

A 2-Day Professional Development Seminar on

Introduction *to* Power System Fundamentals

for non-engineers and
new employees



Who Should Attend



Non-technical and support professionals within and associated with the electricity supply industry, including those involved in (or are):

- Project Management
- Accounting and Finance Systems
- Legal systems
- Administration and Clerical Support
- Management and Human Resources
- Customer Care and Community Relations
- Directors, Officers and Senior Managers without previous electricity utility experience
- New Technical and Engineering Entrants to the Industry

Organised By :



Your True Partner in Attaining
Professional Excellence

Seminar Overview

A 2-day seminar on the fundamental principles and equipment involved in the modern day electricity power system. No, a busbar is not a place busses go to socialize on Friday night.

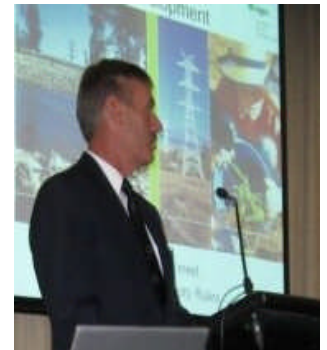
This is an introductory seminar designed to meet the needs of the many non-technical electricity industry employees in the support disciplines such as project management, accounting, financial support, legal systems, administration, clerical support, management, human resources, customer care, community relations and directors, officer and senior managers without previous electricity utility experience. It is important for these non-technical and support professionals to grasp the jargon, language and technology of the electricity power system in order for them to proactively understand the key business activities.

While it is necessary to cover some engineering concepts, with no more than some basic high school mathematics, this seminar is specially designed to cover those aspects in a way that will provide an overall appreciation of the "Big Picture" of the electricity power industry. Please note that, while this seminar is designed to focus specifically on the needs of the non-technical and support professionals within and associated with the electricity supply industry, it will also provide an invaluable insight for new technical and engineering entrants to the industry. Beginning with basic terms and concepts, this seminar will introduce participants to the power system components and design associated with electricity generation, transmission and distribution systems.

Seminar Facilitator

Barrie Moor, B.E (Elec), RPEQ

Barrie Moor is the Principal Engineer of Power System Protection Training, a provider of professional development training seminars on the topics of power system and power system protection. With over 39 years experience in the Queensland electricity transmission industry, Barrie Moor has been involved in the design, coordination and implementation of protection schemes associated with Queensland's HV and EHV transmission systems since 1981. Barrie also has extensive experience with the protection of large generating plants.



From 2000 to 2007, Barrie filled the role of Senior Engineer Protection Design, with statewide responsibility, leading Powerlink's Protection Design Team. From 2007 to 2012, in the role of Principal Consultant Substation Protection, and then Principal Engineer - Investigations, Barrie provided specialist Protection Design and Fault Analysis services to support the Asset Management and Operational Groups within Powerlink.

Barrie has 20 years experience within Australia and internationally in the provision of university post graduate electricity supply system training. He has presented a number of papers on power system design at conferences both within Australia and internationally. Barrie has also represented Powerlink on CIGRE committee APB5, Power System Protection and Automation and has served as a corresponding member of Cigre and IET working groups on Protection Systems.

Seminar Content

1. Electricity: Fundamental Principles and Concepts

- ◇ DC System
- ◇ Voltage, Current, Resistance and Power
- ◇ Electromagnetism
- ◇ AC Systems
- ◇ Single Phase Generation
- ◇ RMS Quantities
- ◇ Transformers
- ◇ Inductance and Capacitance
- ◇ Real and Reactive Power (Watts, Vars and Power Factor)
- ◇ 3 Phase Generation
- ◇ AC Motors

2. Power Generation

- ◇ Steam systems
- ◇ Gas turbine systems
- ◇ Hydro systems
- ◇ Wind and Solar Power

3. Transmission and Distribution Systems

- ◇ HV and EHV Overhead Systems
- ◇ Distribution Systems
- ◇ SWER Systems
- ◇ Cable Systems
- ◇ Series Compensation
- ◇ DC Systems
- ◇ Embedded Generation Systems

4. Substation Design : HV System Equipment

- ◇ Busbars
- ◇ Circuit Breakers
- ◇ Isolators and Disconnectors
- ◇ GIS and Hybrid GIS Technology
- ◇ Metal Clad / Enclosed Switchgear
- ◇ Earthing Systems
- ◇ Power Transformers
- ◇ Voltage Transformers
- ◇ Current Transformers
- ◇ Surge Divertors
- ◇ Reactors and Capacitors
- ◇ Static Var Compensators
- ◇ System Configurations, for Reliability and Economy
- ◇ Civil Design

5. Communication Systems

- ◇ Power Line Carrier (PLC)
- ◇ Fibre Optic
- ◇ Microwave
- ◇ Radio
- ◇ Pilot Wire

6. Protection Systems

- ◇ Security, Reliability and Dependability
- ◇ Duplicate, Local Back-up and Remote Back-up Schemes
- ◇ Regulatory Requirements
- ◇ Unit Protection Schemes – Differential Protection Schemes
- ◇ Non-Unit Protection Schemes – Fuses, Over Current and Distance Protection Schemes
- ◇ Protection Signalling
- ◇ CB Fail Concepts
- ◇ Auto Reclosing
- ◇ Wide Area and System Integrity Schemes
- ◇ Generator Protection Schemes

7. Control Systems

- ◇ SCADA Systems
- ◇ Event and Disturbance Recording
- ◇ Demand Management

8. IEC61850

- ◇ Station Bus Systems
- ◇ Process Bus Systems

CPD Recognition

This seminar program is especially designed to meet the Continuing Professional Development (CPD) needs of participants. A certificate of attendance will be awarded at the end of the program. This serves as evidence of your personal and professional commitment to your career.

Customised In-House Course Available

This program can be customised to suit specific needs of your organisation at significant savings.

For more details, please contact us on
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