

NEPLAN®

Smarter Tools

NEPLAN Training

The concept of *NEPLAN Training*

NEPLAN training courses offer an excellent opportunity to become familiar with NEPLAN, the power system software applied worldwide for network planning and operation. The participant gets to know the most important features of the program and he/she will be able to use it immediately in the daily business.

The courses include many practical exercises and case studies, which help the participant to engage their new knowledge in real-life problems. Individual attention is guaranteed during the course, due to the limited size of our training classes (max. 6 participants).

Training location

NEPLAN training courses take place about 100m away from the train station of Küsnacht ZH near Zurich, Switzerland:

NEPLAN AG
Oberwachtstr. 2
CH – 8700 Küsnacht
Switzerland

The train trip from Zurich main station to Erlenbach ZH (line S16 or S6) takes 15min.

General Information

You will receive a detailed agenda and a map of Küsnacht ZH about one week before the training starts. Training documents and lunch are included in the training fee.

For accommodation and more information please contact us by phone (+41 44 914 36 66) or by e-mail: bcp@neplan.ch

Enrolment/ Mode of payment

The costs for each course are CHF 900.0. Please use the on-line enrolment form on our web-page. In case you are interested in a training course that takes place on a date inconvenient for you, please announce it with given enrolment form. The training course fee has to be paid in advance (invoice). In case of cancellation by the participant until one week before the course, a fee of 20% will be charged. In case of a cancellation within less than one week before the training course, the whole course fee is owed.

Cancellation of the training course

NEPLAN AG reserves the right to cancel training courses until one week before the event, in case of an insufficient number of participants.

NEPLAN Introduction / Graphical User Interface

Goal of the training course

In this basic course you will get to know NEPLAN as a planning and operating tool for electrical networks, while the priority is set to the graphical user interface.

After this course you will be able to enter electrical networks in NEPLAN, and you will know, what you have to care about during the data input.

You will be able to represent the network according to your needs and you will know how to work with diagrams, graphic layers and variants.

Course content

- Input of a network
- Different ways of network representation (schematic/geographic)
- Data Input for network elements
- Coloring of the network according to different criteria
- Text and result boxes
- Working with a map in the background (import, calibration)
- Element libraries
- Symbol libraries
- Definition of areas and zones
- Scaling factors
- Schemas and graphic layers
- Use of variants
- Export/import of data tables and graphics to MS Excel and Word
- Printing schemas and data-tables
- Context sensitive help

To whom is this course addressed to?

NEPLAN-Beginner: You are not familiar with NEPLAN yet, but you would like to learn the benefits of the software and its most important features for the calculation and planning of electrical networks.

NEPLAN-User: You already know NEPLAN V5, but you used it rarely until now. You would like to get more familiar with the program and get to know all the useful graphic functionalities.

NEPLAN Load Flow and Short Circuit

Goal of the training course

After this course you will be able to use efficiently the NEPLAN Modules Load-Flow and Short-Circuit. A short view of the theory will make it possible for you to adjust the calculation parameters optimally. As well it will be easy for you to represent the results after your needs.

Course content

➤ **Load Flow calculation**

- Short view of the theory of load flow calculation (calculation methods, iteration process)
- Calculation parameters
- Setting of reference values
- Result representation in single line diagram and tables
- On-load tap-changer of transformers
- Distributed Slack
- Calculation of sensitivities of active power losses
- Area/Zone-regulation with transaction-definition
- Load balancing
- Contingency Analysis

➤ **Short Circuit calculation**

- Short view of the theory of short circuit calculation (calculation methods)
- Calculation parameters
- Calculation of 1 phase, 2 phase, 3phase and special faults
- Result representation in single line diagram and tables

To whom is this course addressed to?

NEPLAN-User and NEPLAN-Beginners. As a requirement, the participant needs to know well the graphical user interface. Therefore the training course „NEPLAN Introduction / graphical user interface“ is a good basis.

NEPLAN Reliability Analysis / Risk planning

Goal of the training course

After this course you will be able to use the module Reliability Calculation efficiently. A short insight into the theory offers you the basis, to handle also more complicated problems. You learn which additional data are necessary for the calculation, interpret the results and draw conclusions from it.

Course content

- Introduction
- Theory, basics
- Theory, failure modes
- Data input
- Running reliability analysis
- Interpret and visualize the results
- Result evaluations
- Common mode failures
- Special protection schemes for busbars
- Application of Reliability Analysis for Risk Management, Optimal Network Planning, Reinvestment Strategy

To whom is this course addressed to?

As a requirement, the participant needs to know well the graphical user interface and the module "Load Flow Analysis". The training courses „NEPLAN Introduction / graphical user interface“ and “NEPLAN load flow” build a good basis for this course.

NEPLAN Power System Dynamic Simulation

Goal of the training course

After this course you will be able to use efficiently the NEPLAN Simulator for dynamic simulations. A short view of the theory will make it possible for you to enter the dynamic data for elements, adjust the simulation parameters, to set events and to monitor results.

Course content

- *Introduction*
- *Theory on dynamics (RMS/EMT/Phasor dynamics)*
- *Theory and input of controls (user-defined and pre-defined)*
- *Input of relays (over current, distance, pole slip, frequency, etc.)*
- *Definition of events*
- *Simulation parameters*
- *Monitoring results (charts, tables)*
- *Running NEPLAN Simulator*
- *Interpretation of results*
- *Application on several realistic networks*

To whom is this course addressed to?

NEPLAN-User which knows the graphical user interface, the load flow and short circuit analysis.

NEPLAN Steady state/Dynamic Modeling

Goal of the training course

After this course you will be able to use all modeling facilities for steady state and dynamics within NEPLAN. The steady state modeling is done with C/C++ and for dynamic modeling Matlab can be used. It will be shown how to use NEPLAN Programming Library (NPL) to have full access to all network and control parameters, to start any calculation/simulation process and to retrieve results.

Course content

- *Introduction*
- *Theory on steady state and dynamic modeling in NEPLAN*
- *Theory on NEPLAN Programming Library (NPL)*
- *Example for steady state model*
- *Example for dynamic modeling*
- *Example for NPL*
- *Application on real network, especially on wind power application*

To whom is this course addressed to?

Researchers with some knowledge of NEPLAN or advanced NEPLAN Users, which knows about Matlab and C/C++.

HVDC Modelling

Goal of the training course

This course is intended to allow Neplan users to master modeling of HVDC devices in NEPLAN. Both major HVDC Technologies (HVDC CSC and VSC) will be addressed. At the beginning, a short general introduction to HVDC technologies will be given, allowing also users with no HVDC knowledge to follow the course. This would be followed by explanation of Neplan's HVDC models for both steady state and dynamics. At the end, practical examples including various HVDC configurations will be created in NEPLAN by users.

Course content

- ***Introduction to HVDC Technology (CSC and VSC)***
- ***Steady state HVDC modeling in NEPLAN***
- ***Dynamic HVDC modeling in Neplan***
- ***Example for HVDC CSC model (steady state and dynamic)***
- ***Examples for HVDC VSC modeling (point to point and multiterminal, steady state and dynamic)***

To whom is this course addressed to?

Users with some knowledge of NEPLAN or advanced NEPLAN that are interested to model HVDC systems in Neplan. Users with or without prior knowledge of HVDC technology are both welcome to participate the course.