

Centre for Industrial Solution and Advanced Training

# **TRAINING PROGRAM ON HT/LT MOTOR & POWER TRANSFORMER: O&M, FAULTS, MAINTENANCE, PROTECTION & CONDITION MONITORING TECHNIQUES**

**6-7 Sept 2018, Nagpur**





(Technical- Electrical/Mechanical/Automation/Chemical, Behavioral & Soft Skill, Safety, Business Excellence, Safety & Energy Audit)

# Centre For Industrial Solution and Advanced Training

AN ISO 9001:2015 CERTIFIED

“A complete Training Solution Under One roof”

## 2 Day`s Training program on

# HT/LT Motor & Power Transformer

O&M, Faults & Maintenance, Protection & Condition Monitoring Techniques

6-7 September 2018, Nagpur

### Objective:

- To understand the various parts and critical elements of Electrical Motor.
- To understand the operation and application of Electrical Motor.
- To understand the maintenance, troubleshooting & Protection of Motor
- To understand do`s & don`ts of Drive; Rating & Failure analysis.

SR	Contents
<b>Basic Theory</b>	
1.1	Review of Electrical Motor
1.2	Construction of Motor: Various parts
1.3	Name Plate Rating; Symbol; Various Terms used in Motor
<b>Operations</b>	
2.1	Types of Motor: AC/DC
2.2	Characteristics of motors, Speed control and Applications
2.3	Installation, Testing & commissioning
2.4	Load sharing: Concepts and Practical case studies
<b>Maintenance</b>	
3.1	Various Fault Detection : Scheduled and unscheduled Maintenance
3.2	Maintenance, Data keeping,
3.3	Harmonics; Voltage Fluctuation control and Effects
<b>Faults &amp; Protection</b>	
4.1	Various Faults and Troubleshooting, Protection of Motor
4.2	MPCB, Relay setting for Motor
4.3	Protection of Motor: Over Load, Over current, S/C, Earthing failure, Differential Protection,
<b>Failure Analysis</b>	
5.1	Introduction to Failure Analysis: FMEA and other
5.2	Thermography; NDT; RLA, Conditioning Monitoring

**Methodology:** Presentation, Case Study, Model display, Site Visit and Practical.

Outcome of Program: One should be able to know about Operation, Maintenance and condition monitoring of Electrical Motor.



### Training program on “Operation, Maintenance & Protection of Power Transformer”

#### Objective:

- To understand the various parts and critical elements of Power Transformer.
- To understand the operation and application of Power Transformer.
- To understand the maintenance, troubleshooting & Protection of Transformer
- To understand do’s & don’ts of Power Transformer

SR	Contents
<b>Basic Theory</b>	
1.1	Transformer Theory: Operation & Construction
1.2	Function of all parts of Power Transformer: Tank, Bushing etc
1.3	Measuring Devices; Vector group
1.4	2/3 winding Transformer; Name Plate reading
<b>Operations</b>	
2.1	% Impedance; Efficiency; Losses; Regulation
2.2	Transformer Testing: Oil; Silica; Winding; Heating; Cooling etc.
2.3	Transformer Installation, commissioning
2.4	Parallel operation & Load sharing, Tap Changer
<b>Maintenance</b>	
3.1	Various Fault Detection & regular testing of Transformer
3.2	Maintenance, Data keeping,
3.3	IR, PI, Dielectric absorption, High Pot, Tan delta, DC winding resistance, s/c , TTR, Magnetic Balance Tests.
3.4	Harmonics; Voltage Fluctuation control and Effects
<b>Faults &amp; Protection</b>	
4.1	Scheduled and unscheduled Maintenance of Transformer.
4.2	Faults in Transformer
4.3	Protection of Transformer
4.4	Protection of Transformer: Over Load, Over current, S/C, Earthing failure, Differential Protection, REF, BR CB & relays.
<b>Failure Analysis</b>	
5.1	Failure Analysis: FMEA and other
5.2	Thermography; Conditioning Monitoring
5.3	NDT; RLA
5.4	Conditioning Monitoring

- Methodology:** Presentation, Case Study, Model display, Site Visit and Practical.

Outcome of Program: One should be able to know about Operation, Maintenance and condition monitoring of transformer.

Target Group: JE/SE/GET/Executive/AM

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## Registration Details:

### Registration Details

**Dates of the program:** 6-7 September 2018 @ Nagpur.

**Participation fees:** Rs. 20000/- Per participant (GST extra@18%, Includes Course material, Tea/snacks/Lunch, Excluding Lodging & Boarding)

**Payment:** ECS/NEFT/DD in favor of “Centre for Industrial Solution and Advanced Training” Payable at Nagpur, Maharashtra, India. Account No: 0509102000003353 Bank: IDBI, Wardha- 442001, MS, India. IFSC Code: IBKL0000509; MICR Code 442259001.

**Venue:** *KEC International Training Centre, Butibori, Nagpur, Maharashtra, India* (20 min from Nagpur Airport towards Wardha or Hyderabad. City buses are available from Nagpur)

**For Registration, please contact:**

1. Vikas 7709012815; [cisat.nagpur@gmail.com](mailto:cisat.nagpur@gmail.com), [vikas@cisat.co.in](mailto:vikas@cisat.co.in)

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Contact for any In-house Training at your plant. We do undertake all types of Training activities at all levels

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With Best Regards and Thanks,

**Vikas S. Wadnerkar** (Contact:+91-7709012815 )

**ME** (Electrical Engg), **BE** (Power Electronics), **PGDHRM**

**PE** (IE India- 700116-4), **IOSH** (UK) Certified, **OHSAS** 18001

**Head Technical Consultant and Expert Training**

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