



MAESTRO
CONSULTANTS

**TRANSFORMER
DIAGNOSTIC
METHODS, SELECTION,
MAINTENANCE,
TROUBLESHOOTING
AND LIFETIME
EXTENSION**

COURSE OUTLINE 2020

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TRAINING TITLE

TRANSFORMER DIAGNOSTIC METHODS, SELECTION, MAINTENANCE, TROUBLESHOOTING AND LIFETIME EXTENSION

VENUE

Dubai, UAE

DURATION

5 Days

DATES

09 - 13 August 2020

PRICE

US\$4,000 per attendee including training material/handouts, morning/afternoon coffee breaks and Lunch buffet daily.

TRAINING INTRODUCTION

The accurate diagnostic of the transformer is very important to establish the degree of the aging of transformers. Several experimental tests and theoretical analyses have been carried out to obtain parameters associated with the advances on understanding failure processes and troubleshooting.

The collect relevant data from the analysis can be interpreted and quantified so that a clear picture of the transformer condition is formed. However, this diagnostic data can help to:

- ▶ Avoid catastrophic failures e.g. fires following flash over.
- ▶ Extend the period of maximum load carrying capability for transformers.
- ▶ Select which units that need service and maintenance.
- ▶ Extend lifetime of the transformer.
- ▶ Avoid the high cost of transformer replacement.

The aim of this course is to enrich and update the knowledge and skills of the participants for achieving a correct diagnostic analysis, interpretation the laboratory analyses, learning new development analysis methods, understanding the effect of the thermal and electrical stress on the transformer, maintenance methods and troubleshooting process.

The course is interactive and consists of many practical examples and workshops from manufacturing and service industry, which have been designed and structured to enable the delegates to set up and manage continuous improvement projects in their organizations on completion of the course.

TRAINING OBJECTIVES

- Familiarize participants to the tools and techniques for achieving continuous improvement such as chemical/physical/electrical analysis, run chart, cause and effect diagrams, histograms, and flow charts.
- To provide skills, knowledge and understanding of principles and practices of the application of transformer diagnostic analysis.
- To solve the transformer problems.
- To achieve an advance maintenance methods.
- To provide ability to organize and implement continuous improvement projects in the organizations of the participants.

TRAINING AUDIENCE

Engineers, Technicians, Chemist who work in the transformer field i.e. Maintenance Section, Electrical Section, Laboratory, etc. In addition, the course is also available to Management Representatives (MR) and Departmental Managers and Supervisors to select the correct diagnostic analysis quotation.

COURSE OUTLINE

Transformer Fundamental

Transformer Review

Cooling System

Winding Design

Transformer Configuration

Core designs


Transformer Types

Preservation Sealing Systems

Bladder Failure (Gas Accumulator) Relay

Pressure Relief Device

Sudden Pressure Relay



Buchholz Relay

Tap Changer

Protective Relay

Switch Gear

Insulating Oil Composition

Insulating Paper Composition

Transformer Oil Types

Thermal Effects

Hot Spots Temperature

Static Electrification Phenomenon

Energy Losses

Mode of Heat Transfer

Oxidation and Degradation of Insulation System

Corrosive Sulfur Effect

Insulation System Aging Factors

Transformer Aging Measurement

On-site Electrical Tests

Dissolve Gas Analysis (DGA)

Gas Diagnostic Methods

Fault Gas Generation Rates

Chemical and Physical Diagnostic Analysis

Estimation Diagnostic Analysis

New development Methods of Diagnostic Analysis

Means and Need for Condition Monitoring

Transformer Lifetime Extension Methods

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course

METHODOLOGY

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of “real life” issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.