ICTD
المركز العالمي للتدريب والتطوير
International Centre For Training & Development

EE103

MV, HV & EHV

Switchgear Testing & Commissioning

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Course Introduction:

Tomorrow's leading companies will succeed not by battling competitors but by creating new uncontested market space. This course is designed to provide participants with the tools and techniques necessary to effectively formulate, implement and monitor a strategic growth plan. It will examine reasons for profitability restrictions that occur in industries, as they compete within their established marketplaces for market share.

Course Objectives:

By the end of this course the participant will be able to:

- Recognize the switchgear construction
- Learn more details on switchgear commissioning
- Know inspection, maintenance, and operation of switchgear

Who Should Attend?

Electrical engineers & electricians

Course Outline:

Day 1:

- MV , HV and EHV switchgear
- Switchgear construction
- Methods of symmetrical & asymmetrical fault calculations
- GIS apparatus and components
- Properties of SF6 gas
- Handling of SF6
- Breakdown mechanism of SF6
- Circuit breakers principles of operation
- Arc interruption
- Circuit breaker ratings

Day 2:

- Transient system models for switching transients
- Transient recovery voltages
- Rate of rise of re-striking voltages
- Breaking capacity
- Making capacity
- Capacitive switching and prospective voltages due to chopping of inductive current

- Current transformers and voltage transformers
- Troubleshooting of switchgear and remained actions

Day 3:

- Three phase short circuit switching
- Modern SF6 switchgear
- Maintenance of circuit breakers
- Inspection, servicing and overhaul
- Guidelines of switchgear maintenance
- Maintenance of quenching medium contacts
- Maintenance schedule check list of switchgear
- Maintenance of SF6 circuit breakers, vacuum circuit breakers and oil circuit breakers
- Important checks of sf6 switchgear during routine maintenance
- Testing of SF6 switchgear according to IEC standards
- Oil and air circuit breakers
- Maintenance of oil and air circuit breakers

Day 4:

- Modern vacuum switchgear
- Maintenance of vacuum circuit breakers
- Important checks of vacuum circuit breakers during maintenance
- Testing of switchgear according to IEC standards
- Commissioning tests of switchgear
- Earthing of switchgear

Day 5:

- Switching requirements for stable operation and for safety
- Electrical switching phenomena
- Comparison of different types for various switching duties
- Gas insulated switchgear
- Switchgear testing according to IEC standards
- Mechanical rated life of a switching device
- Contact travel characteristics of HV and MV and EHV circuit breakers
- Case Studies: Determination of circuit breaker ratings

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per the course location. This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session