



Insulation Coordination Studies with EMTP-RV

5th – 7th, December 2016

Orchard Hotel Singapore

Course objective:

The objective of this Insulation Coordination Studies with EMTP-RV software (a sophisticated computer program for the simulation of **electromagnetic, electromechanical and control systems transients** in multiphase electric power systems) is to give to participants a good knowledge of insulation coordination studies. Participants will learn the theory and principles of Insulation Coordination studies, modeling techniques and how to use EMTP-RV models. Moreover, they will learn how to manage a whole Insulation Coordination study based on the IEC 60071. The course is based on the usage of EMTP-RV for demonstrating concepts and teaching through practical problem cases.

Each participant will have to bring a personal computer. EMTP-RV temporary licenses will be provided for the duration of the course.

Instructors: Mr. Henry GRAS (EMTP-RV Canada)

Intended audience:

The course is of interest for newcomers and also for those who want to improve their skills in the fields of insulation coordination.

- Engineering professionals
- Research personnel in industry, utilities, universities and consulting companies involved in power systems studies
- Professionals from power transmission
- Distribution and production companies
- Post-graduated students

Hotel: Orchard Hotel <http://www.orchardhotel.com.sg> (Tentatively)

All travel and hotel arrangements are the responsibility of the attendee.

Date: 5th – 7th, December 2016

Time: 09:00 a.m. – 5.00 p.m.

Fee: US\$ 1,500.00* / per person

(This Fee does not apply to Indonesia participants, please see the note below)

- 1/. Fee does not include lodging, transportation and Singapore Government Tax.
- 2/. Courses are limited to 30 participants. So please register early!
- 3/. Payment in full must be received One (1) month prior to start date of course.

*Note: *For Indonesia participants, the fee is US\$1,875.00 / per person (Including 20% WHT)*

Information / Registration:

Cahaya Jaya Services

627A Aljunied Road
#04-01 BizTech Centre, Singapore 389842
Tel: (65) 64814106
Fax: (65) 64814609
Email: cahayaj6@singnet.com.sg
Website: www.cjaya.com

Course Outline:

- Overview of the EMTP-RV Capabilities (for Beginner participants)
- Origins of Overvoltage
 - o Events on networks
 - o Basic theory
- Insulation coordination studies step by step
- What is needed from EMTP:
 - o To design/choose towers/Insulators
 - o To design/choose surge arresters
 - o To design/choose breakers
 - o To determine the risk of failure of an equipment
- Temporary overvoltage:
 - o Load rejection
- Ferro-resonance:
 - o Transformer switching
 - o Line opening
- Transient Overvoltage:
 - o Capacitor bank switching:
 - Statistical switching
 - Back to back switching
 - Pre-insertion resistances
 - Surge arresters.
 - o Transient recovery voltage:
 - o Line trap charge and reclosing:
 - Ferranti effect
 - Bubbling effect
 - Coupling
 - Pre-insertion resistances
 - Surge arresters
 - Osha rule
 - Breaker failure
- Fast Transient
 - o Lightning
 - o Corona effect
 - o Surge arrester testing simulation

Course information is subject to change.

Requested technical background:

Participants should possess a background in three-phase electric power system fundamentals, application, and practice and should be comfortable with the Microsoft Windows PC environment.

Registration Form

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Please complete a registration form with payment to Cahaya Jaya Services to confirm registration. Reservations are taken on a first come, first serve basis. Submitting this form electronically does NOT confirm your reservation. Contact cahayaj6@singnet.com.sg if you have any questions.

Name _____

Position _____

Company _____

Address _____

Phone _____ Fax _____

E-mail _____

Payment:

Payment methods available:

- Credit Card (A 4% fee is applied for payment)
- Cheques should be crossed and made payable to 'Cahaya Jaya Services' (for Singapore attendee)
- via telegraphic transfer
- Cash

Remark:

1. A confirmation letter will be sent to you upon receipt of the enrolment form and payment 30 days prior to the course date.
2. Any cancellation must be in writing and received by 14 days prior to the course date. Otherwise the full fee will be chargeable.
3. Cahaya Jaya Services reserves the right to reschedule, change venue or cancel the course due to unforeseen circumstances.
4. Course fee does not include lodging, transportation and taxes.

Note: For group registration, please photocopy this form for submission.

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