Grid Impact Studies for Embedded Generation

Course Content

Digsilent Buyisa (Pty) Ltd

POWER SYSTEM SOLUTIONS
MADE IN GERMANY

Grid Impact Studies for Embedded Generation

1.5 Day Course

Objective:
This training provides participants on how to successfully conduct an electrical network grid impact study assessment of an embedded generator.
The objective of the assessment is to evaluate the controllability and capability of the embedded generation against the applicable standards and codes to ensure electricity supply meets statutory requirements e.g. voltages with regulatory limits, equipment not overloaded.

Pre-requisites:
- A good working knowledge of how to operate Windows, Windows Explorer and any normal Windows program (e.g. Word).
- A basic mathematical understanding of loadflow studies and fault calculations.
- Background experience through the use of DIgSILENT PowerFactory - this will greatly enhance the participants absorption of the course material. This experience may be acquired by performing the Tutorial Exercises that are found under, Help -> Tutorial, in PowerFactory.

No of participants:
In-house at Customer premises: Minimum: 6; Maximum: 12.
Online: Minimum 6; Maximum x16

ECSA CPD Accredited and Points:
- The course is fully accredited with the Engineering Council of South Africa (ECSA).
- 1.5 points for completion.

Who Should Attend:
The course is intended for
- Utility engineers
- Power system operators
- Project Developers
- Manufacturers
- Consultants and Electrical Engineers

DIGSILENT BUYISA

Digsilent Buyisa
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Whilst no experience with the program is required, it is assumed that the participant is familiar with the network modelling fundamentals and power system analysis methods.

PRICE PER PARTICIPANT:

- For course pricing, kindly visit our website at: https://digsilent.co.za/training-courses/
- For in house prices @ customer premises: contact Digsilent for a quote.

  - Prices are exclusive of VAT
  - Please note that cost excludes your Company's internal administrative costs.
  - All prices may change without prior notice - please contact DigSilent Buyisa for the latest prices before booking.
  - **DISCOUNT** is offered if a company sends more than one delegate per course.
  - Online trainings are held using Microsoft TEAMS software platform.

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Training schedule

DAY 1

08:30 **Welcome, Course Overview & Responsibilities**
Overview of course and objectives.

09:00 **Grid Impact Data Requirements**
Step through the Grid Impact Study Requirement sheet, and with the use of supporting documents, explain on how to populate each requirement.

10:30 **Tea/Coffee break**

11:00 **Analyse the Customers Load & PV Profile**
A step-by-step guide on how to process the data, plot the profiles, determine the minimum and maximum values and retrieve reactive power data from the corresponding timestamp.

Analyse the Customers Load & PV Profile
Perform data analysis on measured load and PV generation data. Additional data measurement sets also provided to practice.

12:30 **Analyse the customers Load & PV Profile**
Derive customers scenarios to be studied.

13:30 **End of the first day**

DAY 2

08:30 **Basic PowerFactory Concepts**
Brief Introduction to Basic concepts of PowerFactory which include Modelling Graphically, Data Manager Structure and the project concept.

10:00 **Tea/Coffee break**

10:30 **PowerFactory Basic Concepts**
Adding technical data, performing load flow studies, setup study scenarios.

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12:00	**PowerFactory Basic Concepts** Setup study scenarios For fixed Power Factor 1 and non-unity Execute load flow for each scenario Record results: P, Q, pf @ POC
13:30	**End of the second day**

DAY 3

08:30	**Load flow Analysis** Introduction of reactive power capability and station Controller in PowerFactory. Using copy and paste technique on operation scenarios to consider station control. Record results: P, Q, pf @ POC
10:00	**Tea/Coffee break**
10:30	**Load flow Analysis** Introduction to the Grid Impact Study evaluation sheet and how to complete the sheet.
11:30	**Rapid Voltage Change Studies** Demonstrate how to perform RVC studies, recording of results, evaluation of results and complete evaluation sheet.
12:30	**Short Circuit Current Calculation** Demonstrate how to perform short circuit studies, recording of results, evaluation of results and complete evaluation sheet.
13:00	**Q & A session**
13:30	**End of the third day**

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