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CIRCUIT BREAKERS AND SWITCHGEARS INSPECTION, MAINTENANCE, DESIGN, REPAIR AND TROUBLESHOOTING

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CIRCUIT BREAKERS AND SWITCHGEARS INSPECTION, MAINTENANCE, DESIGN, REPAIR AND TROUBLESHOOTING

INTRODUCTION

This program is designed to update participants with the latest development of Circuit Breakers and to present some of the more common and updated aspects of low, medium and high voltage switchgear maintenance. It must be understood that there is an incredible variety of equipment used on low, medium and high voltage switchgear today. Switchgears play an important role in the distribution and control of electrical power in manufacturing or power plant and in a utility distribution system. Negligent maintenance practices can lead to power system inefficiency and loss of system reliability..

OBJECTIVES

This course is designed to enable participants to:

- List the voltage convention classifications used in this course.
- Describe switchgear construction.
- Describe a ground fault relay system.
- Describe the three basic types of low and medium voltage circuit breaker contacts.
- Describe the molded case circuit breaker

TRAINING METHODOLOGY

The training methodology is interactive with group exercises and is suitable for all employees involved in functions management. The pace and level of the training workshop is customized to the understanding of the delegates. Ongoing back-up and support is available after the training on request to the supplier, and the training course is also available for in-house presentation as well as for “Competency Transfer”.

WHO SHOULD ATTEND?

This course is recommended for skilled trades, supervisors, Electrical Engineers and anyone involved in the Maintenance of industrial power circuit breakers.

COURSE OUTLINE

General Introduction

- Electrical engineering basic concepts
- Three phase review and per unit
- Voltage levels
- One line and three line diagram
- Generation system layout
- Transmission system layout
- Substation system layout
- Distribution system layout

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Industrial. Switchgears

- Fuses
- Auto-recloses
- Automatic sectionalizer
- Circuit Breakers
- Isolator switches
- Load switches
- Relays
- Current transformer
- Voltage transformers

CB Design Specification Based on Short Circuit Current Level

- Per unit system
- Faults on power systems
- Transient phenomena in power system.
- Symmetrical component analysis of three phase network
- Network connection for various fault types
- Current and voltage distribution in system due to a fault
- Effect of system on zero sequence quantities
- Computer programs based short circuit calculation.

CB Design Specification Based on Arc Phenomena and Circuit Interruption

- Arc phenomena
- Maintenance of the Arc
- Properties of Arc
- Arc Interruption theory
- Circuit Breaker Rating
- Circuit constants and circuit conditions
- Conditions of severity
- Restriking voltage transient
- Class A ultra fast transients
- Class B system transients
- Class C low transients
- Transmission line transient
- Switching transients
- Duties of Switchgear

LV Circuit Breakers

- Low voltage molded case current limiting circuit breakers
- Low voltage molded case circuit breakers with high breaking capacity
- Insulated case circuit breakers
- Low voltage air circuit breakers
- Low voltage circuit breakers specification

Modern MV and HV Vacuum CB

- Introduction
- Advantages of vacuum interruption
- Vacuum contactors and interrupters
- The vacuum medium
- The vacuum arc
- Vacuum arc stability
- Vacuum break down
- Vacuum switch construction
- Applications of vacuum circuit breakers

Modern MV and HV SF6 CB Introduction

- Basic Features of SF6 Breakers
- Dielectric properties of SF6
- Quenching properties of SF6
- Construction of SF6 breaker
- SF6 CB types
- Puffer type SF6 breakers
- Double Pressure System
- Single Pressure Puffer Piston System
- Single-Pressure Self Blast System
- Improvement in SF6 Breakers for HV

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REGISTRATION DETAILS

FAMILY NAME:

FIRST NAME:

POSITION:

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- ☐ PLEASE INVOICE ME
- ☐ PLEASE FIND ENCLOSED A CHEQUE PAYABLE TO AZTECH
- ☐ ONLINE / CREDIT CARD

CONNECT WITH US:

Hotel Accommodation

Hotel Accommodation is not included in the Registration Fee. A reduced corporate rate and a limited number of rooms are available for attendees wishing to stay at the hotel venue. Please make your request for accommodtion at least one week prior to the commencement of the course.

Event Disclaimer

We reserve the right to cancel or postpone a course or related event, change venue, substitution of the Instructor and alter the course content at our sole discretion. If this occurs, our responsibility is limited to a refund of any registration fee(s) already paid.
We are not responsible for airline tickets, hotels costs, other tickets or payments, or any similar fee penalties or related or unrelated losses, costs and/ or expenses registrant may incur or have incurred as a result of any trip cancellations or changes.

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You must notify the Registrar of cancellations at least one week before a scheduled course in order to be eligible for a credit. If you cannot attend, you may send a replacement from your organisation at no charge. There is a $250 handling charge for all cancellations or rescheduling. We reserve th right to cancel a course due to low enrollment.
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4 Ways to Register

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