

Raising awareness on high-risk mining operations

IECEX and AFSEC international seminar in DRC

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The DRC (Democratic Republic of the Congo) is extremely rich in natural resources. In its soil lie huge amounts of metal and mineral ores such as diamonds, gold, copper, tantalum and the world's largest reserves of cobalt. While artisanal and small-scale mining still plays an important role in ore extraction, the country is increasingly developing its industrial mining sector.

Raise awareness

Whether small-scale or industrial, surface or underground, mining remains a high-risk activity. To raise awareness about the dangers associated with mining and promote safe practices in those hazardous areas, IECEX (IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres) and AFSEC (African Electrotechnical Standardization Commission) held a seminar in Lubumbashi, Katanga Province, DRC on 8-9 September 2014. AFSEC is a subsidiary of AFREC, the African Energy Commission.

The event was organized in collaboration with OCC (Office Congolais de Contrôle), and in partnership with the Katanga mining authorities and the governor of the Katanga Province.

Large attendance

Altogether, around 80 delegates, coming from DRC, Kenya, South Africa, and Zambia, participated in the event. Many of the DRC participants came from the mining sector.



A street in Lubumbashi (Photo: Laure Benjamin)

As in the first IECEX-AFSEC seminar in Abidjan, Côte d'Ivoire, in 2012, attendees had the option to follow the training, conducted by two IECEX experts, in either English or French. Paul Meanwell was in charge of the English-speaking group, and Michel Brénon led the French-speaking participants.

The Provincial Minister of Education, Scientific Research, Transport and Energy, representing the Governor of the Katanga Province, the OCC Provincial Director, and the IEC Affiliate Country Programme Executive Secretary officially opened the two-day event.

The first day was devoted to a five-hour course, with the same agenda for both groups. Site visits to different mines in the vicinity of Lubumbashi were scheduled for the second day of the seminar.

Learning how to identify and classify Ex environments

The courses began with an introduction about the IEC and IECEX. The instructors focused on area or zone classification in Ex (explosive) environments: how to identify and classify them. After explaining how to prevent explosions from occurring, they talked about the numerous factors that influence risk assessment and expanded into how Ex zones, their characteristics and the nomenclature used to describe them, are represented in IEC publications.

Inspection, maintenance and personnel qualifications in the IECEX context were also addressed, with emphasis on the need for both technical and managerial staff to have a proper understanding of Ex Standards and their implementation. Several types of electronic equipment used in Ex areas were also reviewed, with particular attention paid to the obligatory Ex marking.

CONFORMITY ASSESSMENT

Both Meanwell and Brénon concluded the first day with a short presentation of the upcoming site visits.

Observations at MMG Kinsevere...

A group of about 40 delegates led by Meanwell went to MMG (Minerals and Metals Group) Kinsevere, an open-pit mine and a plant located about 30 km from Lubumbashi. They were granted access to a fenced-off area of one of the three pits where only Ex-certified equipment was authorized. Participants were asked to check that the equipment in place was suitable for use in a classified area. Motors, Ex junction boxes and stop/start stations were also examined.

Meanwell praised the team for their observations and remarked that the visit was instructive for both seminar attendees and mining staff. A number of suggestions to further improve safety were noted.

...and at Ruashi Mine

With the second group, Brénon went to Ruashi Mine, a copper and cobalt mine, operational since 1911, with three open



The Kinsevere open-pit mine... (Photo: Adventures in Africa blog)

pits and a modern solvent extraction electro-winning processing plant. For safety reasons, access to the main hazardous areas of solvent extraction was restricted. This did not prevent the group from finding potential Ex risks in seemingly innocuous areas, such as

kerosene stocks and gas coming from the copper electrolysis process.

They all were able to discuss the visit and share their respective points of view regarding risk tolerance and classification of Ex areas. Brénon confirmed that area classification was an extremely complex subject usually performed by a team of experts from different fields pooling their expertise.

Importance of such events

All delegates expressed their satisfaction at the end of the two-day event. For many of the participants from the mining sector, the seminar was also an eye-opener. They realized that the entities they worked for had a pressing need for area classifications and general IECEx safety implementations.

The strong participation from the Katanga mining sector highlighted the importance and relevance of having such training and raising awareness about IEC International Standards and IECEx certification.



...and an aerial view of the Ruashi mine where on-site visits took place (Photo: Google Earth)