excellence Award for the year 2023

Shri. Prakash, Chairman, Hutti Kalaburgi Chapter receiving the Service Excellence Award for the year 2023

Dr. C H Rao, Chairman, Visakhapatnam Chapter receiving the Service Excellence Award for the year 2023

Shri. Anil Kumar Garg, Council Member, MEAI receiving the Service Excellence Award for the year 2023

Shri. A R Vijay Singh, Council Member, MEAI receiving the Service Excellence Award for the year 2023

Shri. P C Purohit, Council Member, MEAI receiving the Service Excellence Award for the year 2023

Dr. T.N. Venugopal, Council Member, MEAI receiving the Service Excellence Award for the year 2023

Shri. Ajay Kumar Jain, Council Member, MEAI receiving the Service Excellence Award for the year 2023

Shri. Kuldeep Singh Solanki, Founder Member, NACRI receiving the Service Excellence Award for the year 2023

Shri. Suresh Chandra Jhagrawat, Member, MEAI receiving the Service Excellence Award for the year 2023

MEAI- CHAPTER AWARDS 2023

MEAI - Best Chapter Awardee 2023: Bellary-Hospet Chapter

MEAI - Best Chapter Awardee 2023: Udaipur Chapter

MEAI - Active Chapter Awardee 2023: Hyderabad Chapter

MEAI - Active Chapter Awardee 2023: Ahmedabad Chapter

MEAI - Active Chapter Awardee 2023: Bangalore Chapter

MEAI - SPECIAL AWARDS

Special Award for Celebrating Indian Mining Day 2023 presented to Ahmedabad Chapter and the Award received by Shri. Anil Kumar Garg, Council Member, and Ms. Gunjan Pande, Secretary, Ahmedabad Chapter

Special Award for Celebrating Indian Mining Day 2023 presented to Bangalore Chapter and the Award received by Shri. Dhananjaya G Reddy, Vice President – II and Shri. Sitaram Kemmanu, Secretary, Bangalore Chapter

Special Award for "STUDENT MEMBERSHIP DEVELOPMENT" 2023 presented to Jabalpur Student Chapter, AKS University Chapter and the Award received by Shri. Pukharaj Nenival, Chairman, Jabalpur Chapter, Shri. Pratyendra Upadhyay, Secretary, Jabalpur Chapter and Students of AKS University

Special Award 2023 for "Enrolling Maximum Student Membership" presented to Mr. Ashish Kumar Chaturvedi, Student Member, AKS University

Special Award for hosting Council Meeting 2023 presented to Ahmedabad Chapter and the Award was received by Shri. Anil Kumar Garg, Council Member, and Ms. Gunjan Pande, Secretary, Ahmedabad Chapter

Special Award for hosting Council Meeting 2023 presented to Hyderabad Chapter and the Award received by Dr. P V. Rao, Editor MEJ, Shri. B. Sahoo, Jt. Secretary cum Treasurer, Shri. V. Lakshminarayana, Council Member, Shri. B. Surender Mohan, Council Member, and Shri. L. Krishna, Secretary, Hyderabad Chapter

Special Award for hosting Council Meeting 2024 presented to Jodhpur Chapter and the Award received by Shri. P C Purohit, Council Member, and Shri. R P Chowdary, Secretary, Jodhpur Chapter

Special Award for hosting Council Meeting 2024 presented to Bailadila Chapter and the Award received by Shri. B. Venkateswarlu, Chairman, Bailadila Chapter

Special Award for hosting Council Meeting 2024 presented to Jabalpur Chapter and the Award received by Shri. Pukharaj Nenival, Chairman, Jabalpur Chapter, Shri. Pratyendra Upadhyay, Secretary, Jabalpur Chapter

Special Award for enrolling maximum life members 2023 presented to Shri. Madhu Sudhan Paliwal, Chairman, Udaipur Chapter and Shri. Asif Mohmmed Ansari, Secretary, Udaipur Chapter

MEAI-NATIONAL QUIZ 2023 AWARDS

First Position winners Shri. Guruprasad DM, Shri. Raghvendra S. Desai of Bellary Hospet and awards were received by Shri. SHM Mallikarjuna on behalf

Audience Round Award presented to Shri. Asif Mohammed Ansari of Udaipur Chapter

Audience Round Award Winner Shri. Nikhil Mathur of Jodhpur Chapter and the award were received by Shri. P C Purohit on his behalf

Audience Round Award Winners Shri. Ravindra Sutrave and Shri. Guruprasad DM of Bellary-Hospet Chapter and the awards were received by Shri. SHM Mallikarjuna and Shri. P. Venkateswara Rao on their behalf

Certificate of Appreciation / Quiz Master presented to Shri. Deepak Vidyarthi

(Continued from Page 21)

Sri Lanka's continental shelf claim also contradicts that of India's and that is why remains pending with the UN-CLCS since 2009. The two neighbouring nations have been negotiating to end the impasse bilaterally. They, however, could not make any headway in the past one-and-a-half decades.

The new dispute over the exploration of cobalt-rich crusts started brewing after the recent parliamentary elections in India saw the ruling Bharatiya Janata Party trying to rekindle the controversy over Katchatheevu Island and blaming the Congress ana blaming the Congress and the Dravida Munnethra Kazhagam (DMK) for 'ceding' it to Sri Lanka, sacrificing the interests of the fishermen of Tamil Nadu.

The Earth System Science Organization (ESSO), an autonomous institute of the Ministry of Earth Sciences of the Government of India, submitted an application to the secretary general of the ISA on January 18, 2024, seeking approval for a 15-year plan of work for the exploration of cobalt-rich ferromanganese at Afanasy Nikitin Seamount in the central Indian Ocean. New Delhi moved the ISA seeking rights to explore the cobalt-rich crusts in Afanasy Nikitin Seamount in the wake of the increasing forays of the Chinese People's Liberation Army's research vessels in the Indian Ocean region.

The ESSO deposited an application fee of $500,000 to the ISA – an autonomous international organization established under the 1982 United Nations Convention on the Law of the Sea (UNCLOS) to authorize and control the exploration of mineral deposits in the international seabed.

The Afanasy Nikitin Seamount is a 400-kilometre-long and 150-kilometre-wide undersea mountainous feature in the equatorial Indian Ocean. It comprises a main plateau rising 1200 metres above the surrounding ocean floor at a depth of 4800 metres, and secondary elevated seamount highs, two of which lie at 1600 metre and 2050 metre water depths.

The total area New Delhi wants to explore spans 3,000 sq. km and consists of 150 blocks, with none exceeding 20 sq. km in area. The blocks are organized and grouped into six clusters, each containing 12-50 blocks. The application area covering the six clusters is enveloped within an area measuring not more than 550 km by 550 km, according to an ISA document.

Anirban Bhaumik DHNS | 10 July 2024

CONFERENCES, SEMINARS, WORKSHOPS ETC.

ABROAD

5-6 Aug 2024: **International Conference on Civil, Environmental and Geological Engineering ICCEGE**. Amsterdam, Netherlands. Website URL: https://waset.org/civil-environmental-and-geological-engineering-conference-in-august-2024-in-amsterdam. Program URL: https://waset.org/conferences-in-august-2024-in-amsterdam/program. Contact URL: https://waset.org

11-15 Aug 2024: **International Mine Ventilation Congress 2024**. The heartbeat of mining, Sydney, Australia. For details contact conference@ausimm.com.

16-17 Aug 2024: **International Conference on Mine Mechanization and Mining Policies ICMMMP 2024**. Tokyo, Japan. Website URL: https://waset.org/mine-mechanization-and-mining-policies-conference-in-august-2024-in-tokyo

29-30 Aug 2024: **International Conference on Geology and Geophysics ICGG**. Sydney, Australia. Website URL: https://waset.org/geology-and-geophysics-conference-in-august-2024-in-sydney. Program URL: https://waset.org/conferences-in-august-2024-in-sydney/program. Contact URL: https://waset.org

29-31 Aug 2024: **International Conference on Graphene and 2D Materials**. Valencia, Spain. Website: https://www.pagesconferences.com/2024/graphene-materials

2-4 Sep 2024: **International Future Mining Conference 2024**. #FutureMining2024, Sydney, Australia. 24 PD Hours. Contact: AusIMM T: 1800 657 985 or +61 3 9658 6100 (if overseas). Po Box 660 Carlton, VIC 3053, Ground Floor, 204 Lygon St, Carlton VIC 3053.

04-06 Sep 2024: **International Fairs EXPO KATOWICE 2024**. plac Slawika i Antalla 1, 40-163, Katowice, Poland. Contact: enquiries@globalminingreview.com

13-15 Sep 2024: **International Conference on Mining, Materials, and Metallurgical Engineering**. Johannesburg, South Africa. Website URL: http://www.cmmme.org. Contact E-mail: contact@cmmme.org

7-8 Oct 2024: **International Conference on Design Methods in Underground Mining ICDMUM 2024**. New York, United States. Website URL: https://waset.org/design-methods-in-underground-mining-conference-in-october-2024-in-new-york

24-26 Sep 2024: **MINExpo INTERNATIONAL 2024**. Las Vegas Convention Center, 3150 Paradise Road, Las Vegas, Nevada, 89109, United States. Contact: enquiries@globalminingreview.com

21-23 Oct 2024: **Mill Operators Conference 2024. #MillOps2024**, Perth, Australia. 24 PD Hours. Contact: AusIMM T: 1800 657 985 or +61 3 9658 6100 (if overseas). Po Box 660 Carlton, VIC 3053, Ground Floor, 204 Lygon St, Carlton VIC 3053.

29-30 Oct 2024: **Mining, Metals, and the Circular Economy 2024**. ICC Sydney, 14 Darling Dr, Sydney, NSW, 2000, Australia. Contact: enquiries@globalminingreview.com

03-05 Nov 2024: **Resourcing Tomorrow 2024**. Business Design Centre, 52 Upper Street, Islington, London , N1 0QH, United Kingdom. Contact: enquiries@globalminingreview.com

7-8 Nov 2024: **International Conference on Geology and Geophysics ICGG**. Istanbul, Turkey. Website URL: https://waset.org/geology-and-geophysics-conference-in-november-2024-in-istanbul. Program URL: https://waset.org/conferences-in-november-2024-in-istanbul/program. Contact URL: https://waset.org

7-8 Nov 2024: **International Conference on Geological Engineering ICGE**. Tokyo, Japan. Website URL: https://waset.org/geological-engineering-conference-in-november-2024-in-tokyo. Program URL: https://waset.org/conferences-in-november-2024-in-tokyo/program. Contact URL: https://waset.org

21-23 Nov 2024: **International Professional Geology. Zaragoza**, Spain. Website URL: http://www.icog.es. Program URL: http://www.icog.es. Contact URL: http://www.icog.es

18-19 Feb 2025: **International Conference on Geology and Geophysics ICGG**. Manila, Philippines. Website URL: https://waset.org/geology-and-geophysics-conference-in-february-2025-in-manila. Program URL: https://waset.org/conferences-in-february-2025-in-manila/program. Contact URL: https://waset.org

23-26 Feb 2025: **MINEXCHANGE 2025 SME Annual Conference & Expo and CMA 127th National Western Mining Conference** co-located with World Gold 2025. Colorado Convention Center, 700 14th St., Denver, CO 80202. Contact: cs@smenet.org

09-12 Mar 2025: **EnviroTech Athens - 2025** - The Gateway to Green Cement. Greece. Contact: enquiries@globalminingreview.com

8-9 Apr 2025: **International Conference on Geological Engineering ICGE**. Rome, Italy. Website URL: https://waset.org/geological-engineering-conference-in-april-2025-in-rome. Program URL: https://waset.org/conferences-in-april-2025-in-rome/program. Contact URL: https://waset.org

21-22 May 2025: **AUSTMINE 2025**. Brisbane Convention and Exhibition Centre. Contact: Jason Berman, Event Director, jberman@etf.com.au, +61 2 9556 7991

10 - 13 Aug 2025: **Application of Computers & Operations Research in the Mining Industry**. #APCOM2025. PCOM Conference 2025, Perth Convention and Exhibition Centre, Perth, Western Australia. AusIMM T: 1800 657 985 or +61 3 9658 6100 (if overseas). Po Box 660 Carlton, VIC 3053, Ground Floor, 204 Lygon St, Carlton VIC 3053.

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