Fully trained and competent field service engineers are essential for support and life cycle services for our live tank circuit breakers (LTB).

This brochure presents our portfolio and processes for the various levels of training at our training center in Ludvika, Sweden.

Our live tank circuit breakers are renowned for their long service life. Even if our high voltage circuit breakers are durable and reliable, they are not perpetual motion machines. As with all apparatuses, circuit breakers require certain care and maintenance. The extent of service is a matter of how they are used, environmental conditions, etc.

The goal of ABB’s product support services is to improve reliability and extend the operating life of live tank circuit breakers, while reducing operation and maintenance costs for the customer in each life-cycle phase.

So what determines the needs for HV breaker service?
Condition and service life depend on a number of factors:
- Number of openings during short-circuiting
- Number of operations
- External environment
- Type of application
- How it is maintained
- And last but not least number of years in operation (Access to service and spare parts).

Our LTB training courses
To meet the challenges of the evolving high-voltage service market, we continue to develop our portfolio for training in our products.
These are described on the following pages in this brochure.
Customer training
Preventive maintenance and basic trouble shooting

Course objective
The objective of the course is to improve the ability of personnel from power utilities, power generation, transmission companies and industries, as well as the consultants who are responsible for the engineering, commissioning, operation and maintenance of substations, to use circuit breakers more efficiently.

Learning objectives
Upon completion of this course, participants will be able to:
• Understand design principles and critical elements
• Comprehend the critical elements of erection, commissioning, troubleshooting, operation and maintenance of HV circuit breakers
• Understand the do’s and don’ts for HV circuit breakers

Participant profile
Personnel from power utilities, power generation, transmission companies and industries, as well as consultants responsible for engineering, commissioning, operation and maintenance of substations.

Prerequisites
Basic knowledge of power systems.

Number of participants
A minimum of three and a maximum of six participants per course.

Instructor
A registered and certified instructor will lead the course.

Topics
• Construction standards
• Interrupting principles
• Breaker components: interrupters and operating mechanisms
• SF₆ properties, SF₆ gas filling and handling
• Operation, manufacturing and testing
• Control schematics
• Overview of erection, commissioning, maintenance and troubleshooting.
• Overview of condition monitoring of breakers
• Introduction to controlled switching (point of wave control)
• Introduction of product portfolio

Course type and methods
This is an instructor-led seminar with practical exercises and demonstrations both at a switchyard and manufacturing facilities. The course language is English or Swedish.

Course duration
The course duration is two days.

Document for training attendance will be issued.
Extended customer training
Installation and precommissioning

Course objective
The objective of the course is to improve the ability of PGHV field service technicians, engineers and approved internal and external channel partners for the installation and commissioning of circuit breakers.

Learning Objectives
Upon completion of this course, participants will be able to:
• Understand on-site health and safety aspects
• Install and precommission the circuit breakers
• Support the operation and maintenance of breakers

Participant Profile
PGHV field service technicians, engineers and approved internal and external channel partners.

Prerequisites
SF₆ certification (where applicable), diploma or engineering degree in electrical field and relevant safety training.

Number of participants
A minimum of three and a maximum of six participants per course.

Instructor
A registered and certified instructor will lead the course.

Topics
• On-site health and safety practices
• Construction applicable standards
• Interrupting principles
• Breaker components: interrupters and operating mechanisms
• Control schematics
• Review of instructional manual
• Visual examination of received goods
• Connection to third party equipment (electrical and/or mechanical)
• Inspection of electrical and/or mechanical function of equipment
• SF₆ properties, SF₆ gas filling and handling
• Installation, site testing and commissioning
• Introduction of checklist and documents
• Introduction to controlled switching (point on wave control)
• Practical training: pole installation, operating mechanism, SF₆ gas filling and testing
• Hand-over procedure to customer
• Introduction to operation and maintenance aspects of the product to customer employees
• Reporting procedures to product service centers

Course type and methods
This is an instructor-led seminar with practical exercises and demonstrations at a switchyard and/or manufacturing facilities.
The course language is English or Swedish.

Course duration
The course duration is three days.

Document for training attendance will be issued.
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