



Engineering Staff College of India



Mining Division

3-Day Residential Continuing Professional Development Programme on

“Trends in Blasting in Opencast Mines to Mitigate Undesirable Effects”

19 – 21 August 2024

Introduction.

Drilling and Blasting are two critical and vital operations which have a direct bearing on the downstream operations such as loading, hauling and crushing. Fragmentation of rock by blasting with explosives is still the most economical method facilitating excavations in mining and civil construction. Site specific selection of explosives, blast initiation systems, blast geometry and drill-hole pattern would ensure optimum fragmentation and reduction in the potential to cause accidents. Latest trends in blasting technologies, Automation and Digitization Solutions have the potential to improve productivity, workers' safety and address any social challenges. Thus, blasting technology is evolving continuously and is emerging as a full-fledged science.

Objectives

The objective of the programme is to update the knowledge of engineers, managers, engaged in mining dealing with drilling operations, explosives, blasting accessories and to expose them to latest technologies and practices in drilling and blasting operations. The engineering of drilling & blasting operations needs clearly defined objectives, materials, skilled techniques, necessary theoretical understanding of the rock properties, explosive-rock interaction and fragmentation mechanism. It is an important, complex, and safety-critical part of any project and should be carried out in such a manner that the desired degree of fragmentation commensurate to the loading or excavation machines deployed is achieved with reduced costs and unwanted side effects such as misfires, blasting fumes, fly rocks, noise, air & ground vibration, air- blast, oversized boulders, side-tear, back-break or formation of toe.

Course Coverage

- Basics of rock geology related to drilling and blasting applications
- Fundamentals and vital aspects of drilling & blasting and optimization of rock blasting
- Process of fragmentation - various techniques, design, methods and applications including environmental aspects.
- Advancement in blasting including electronic detonators
- Control blasting techniques integrating social, environmental, health, safety, security challenges to provide better solutions
- Software for design, analysis and assessment of blasting performance
- Application of IoT, Unmanned Aerial Vehicle & Drones in blasting best practices

Benefits to Participants

- Evaluation and optimization of blast performance and production improvement.
- Efficient blast design depending on various site conditions and specifications.
- Avoiding dangerous practices & promoting safe blasting procedures.
- Management of fly –rocks, vibration levels and other hazards associated with blasting operations

- Regulations, Rules and other statutory restrictions.
- Environmental effects and techniques of measuring and alleviation of the undesirable side effects
- Update on the latest state of technology and software in explosives and blasting.

Methodology

Lectures / presentations, Interactive sessions, Case studies.

Resource Persons

The resource persons consist of experts from the Industry, Research establishments and Academia besides in-house faculty from ESCI.

Target Participants

This programme would be useful to engineers, executives, managers, blasting personnel, contractors etc. in the field of mining engineering, civil engineering, drilling & blasting, geology, geo-physics

Programme Dates & Timings

Date : 19 – 21 August 2024
 Timing : 10.00 am to 5.30 pm each day

Course Fee

- Residential : INR 24,000/- (Rupees Twenty four thousand only) per participant which includes course material, course kit, twin-sharing/single AC accommodation, breakfast, lunch, dinner, tea and snacks during the actual days of training programme.
- Non-Residential : INR 21,000/- (Rupees Twenty one thousand only) per participant which includes course material, course kit, lunch, tea and snacks during the actual days of training programme.
- Online : INR 15,000/- (Rupees Fifteen thousand only) per participant and includes online support and softcopy of course- material
- Special concession of 10% in course fees to organization for 5 or more nominations and attendance.
- ESCI provides complimentary boarding & lodging for the participants a day prior to the commencement of training programme and a day after the conclusion of the programme (check in & check out at 12:00 noon respectively).
- Overstay charges will be charged extra as per ESCI norms.
- Spouses may be allowed to stay along with the delegates with prior intimation and on additional payment of nominal charges of INR 1000/day.

Goods and Service Tax @ 18% is to be paid extra over and above the programme fee. PAN Card No AAATT3439Q; GST No. 36AAATT3439Q1ZV. H.S. No. 999293 (Under commercial training or coaching services – clause 65(105) (ZCC) of Finance act – 1994).

Programme fee is to be paid in favour of “THE IE(I) – ENGINEERING STAFF COLLEGE OF INDIA” in the form of Cheque / Demand Draft (DD) payable at Hyderabad. Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - SB A/c No. 33705165550 with State Bank of India, Manikonda Branch, Door No.2-30/1, Indira Nagar, Gachibowli, Hyderabad – 500032, our NEFT/RTGS/IFSC Code No. SBIN0011076 – MICR No. 500002107.

While using EFT method of payment, please ensure to communicate your company name, our Invoice reference and programme title.

Registration

To register, please send your nominations by providing name, designation, contact address, email address, mobile no, telephone and fax number of the participant along with the details of

mode of payment of fee, addressed to: mining@escihyd.org.

Certification

A Certificate of participation will be awarded to each participant on conclusion of the programme.

Profile of Resource Persons



Mr. P Ranganatheswar graduated in Mining Engineering from Osmania University in the year 1979. Immediately thereafter, joined The Singareni Collieries Company Ltd (SCCL) as a Graduate Trainee and risen up to the Mine Manager gaining experience in the coal winning operations from conventional, semi mechanized to fully mechanized working faces including highly productive long-wall faces. Joined Directorate General of Mines Safety as Dy. Director and retired as Dy. Director General spanning about 27 years' work experience in the Government sector. He worked as Secretary to the Board of Mining Examinations (Coal and Metal). He visited Germany, France, U.K., Australia, USA, South Africa and China on different collaborative projects to oversee and understand the best mining practices adopted in their countries. After retirement, he worked as Advisor (Mining) at Gayatri Projects Limited and worked as task based Advisor (Mining) for M/s Central Coal Fields Limited.



Dr. Karra Ram Chandar graduated in Mining Engineering from Kothagudem School of Mines- Kakatiya University, obtained M.Tech in Rock Mechanics from IIT-BHU, Ph.D in Rock Blasting from NITK-Surathkal and Post-Doctoral Fellowship from University of Illinois at Chicago- USA. He also holds MBA Degree in HR. He served as Head –Dept. of Mining Engineering in NITK. He is involved in 10 R&D projects and 100 Industry sponsored consultancy projects, published 100 research papers in National/International Journals/Conferences. He has produced many Ph.D and 6 more scholars are under his guidance at present. His major areas of research are Rock Blasting and Slope Stability. He visited many universities/countries for research interaction, presentation of research paper viz. South Dakota School of Mines- USA, Southern Illinois University- USA, Arizona State University- USA, University of Illinois at Chicago- USA, Monash University- Australia, Kagoshima University- Japan, Institute of Petroleum- Abu Dhabi, Monash University – Malaysia. University of Hong Kong.



Dr. P Balamadeswaran graduated in Mining Engineering from the College of Engineering Guindy, Anna University, Chennai. He holds M. Tech in Opencast Mining and Ph.D. in Mining Engineering with special reference to 'Investigation of Blast Design Parameters on Rock Fragmentation and Ground Vibrations in Opencast Mines' obtained from the Indian Institute of Technology (ISM), Dhanbad. He is also a holder of First-Class Manager's Certificate of Competency (Metal-Restricted) and a Recognized Qualified Person (RQP). He worked in Hindustan Copper Limited, Malanjkhand, Madhya Pradesh for seven years and as Area Sales Manager in Tamil Nadu Industrial Explosives Limited. After a short stint in a MNC located in Indonesia, he joined M/s. Dempo & Co (P) Limited, Goa. Since 2007, he is associated with the Department of Mining Engineering, Anna University, Chennai and presently working as Assistant Professor. His areas of specializations are Rock Blasting Engineering, Slope stability in Surface Mines, Surface Mine Planning & Design. He has presented and published more than 90 Technical & Research papers in the Journals, National and International Seminars. He received the prestigious 'Distinguished Mining Engineer' award for the year of 2018 from the 'Institution of Engineers (India)'. He is presently the National Council Member of Mining Engineer's Association of India (MEAI) and also served as a 'Co-opted Member' in the State Expert Appraisal Committee' in Tamil Nadu for the period of 2016-2018.



Dr D Venkat Reddy, Doctor of Philosophy [Ph.D.]-Geology, Osmania University, Hyderabad, Telangana State, India in 1985. Retired as Head of Department of Civil Engineering, National Institute of Technology Karnataka. Consulting Faculty, Larsen & Toubro (L&T) Construction-Heavy Civil Infrastructure, Chennai, Tamil Nadu.

Present Position: Adjunct Professor, Dept of Civil Engineering – Dr. Babasaheb Ambedkar Technological University, a unitary, state university in Lonere in Raigad District, Maharashtra and visiting faculty, Reva University, Bengaluru.



Mr. G Gopinath is a Mining Engineer and he is pursuing his Ph.D. from Indian School of Mines, Dhanbad, India. He is well versed with opencast and underground blasting operations and has acquired expertise in the area of controlled blasting. He is having about 24 years field experience in opencast and construction industries. Currently he is working as Senior Scientist in National Institute of Rock Mechanics, India. As a professional he visited Australia, Bhutan, Sweden and Finland on various assignments.



Dr N Sri Chandras did B.Tech from GIET and M.Tech and PhD from IIT (ISM) and obtained II Class Manager's Certificate of Competency (Unrestricted). He has 8 years of teaching experience and 3 research publications to his credit and his research interests are Drilling and Blasting, Mine Environmental Engineering including software applications. He conducted blasting studies deploying drones. He worked as Assistant Professor in Mining Engineering Department, Malla Reddy Engineering College, Hyderabad. Presently employed as Deputy Manager, Mine Planning Division, GTS Ltd. (CK Birla Group)



Mr T. Srinivas, Dy. General Manager, Singareni Collieries Company Limited.

He has 38 years of experience in Mining and worked as blasting in-charge in a large opencast coal mining project with lot of challenges like underground workings, mine fires and surrounded by villages.

Govt. of Telangana utilized services in Cheemakurthi recovery operations in Galaxy Granite Blasting. He is a rescue trained person and participated in two International Mines Rescue Competitions held in China, and secured second international prize in First Aid and first international prize in trauma management.

Presently he is working as Dy. General Manager in a large opencast project in The Singareni Collieries Company Limited.



Er K J Amarnath a Gold Medalist, in BE (Mining Engineering) from College of Engineering, Osmania University, Hyderabad. He retired as Chief General Manager from The Singareni Collieries Company Ltd. (A Government Company) after rendering a meritorious service of about 38 years in various capacities in Underground and Opencast Technology in Planning & Operations, Human Resource Development, Business Development, Education, Safety, Corporate Planning and Projects. Further, he was Director in NSGPVL, A Joint Venture Company of NTPC Ltd, A Central Government PSU and The Singareni Collieries Company Ltd, A Government Company.

He visited the United Kingdom, Spain, United States of America & Australia during his service, which enhanced his capabilities in terms of Technical, Managerial & Business Skills. He is also a holder of First Class Manager's Certificate of Competency.

He is a Fellow of Institution of Engineers (FIE) and Life Member of Institution of Engineers, MEAI (Mining Engineers' Association of India), vice-chairman MGMI (Mining, Geology, Metallurgical Association of India), Hyderabad Chapter and vice-president of Alumni of Mining Engineers' Association (Osmania University, Hyderabad).

Presently he is working as Senior Faculty-Head, Mining Division, Engineering Staff College of India, Hyderabad.

Contact

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Mining Division

Engineering Staff College of India

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ISO/IEC 17025:2017 Certified, AICTE & CEA Recognised Institution)

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