The Mining Department of ABB AB, in Västerås, Sweden, is the Center of Excellence for Underground Mining (CoE UGM) within ABB's Minerals Business Unit. CoE UGM has worldwide responsibility for mine hoist systems and has developed this course to enable you to run any ABB mine hoist system successfully, thereby covering all of your training requirements for these systems.

Training course objectives
The training course aims to provide target group-orientated training for both customers and ABB employees in running, maintaining and commissioning the variety of mine hoist systems provided by ABB as efficiently as possible.

Target groups
Electrical and mechanical engineers, operators, maintenance staff and commissioning engineers.

Total duration
The total duration of the training course for mine hoist systems is to be set according to the needs of the customer.

Training course structure
The complete training course for mine hoist systems is divided into four main blocks:

Block 1: Mine hoist control system
Block 2: Mine hoist drive system
Block 3: Mine hoist brake system
Block 4: Argus measurement and brake system

Training course form
This training course is based on both classroom and practical training. ABB has tailor-made the courses according to the needs and desires of the customer.

Location
The training course can either be held at the CoE UGM facilities in Västerås, Sweden, or at the ABB Mining Service facilities in Skellefteå, Sweden or at the customer’s location.

Block 1: Mine hoist control system

Objectives
After the course, the participants will have gained knowledge about:
- ABB's mine hoist control hardware and software
- HSI displays: supervision, warnings and tests
- AHM, advant hoist monitor hardware and function
- Controlling and changing parameters
- Operator interaction
- Hoist settings
- Troubleshooting
- Printing parameters

Contents
- Mine hoist control overview
- Control cubical
- Main control desk
- Cage level box
- Software structure
- HSI displays
- Overview
- Supervision
- Production
- Warnings
- Test
- HMI/Advant Hoist Monitor
- AHM 800 hardware
- AHM 800 panel
- AHM 800 functions and parameters
- Monitoring and settings
Block 2: Mine hoist drive system

Objectives
After the course, the participants will have gained knowledge about:
- Drive system hardware, terminology and functions
- Drive system power circuits
- Working principles
- I/O modules
- Chiller system (if delivered by ABB)
- Preventive maintenance
- Safety
- Troubleshooting
- Motor overview

Contents
- Mechanical parts
- Electronic parts
- Function hardware/software
- Preventive maintenance
- Safety
- Troubleshooting

Block 3: Mine hoist brake system

Objectives
After the course, the participants will have gained knowledge about:
- Mine hoist brake system hardware
- Hydraulic valve functions
- Air gap control
- Valve control
- Hydraulic flow at different stages
- Accumulator refilling
- Test box for valve adjustment
- Setting list hydraulic unit
- Mechanical maintenance procedures, including lubrication unit

Contents
- Overview of the hydraulic braking system
- Mechanical parts
- Electrical parts
- Supervision of braking system, 800xA control
- Hydraulic valve functions
- Air gap control
- Hydraulic flow chart
- Accumulator maintenance/refilling
- Hoist calculations for setting the correct pb-pressure
- Hydraulic unit settings
- Maintenance, changing valves/adjusting
- Troubleshooting
- Safety

Block 4: Argus measurement and brake system

Objectives
After the course, the participants will have gained knowledge about:
- Argus hardware
- Argus measurement
- Measurement set-up. Adding signals, scaling, sampling, etc.
- Configure triggers for measurement start
- Functions for and settings of brake card BCC-1
- Troubleshooting based on measurements

Contents
- Brake curves
- Customer plant circuit diagrams
- Argus viewer monitoring
- BCC-1 brake card function/adjusting
- Argus viewer, handling for monitoring

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