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Exploration drilling training provider launches safety forum

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Published: 22nd March 2013



Exploration drilling training provider Colin Rice Exploration & Training reports that it launched a Safety Forum last month to help prevent accidents and incidents from taking place in the exploration drilling industry.

As a collector and disseminator of information, the forum aims to create a community of assistance.

"South Africa neither collects nor disseminates safety, accident and incident information for the exploration drilling industry," Colin Rice Exploration & Training founder **Colin Rice** tells *Mining Weekly*.

The Safety Forum has thus been established to act as a repository of safety information and data.

In response to increasing pressure over the last four years from nongovernmental organisations and government on mining companies to improve their mines' health and safety performance, Rice urges the exploration industry, which is a support service to the mining industry, to play a role in improving drill-site safety performance.

Drilling is a critical part of the mining industry, with exploration drilling usually taking place quite some distance from the mine and not, therefore, falling under traditional mining regulations.

"For a long time, exploration drilling escaped the scrutiny of the mining company, but, in recent years, these activities have been brought into focus," he says.

Training in the exploration industry is key in undertaking drilling operations that are safe, compliant and in line with the mining operation; however, Rice adds that exploration-drilling training is currently nonexistent, as there are no nationally certified exploration-drilling training courses available in South Africa.

Colin Rice Exploration & Training has been working for the past three years to develop a series of drilling training programmes with the Mining Qualifications Authority (MQA) with little success.

Rice adds that, while there is a need to have the training courses certified by the MQA or one of the sector education and training authorities, the industry cannot afford to wait for the formal certification processes to take place and so the company aims to entirely fill the training gap in the exploration-drilling industry this year, which would include driller and drill-supervisor training courses.

"The more momentum our courses gain, the easier it will be for MQA accreditation to follow," says Rice.

Drilling Courses

The drill-site supervisor, from a health and safety perspective, is the key person on site; therefore, the drill-site supervisor course will focus on improving the attitude, knowledge and skills in a range of fields specific to the exploration-drilling projects in which supervisors and site managers are involved.

The course will cover geology, drilling methods, drilling engineering, plant fundamentals, drilling economics, drill-site safety and hazard identification, as well as diamond drilling.

It will comprise eight modules that will be delivered on a self-study basis with weekly contact sessions spread over ten weeks. Contact sessions will run from 8:00 to 16:00, one day a week, in major mining areas such as Rustenburg and Witbank for the duration of the course, with the last day allocated for the assessment of attendees.

The courses were developed over 11 months and will be launched next month, says Rice.

The first supervisor programme will be presented at a venue in the Rustenburg area, while further programmes will be offered in other areas of the country later this year, based on demand.

Meanwhile, the driller course is aimed specifically at improving the skills, knowledge and attitudes of operational exploration staff to sharpen their ability to identify drill-site hazards.

The driller course will be presented on the same basis as the drill-site supervisor course, with the same ten-week structure. The modules comprise surface drilling equipment, ancillary surface-drilling equipment, tubular equipment, drilling fluids, drill-site safety and first aid and fire fighting.

Drill-Site Safety

"A need arose about three years ago for a specific exploration-drilling safety course to be launched, with specific focus on safety in the exploration-drilling industry," says Rice.

This prompted the launch of the company's drill-site safety course in June 2011. To date, the company has successfully hosted 11 of these courses, with an attendance figure of about 275 people.

Demand for the exploration drill-site safety course is high, which highlights the need for the four, or possibly five, additional courses planned for the year.

"One of the key issues in any drill-site safety exercise is the ability to identify hazards. This cannot be done if there is no understanding of the processes involved in drilling operations and the course is aimed at accomplishing exactly this," he explains.

The first day of the course is designed to provide the necessary understanding of the physical aspects of drilling, the drill-rig operation, the capacities of drilling equipment, the modes of failure and other important foundational information. The emphasis of the second day is on the application of the principles learned during the first day to identify drill-site hazards.

Further, the course is designed to teach how the principles learned could be applied to any drilling method, such as diamond-core drilling, rotary-percussion drilling, dual-tube reverse-circulation drilling, sonic drilling and even production drilling operations.

Meanwhile, Rice notes that the mining industry is currently experiencing a downturn. However, safety in mining remains of critical importance – hence, attendance for the courses remains good.

He adds that the courses are critical to South Africa's drilling future as the industry is facing increased job threats from imported labour. "It is our imperative to create jobs and upskill local employees. It is a priority to develop people instead of replacing them with automatic machinery."

Drilling-Techniques Course

The company, with the support of the Geological Society of South Africa (GSSA), has also been conducting a three-day drilling-techniques course aimed at geologists, engineers and people involved in exploration drilling.

The courses are presented three or four times a year, as required by the GSSA, and forms part of its continued professional development (CPD) programme in which attendees earn CPD points.

The course provides a practical overview of all aspects of exploration drilling for practising geologists and other professionals and includes topics such as drilling fundamentals, drilling methods, simultaneous casing systems, common drilling calculations, the use of drilling fluids, the fundamentals of borehole surveying and directional drilling, core orientation methods and the economic aspects of drilling, as well as common drilling problems.

"In South Africa, a young geologist is exposed primarily to theory training and in very few cases do graduates

get to see a fully operational drill rig. This course is aimed at highlighting some of the more practical aspects of geology," says Rice.

People from all over the world and most African countries, including Botswana, Zambia, Tanzania, Kenya and Uganda, have attended the courses.

Companies that have attended the course in the past include diversified miners Anglo American and Rio Tinto, mining major BHP Billiton, platinum mining company Impala Platinum, mining equipment and service provider Sandvik Mining, gold producer Harmony Gold, resources group Exxaro and JSE-listed Kumba Iron Ore.

Legislation

As a significant and proactive step to improve safety on drill sites, Colin Rice Exploration & Training would like to create a set of universal exploration drill-site safety regulations for the industry in South Africa.

Rice says that, while the South African exploration drilling industry is regulated by the Mine Health and Safety Act, drilling is not mentioned in the Act.

"The legislation that applies to the industry is not written to include drilling specifically, but is instead written to regulate mining as a whole. "What typically ensues is that exploration drilling activities are viewed as general mining activities and, very often, the wrong decision on how risks should be mitigated is taken," he explains.

Creating its own exploration-drilling safety standard is the real drive for the exploration drilling industry.

Colin Rice Exploration & Training works closely with Kumba and has drawn up a detailed drill-site safety standard for the mining company.

"Kumba is undoubtedly the leading mining company in the country in terms of its approach to improving health and safety on exploration projects," says Rice.

To create the standard, legislation that applies specifically to exploration drilling was extracted and converted into a drilling standard that relates specifically to the South African exploration industry.

It is expected that the document will be adopted by Kumba and will result in all the mine's exploration operations being evaluated according to this standard.

Rice hopes that this will encourage other mining companies to get on board in establishing a universal South African drill-site safety standard.

The company has also considered entering the African market, which has a significant training demand, as some countries also do not have a nationally recognised training programme.

To date, the company has conducted a trial course in Zambia and is in negotiations to conduct training in Mozambique and Tanzania, which would enable African countries to become involved in creating a safer exploration industry.

"We aim to eventually provide training for all of the African countries," says Rice.

In the long term, the company aims to establish South Africa as an exploration- drilling training hub for the rest of Africa.

"The drilling industry is advancing at a fairly rapid pace in terms of new technologies and new equipment. Through the creation of a drilling-technology centre in South Africa, local drilling technologies can be developed while upskilling the industry," enthuses Rice.