POWERFACTORY

Probabilistic Analysis

S2021.05.06.Online_Prob.En

May 06th - May 07th 2021

Online training course

The purpose of this training is to introduce the principles and the handling of the Probabilistic Analysis tools in *PowerFactory*. The participants will learn how to create and assign distributions and correlations, define result variables, execute the analysis and use the various options to analyse the results.

The training contains the following topics:

- Introduction into Probabilistic Analysis of the Load Flow (PLA) and the Optimal Power Flow in PowerFactory
- Probabilistic Load Flow Analysis in a Wind Park
- Probabilistic Network Planning in a Medium-Voltage Network
- Probabilistic Spare Load and Hosting Capacity

WHO SHOULD ATTEND:

This advanced training course is intended for people who want to learn how to perform probabilistic network planning studies in *PowerFactory*.

Previous experience in *PowerFactory* basics and handing, or attendance at the equivalent introductory course: “Load Flow and Short Circuit Calculation”, is essential.

PRICE PER PARTICIPANT:

- 1,116.00€* (with valid maintenance contract)
- 1,270.00€* (without valid maintenance contract)
- 380.00€* (with valid student identification)

*Prices are exclusive of VAT

Training schedule

Central European Time (UTC +01:00)

DAY 1

9:00 Introduction (theoretical principles)
Presentation of the theoretical principles of the probabilistic analysis (distributions, correlations, etc.).

10:30 Coffee break

11:00 Introduction (handling)
Presentation of the handling of the Probabilistic Analysis tool in *PowerFactory*.

12:30 Lunch break

13:30 PLA in a Wind Park
After an introductory presentation into the topic and the objectives of this exercise, the participants will perform a probabilistic network planning study in a wind park. The probabilistic analysis is used, in order to compare the effect of different cable types on the losses within that wind park. Furthermore, the annual yield and the full-load hours of the wind turbines are evaluated.

15:00 Coffee break

15:30 PLA in a Wind Park
Proceeding of the exercise.

17:00 End of the first day

DAY 2

9:00 Probabilistic MV-Network Planning
After an introductory presentation into the topic, the participants will compare a deterministic network planning approach with a probabilistic one. In the deterministic approach two extreme scenarios are used to evaluate the status of the network and to decide whether network reinforcements/expansions are necessary. In the second part of this exercise, distributions are applied to the loads and generators in the network and the probabilistic analysis is executed to consider many different combinations of network states. The results (distributions and statistics of network quantities) are then compared to the results of the deterministic approach.

10:30 Coffee break

11:00 Probabilistic MV-Network Planning
Proceeding of the exercise.

12:30 Lunch break

13:30 Probabilistic Spare Load and Hosting Capacity
In this exercise, probabilistic analyses are performed, in order to evaluate how much load or generation can be connected to a medium voltage feeder without violating given limits. With the help of the probabilistic analysis, various combinations of load or generation growth at different locations in the network can be considered. The results are then analysed in order to determine the minimum and maximum possible load or generation growth without violating any constraints in the network.

15:00 Coffee break

15:30 Probabilistic Spare Load and Hosting Capacity
Proceeding of the exercise.

17:00 End of the training course

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