

Capacity building programme for power industry of Cambodia, Laos, Vietnam and Thailand (CLVT) countries



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List of training courses on electrical power system for Cambodia, Laos, Vietnam and Thailand (CLVT) countries

(Responsible and coordinator : Dr. Tuan Nguyen, t.nguyen@ied-sa.fr)

1. TRAINING COURSE 1 – CUSTOMER SERVICE METERING AND BILLING
2. TRAINING COURSE 2 – HYDROPOWER PLANT ENGINEERING AND ENVIRONMENTAL IMPACT
3. TRAINING COURSE 3 – HYDROPOWER PLANT OPERATION AND MAINTENANCE AND PRODUCTION
4. TRAINING COURSE 4 – LOW VOLTAGE AND MEDIUM VOLTAGE OPERATION AND MAINTENANCE
5. TRAINING COURSE 5 – POWER WHEELING AND CENTRALIZED DISPATCH OF POWER SYSTEM
6. TRAINING COURSE 6 – POWER SYSTEM ENGINEERING, COMPUTERIZED TOOLS FOR ANALYSIS AND RELAY COORDINATION
7. TRAINING COURSE 7 – POWER SYSTEM PLANNING AND ENVIRONMENTAL CONCERNS
8. TRAINING COURSE 8 – SUBSTATION OPERATION & MAINTENANCE
9. TRAINING COURSE 9 – TRANSMISSION LINE OPERATION & MAINTENANCE TECHNIQUE

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Training course 1

CUSTOMER SERVICE METERING AND BILLING

Tariff designing and principle of calculating tariff

The objective of this training course is to learn the methods of designing tariff, principles of calculating tariff for specific customer category and learn how to manage the customer's information system.

The material of the part I and II, prepared by IED, can be a basic of 2 – 2.5 day-long intensive training course. It will be accompanied by presentations in MS PowerPoints. This textbook was compiled and adapted from different sources as a manual hand-out for Customer services personnel of EDC. Some practical exercises are included for each session.

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Chapter II – SOFTWARE TOOLS FOR ASSISTING WITH MANAGEMENT AND MAINTENANCE OF MINI ELECTRIC GRIDS AND PHOTOVOLTAIC KITS SYSTEMS

1. Issues
2. The development of Solutions: A Participative Approach
3. MRGestion – Mini grid management conception
4. PVGestion – Photovoltaic management conception

Annexe : Electricity Tariff Restructuring in Thailand, National Energy Policy Office of Thailand, 2001.

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Training course 2

HYDROPOWER PLANT ENGINEERING AND ENVIRONMENTAL IMPACT

This material is collected by Center of Excellence for Hydro Power Plant Project, Electricity Generating Authority of Thailand. The purpose of the material is to be a reference for Hydro Power Plant Engineering and Environment Impact Training Course on Capacity Building Programme for power industries in Cambodia, Laos, Vietnam, and Thailand (CLVT) countries under Initiative for ASEAN Integration (IAI) Project.

The material, for the optimum benefits and other usage, may need further revision. In the mean time, the collectors apologize for any mistake that may cause to you and also appreciate your advice.

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Training course 3

HYDROPOWER PLANT OPERATION AND MAINTENANCE AND PRODUCTION

With the experience in power industry of more than three decades, EGAT has developed a great deal of skills and knowledge in operation and maintenance (O&M). However, those skills and knowledge, which need to be collected systematically, are still scattered because of some reasons such as personnel retirement, position rotation, etc.

In order to solve this problem, EGAT by South East Asia Center for Training in Energy for Development (SEACTED) has developed Center of Excellence for Hydro Power Plant Project in collaboration from experienced hydro power plant staff. The skills and knowledge on hydro power plant O&M has been gathered, systemized, and transferred as "Basic Hydro Power Plant Training" material. The material explains the basic idea of how HPP develop. It is also used as a tool for increasing potential of hydro power plant O & M personnel, also the other people who are interested in this field.

The content in this book might not be perfectly composed. Therefore, we are very please to any of your suggestion that helps complete this material.

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Training course 4

LOW VOLTAGE AND MEDIUM VOLTAGE OPERATION AND MAINTENANCE

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Training course 5

POWER WHEELING AND CENTRALIZED DISPATCH OF POWER SYSTEM

The objective of this training course is to increase and improve participants know-how on the theories and (de)regulation implementation of existing electricity markets, learn the procedure of production control, identify constraints in power systems operation and learn the concepts of centralized dispatch and power wheeling. This text book was compiled and adapted from different sources as a manual hand-out for GMS Power system personnel of EDC, EDL, EVN and EGAT. Some practical exercises are included for each session.

The material can be a basic of a week-long intensive training course. It will be accompanied by presentations in MS PowerPoints and answers to practical exercises.



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3. Pricing theory and marginal costs in a power market
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Exercise “Power/Frequency phenomena in an Interconnected power system” using EUROSTAG with EGIDE, a training software for electrical engineers.

Exercise “Voltage stability” using EUROSTAG with EGIDE, a training software for electrical engineers.

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Training course 6

POWER SYSTEM ENGINEERING, COMPUTERIZED TOOLS FOR ANALYSIS AND RELAY COORDINATION

The objective of this training course is to increase and improve participants know-how on power system engineering technical criteria, power system simulation tools, system modelling, short circuit calculation, dynamic simulation, automatic contingency analysis, and project costs calculations.

This text book was compiled and adapted from different sources as a manual hand-out for GMS Power system personnel of EDC, EDL, EVN and EGAT. Some practical exercises are included for each session.

The material can be a basic of a week-long intensive training course. It will be accompanied by presentations in MS PowerPoints and answers to practical exercises.



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One-liner Exercises
Power Flow Exercises

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Training course 7

POWER SYSTEM PLANNING AND ENVIRONMENTAL CONCERNS

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Training course 8

SUBSTATION OPERATION & MAINTENANCE

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Training course 9

**TRANSMISSION LINE
OPERATION &
MAINTENANCE
TECHNIQUE**

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