

SGD 2400 for
2
Participants
or More

THE 4 PILLARS OF **TRANSFORMER CONDITION MONITORING**

04 – 06 DECEMBER 2017, KUALA LUMPUR, MALAYSIA



Testimonial from MAX'S other courses

“Great to have real hand on experience at off line real substation. Very experience instructor. Very warm reception and great foods” - SENIOR MANAGER, ABB MALAYSIA S/B

“This program is good for fresh engineers who involve in technical and investigation which is part of Suruhanjaya Tenaga Task” - HEAD OF UNIT, SURUHANJAYA TENAGA

“Good hands on experience” - ENGINEER, SABAH ELECTRICITY SDN BHD

Expert Course Faculty Leader



MAX PHILIPP

CIGRE member and chairman of the local A2 transformer working group

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Course Overview

This course covers the fundamentals of transformer condition monitoring and asset management procedures. It emphasizes on the technical background on which decisions are based. This course will give the participants valuable knowledge which will support their directives and decisions in their daily challenges, instead of an over reliance on technologies such on-line condition monitoring systems to interpret data.

Course Objectives

- Gain an overview on asset management procedures and techniques for transformers.
- Acquire an understanding of the 4 pillars of condition monitoring: DGA, Record keeping, Visual inspection and Routine off line tests (Bushing, OLTC).
- Interpret test results and understand interrelationship of various tests conducted.

Delivery Method

Instructor-Led with hands on training on Transformer components plus On-Load Tap Changer inspection.

Who Should Attend

This course is designed for middle to senior asset engineers, asset managers and engineers dealing with specification, operation, maintenance and protection of power transformers.

Your Expert Faculty

Max has over 28 years' experience in the field of Transformers, Substations and Management. In his previous engagement, Max worked for Maschinenfabrik Reinhausen GmbH of Germany.

In his career he led successfully 2 of their subsidiaries. The first one was Reinhausen Australia, and his last engagement was as Managing Director for Reinhausen Asia Pacific in Malaysia.

His customer base included Power Utilities, High & Medium Voltage Substations, Transformer Manufacturers and Industrial customers in the Asia Pacific region. Max left Reinhausen in 2010 and established MP Consult Sdn Bhd in Malaysia where he currently works as a Consultant and Trainer.

His technical expertise includes Voltage regulation, Commissioning of OLTC, Selection Criteria's for Power Transformers, Technical Understanding & Evaluation of Products and Fault Prevention & Damage Investigation.

Max is a CIGRE member and is the head of the local A2 transformer working group of CIGRE Malaysian National Committee.

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3 Day Course Outline

Transformers and Components

- History of Power Transformers (Why do we need transformers)
- Power Transformer Development
- Transformer Principles
- Transformer components: On-Load Tap Changer (OLTC), Bushings, Cooling

Asset Management essentials

- Asset Management: Why and How
 - Principles
- Asset Management strategies:
 - Risk / event based
 - Time / preventive
 - Condition based
 - “Maintenance free equipment”

The 4 Pillars of Condition Monitoring

1.) Physical observation

- Leaks
- Transformer components (Core steel, winding, insulation) (Hands on)
- Transformer cooling
- Cooling fans
- Paint
- Oil & Winding temperature (Hands on)
- Breathers

2.) DGA (Dissolved Gas Analysis)

- How does DGA work?
- Sampling techniques
- How to read the results
- What to do when the results are showing certain trends
- Trend analysis

3.) Periodic maintenance (Off line)

- On Load Tap Changers
- Bushings
- Buchholz Relays (Hands On)
- OLTC surge Relay (Hands On)
- Pressure Relief Device (Hands On)

4.) Historical data & record keeping

Day 3

Hands on experience

The training centre is equipped with 2 OLTC models for hands on training

During the third day, the participants will work hands on an actual OLTC. During the day we will dismantle, re-assemble and install the OLTC. After which, operational tests and alignment procedures will be performed to ensure that it is properly installed.

By the end of Day 3, Participants will:

- Understand the basics of transformer asset management.
- Understand transformer life cycle and maintenance planning
- Learn about DGA in transformer oil
- Learn how to maintain transformer components
- Understand transformer operation, aging and failure
- Understand on-line monitoring techniques
- Understand the various tests performed before during and after OLTC maintenance.

Emphasis is put on the hands on participation of the trainees.



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	PER PARTICIPANT	2 PARTICIPANTS OR MORE	IN-HOUSE TRAINING
3 Day Programme	SGD 3,000 Per Participant	SGD 2,400 Per Participant	Guaranteed Minimum 40% Off Normal Price

ATTENDEE DETAILS

Name Job title

Tel Department Email

Name Job title

Tel Department Email

Name Job title

Tel Department Email

Name Job title

Tel Department Email

Name Job title

Tel Department Email

COMPANY DETAILS

Organisation name Industry

Address

Postcode Country

Tel Fax

PAYMENT METHODS

By Cheque/ Bank Draft: Make Payable to PowerEdge Pte Ltd.

By Telegraphic Transfer: Please quote AE1 with the remittance advise

Account Name: PowerEdge Pte. Ltd.

Bank Code: 7339 Branch code: 686 Account Number: 686-253386-001 Swift Code: OCBCSGSG

Bank Address: 65 Chulia Street OCBC Centre, Singapore 049513

All bank charges and payment in Singapore dollars (SGD) to be borne by payer. Please ensure that PowerEdge Pte Ltd receive the full invoiced amount.

PAYMENT POLICY

Payment is due in full at the time of registration. Full payment is mandatory for event attendance. I agree to PowerEdge Pte Ltd. payment terms

* GST- Exclusive price is only applicable for overseas corporate customers subject to qualifying conditions.

CANCELLATIONS & SUBSTITUTIONS

You may substitute delegates at any time. POWEREDGE PTE LTD does not provide refunds for cancellations. For cancellations received in writing more than seven (7) days prior to the training course you will receive a 100% credit to be used at another POWEREDGE PTE LTD training course for up to one year from the date of issuance. For cancellations received seven (7) days or less prior to an event (including day 7), no credits will be issued. In the event that POWEREDGE PTE LTD cancels an event, delegate payments at the date of cancellation will be credited to a future POWEREDGE PTE LTD event. This credit will be available for up to one year from the date of issuance. In the event that POWEREDGE PTE LTD postpones an event, delegate payments at the postponement date will be credited towards the rescheduled date. If the delegate is unable to attend the rescheduled event, the delegate will receive a 100% credit

4 ways to Register

- 🌐 Online Web Registration
- ✉ info@poweredgeasia.com
- ☎ (65) 6741 9927
- ☎ (65) 67478737

OTHER TRAINING

- ✓ [EPC Contract Management for Power & Utilities](#)
- ✓ [Electrical Generators & Excitation Systems](#)
- ✓ [Ultra Supercritical Power Plants](#)

ON SITE TRAINING

Can't make it for the Course? We'll make the course come to you!!

Simply let us know your preferred time and dates and we will meet you at your schedule and venue.

With a host of highly trained experts, we will be happy to customize your programme with your needs 100% fulfilled.

Contact us today at

- ✉ info@poweredgeasia.com
- ☎ (65) 6741 9927

