

FUNDAMENTALS OF POWER GENERATION FOR NON TECHNICAL PROFESSIONALS

GAIN AN OVERVIEW OF THE ENTIRE POWER GENERATION TECHNOLOGIES, PROCESSES & ACTIVITIES
AROUND THE PLANT AND THE ENVIRONMENT TO ENHANCE TEAM EFFICIENCY AND PRODUCTIVITY

22 - 23 March 2012, Kuala Lumpur, Malaysia



Expert Course Faculty: **Brian Matkin**

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Course Overview

Whether in a technical, managerial or supporting role, professionals like yourself must grasp the terminology and technology of the power generation business in order to maximize the effectiveness of your role in this business. The Power Generation business has a unique language that must be conquered and understood by non-technical professionals. A clear understanding of Power Generation equipment, processes, and their complex interactions provide an excellent foundation for smooth communication and increased efficiency in inter-department project team efforts.

This 2 day course aims to de-mystify what power engineers do and experience in and around the power generation facility. This is your opportunity to explore and understand important Power Generation concepts, principles, and technology which are presented in a reader-friendly format and illustrated with examples. As a non-technical professional, you too can grow with the Power industry with a deeper understanding of the critical role you play in contributing to its success!

No technical knowledge is assumed, and the trainer will explain the basic concepts behind the plant items, in addition to their function. Presentation of the course will be through a combination of lectures, presentations and group activities.

Course Learning Outcome

Participants will learn the following aspects in power generation technology, processes and the environment:

- Examine the types of power generating plant
- Explore the energy conversion processes
- Understand the steam raising process and the components and operation of boilers
- Uncover the operation of large steam turbo-generators
- Appreciate the functions and operations of a Gas fired generation plant
- Identify the commercial and environmental impact of power generation

Who Should Attend

The course is intended for non-technical professional who work and service the Power Generation business who require an understanding of the modern Power plant. New engineering entrants and forward-looking executives in the following fields who are interested in enhancing their knowledge and awareness of this business for increased productivity & contribution to the team they are supporting can also attend.

Accounting – Administration - Business Development – Commercial - Estimation & Proposal - Finance and Administration - Finance – HSE - Joint Ventures - Legal – Logistics - Materials Planning – Planning & Budgeting- Procurement – Sourcing - Supply Chain - Tender/ Contract – Training

Previous participating companies include:

Energy Market Authority, Singapore, CLP Holdings Limited, Tuas Power Generation, JTC Corporation, Glow Company Limited, Emerson Electric Asia Ltd.-ROHQ, Travelers Asia, Sembcorp Industries, Manila Electric Company

Course Outline

Basic concepts

- Volts/ Amps/ Hertz
- Three Phase
- Megawatts (active power)
- Megavars (reactive power)
- Frequency control
- Voltage control

Primary Fuels for Generation

- Coal
- Gas
- Oil
- Nuclear
- Others: Wind, Hydro, Wave
- Economics
- Future Scenarios

Overview of steam theory/thermodynamics

Steam and Water systems

- CW and condensers
- Feed heating plant
- Water treatment
- Safety, incidents etc.

Boilers

- Coal/oil fired boiler design
- Boiler corrosion
- Boiler control systems
- Fuels, PF fuel handling, FGD
- Boiler protection, safety systems
- Good operating practices

Steam turbines

- Steam Turbines design
- Steam turbine control systems
- Good operating practices
- Safety, incidents etc.

Gas turbines

- CCGT and CHP plant
- GT operation
- Control systems
- Modes of operation
- Commercial and environmental

Electrical systems

Generators

- Design
- Voltages & Windings
- Cooling

Transmission Equipment

- Transformers
- Switchgear
- 'Pylons' (Towers)
- Insulators

Distribution Equipment

- Transformers
- Switchgear
- Over head Lines
- Underground Supplies

What other participants have said about this course in 2011:

"Suitable for people who want to know about Turbines"

"Thanks for an enjoyable training and I hope to retain most of what I learned here and share with my colleagues"

"Very good introductory course in power Generation"

Your Expert Faculty: Brian Matkin



Brian has considerable experience with coal fired plant up to 350MW and all Auxiliary Power Station Plant.

As a Shift Charge Engineer, besides being responsible for the safe and efficient operation of the Units he was responsible for training Unit Operators to become Technician Engineers. In this new role the staff became responsible for the Permit System, HV Switching & Emergency Procedures.

Brian's Industry career achievements

Eon/Powergen TXu Drakelow Power Station Drakelow Power station was a coal fired Power Station operating 2 x 350 MW Assisted Circulation Boiler/Units and 1 x 350 MW Supercritical Pressure Once through Boiler/Unit

- During unit outage joined Mechanical Maintenance where he was responsible for the Condenser/Feed Range repairs & Budget.

Eastern Electricity Drakelow Power Station

- Responsible for the introduction of computer based refresher training for PF Codes of Practice including liaison with outside agencies.
- In charge of Operations staff rotas and training of operators on the supercritical unit.
- Being responsible for the mill ball budget, saved costs by utilising high chrome second hand mill balls rather than new cast steel ones.

CEGB Drakelow Power Station

- Responsible for investigation into the total compressed air supply to the station and the replacement of the reciprocating compressors with up to date screw type compressors along with associated oil separating and drying equipment.

After the closure of Drakelow, Brian went on to become involved in providing Operations training at various locations including Operations simulator training on a 500MW unit simulator (Coal Fired). He was also part of a team to develop operations training for Flue Gas De-Sulphurisation Plant (Limestone/Gypsum Process). In addition he has carried out auditing of Safety Rules and associated documentation.

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REGISTRATION FORM

	Early Bird Ends 1 Dec 2011	Normal	Savings
2 Day Programme	SGD \$2,099	SGD \$2,299	SGD \$200

4 ways to Register

- Online: www.poweredgeasia.com
- Email: info@poweredgeasia.com
- Phone: (65) 6747 0775
- Fax: (65) 67478737

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- ✓ Introduction To Clean Coal Technology
- ✓ Introduction to Power Systems
- ✓ LNG Fundamentals
- ✓ Finance for Non Finance Professionals

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