

Contingency Analysis

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March 08th 2021

Online training course

The training introduces the participant to the tools and techniques commonly used in practice for contingency analysis. This course provides a comprehensive overview the steady state analysis of abnormal system conditions to evaluate the network states resulting from unplanned outages of single elements, groups of elements in terms of post-fault loads and voltages.

- Contingency Analysis overview
- Creating Contingency Cases
- Fault Cases and Fault Groups
- Single Time Phase Contingency Analysis
- Multiple Time Phase Contingency Analysis
- Contingency Time Sweep
- Use of Short-term Thermal Ratings
- Remedial Action Schemes

Each topic above includes a theoretical background and a practical part where participants acquire hands-on experience in the use of *PowerFactory*.

WHO SHOULD ATTEND:

The training course is intended for

- Utility engineers
- Power system operators
- Project developers
- Manufacturers
- Consultants
- Electrical engineers in general

Participants should be familiar with the basic handling of *PowerFactory*. Experience with contingency analysis is not required and will be introduced in the course.

PRICE PER PARTICIPANT:

- 558.00€* (with valid maintenance contract)
- 635.00€* (without valid maintenance contract)
- 190.00€* (with valid student identification)

*Prices are exclusive of VAT

Training schedule

Central European Time (UTC +01:00)

DAY 1

9:00 Contingency Analysis

Introduction to contingency analysis. Contingency definitions in *PowerFactory*, creating contingencies, fault cases and fault groups. Executing contingency analysis, standard and advanced calculation settings. Single Phase Time and Multiple Phase Time Contingency Analysis.

9:45 Exercise: Single Time Phase Contingency Analysis

Creating contingencies, fault cases and fault groups. Executing contingency analysis. Results and reporting. Evaluation of various contingencies with regard to overloading and voltage violations.

10:30 Coffee break

11:00 Exercise: Multiple Time Phase Contingency Analysis

Contingency analysis in different time phases and analysing the effect of post-fault actions. Definition of post contingency times and post fault actions (e.g. load shedding, generator re-dispatch, switching actions). Effectiveness calculation. Load flow calculation methods and settings. Result analysis and reporting.

12:30 Lunch break

13:30 Exercise: Contingency Time Sweep

Contingency analysis for multiple study case times using the same contingencies. Contingency definitions. Calculations settings, result analysis and reporting.

14:00 Exercise: Short-term Single Time Phase Contingency Analysis

Creating and assigning Thermal Rating objects. Use of short-term Thermal Ratings in conjunction with Multiple Time Phase Contingency Analysis.

15:00 Coffee break

15:30 Remedial Action Schemes (RAS)

Introduction to the concept of Remedial Actions as applied in *PowerFactory*.

15:45 Exercise: Using Remedial Action Schemes

Creating and using a Remedial Action Scheme. Exploring possible options within the RAS functionality.

17:00 End of the training course