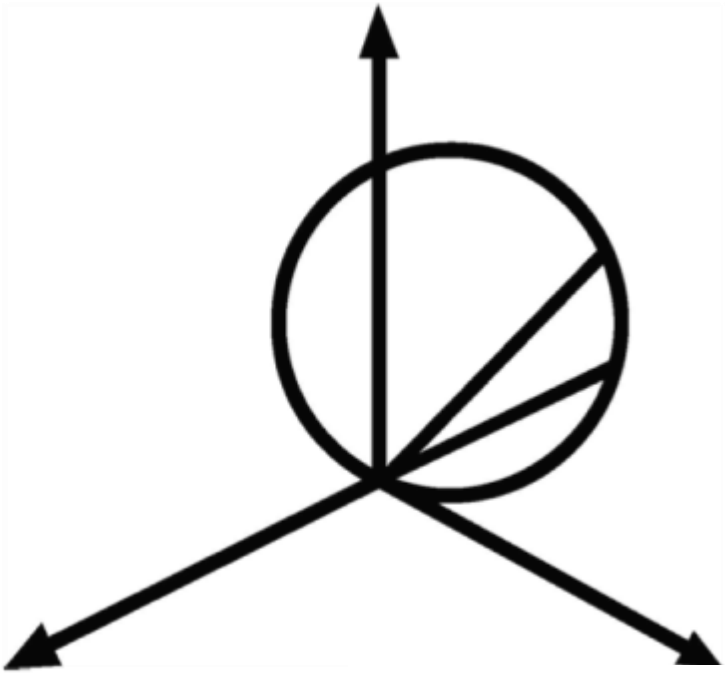
Swedish Neutral Workshop 2013

Smart Grid Solutions

3 days



Swedish Neutral AB

Workshop Smart Grid Solutions

The transformation to the Smart Grid will require new investment and commitment by its many stakeholders. These stakeholders expect significant value in return. Understanding how this value will be created is an important step in defining the vision.

"Expectations for the Smart Grid are great and will be realized through advances in six value areas including:

- **It must be more reliable.** A reliable grid provides power, when and where its users need it and of the quality they value.
- **It must be more secure.** A secure grid withstands physical and cyber attacks without suffering massive blackouts or exorbitant recovery costs. It is also less vulnerable to natural disasters and recovers quickly.
- **It must be more economic.** An economic grid operates under the basic laws of supply and demand, resulting in fair prices and adequate supplies.
- **It must be more efficient.** An efficient grid employs strategies that lead to cost control, minimal transmission and distribution losses, efficient power production, optimal asset utilization while providing consumers options for managing their energy usage.
- **It must be more environmentally friendly.** An environmentally friendly grid reduces environmental impacts thorough improvements in efficiency and by enabling the integration of a larger percentage of intermittent resources than could otherwise be reliably supported.
- **It must be safer.** A safe grid does no harm to the public or to grid workers and is sensitive to users who depend on it as a medical necessity."

Source: www.smartgridnews.com/artman/publish/commentary/What_Is_the_Smart_Grid-567.html#.UPaXiW8sAo4

The Ground Fault Neutralizer with Enhanced PD Measurement will make your network substantially more:

- **reliable & secure**– pre- and post-fault protection without feeder tripping – no power outage
- **efficient** – condition maintenance of your cable networks – optimal asset utilization
- **safe** – fastest earth fault protection on the market – minimization of (bush) fire risk

The Smart Grid Solution Workshop elaborates and explains:

- **the GFN earth fault protection system** – how is an earth fault handled in the safest and least interrupting way when it occurs
- **GFN Enhanced PD Monitoring** – how can the network be monitored to see insulation weak points before they develop into a fully developed earth fault

Target Audience

Utilities distributing electricity in a high voltage network.

Industries maintaining their own high voltage network.

Goal of the Workshop

To gain good basic understanding of system grounding.

To gain a good basic understanding of the Ground Fault Neutralizer.

To gain good basic understanding of how to specify, install and commission a Ground Fault Neutralizer.

To gain hands on experience using the Ground Fault Neutralizer.

To gain good basic understanding of the PD phenomenon, Online / Offline PD measurement and GFN Enhanced PD Measurement.

Venue

Swedish Neutrals facilities in Stockholm – Kungsängen, Sweden.

Contact information

Please send your enquiry to mail@swedishneutral.se

Program Materials

Each participant will receive:

- GFN User Manual
- Workshop Power Points & materials
- Copy of NMTerm for personal use

Content of the Workshop

Day 1

- **Introduction Neutral Treatment**
  - Grounding concepts of the world
  - Resonant Earthing
  - Ground Fault Neutralizer

- **Ground Fault Neutralizer**
  - Basic concepts GFN
  - Review of GFN equipment
  - Basic concepts Residual Current
  - Various GFN operating schemes

Day 2

- **GFN Theory**
  - Basic concepts GFN Project Specification
  - Basic concepts GFN Implementation
  - Basic concepts GFN Commissioning

- **GFN Practical Exercises**
  - Using the terminal software of the GFN (NMTerm)
  - Understanding the Alarms of the GFN
  - Understanding the Event File of the GFN
  - Understanding the Earth Fault Recordings of the GFN

- **GFN Net Model Exercises**
  - Demonstration of the various GFN operating schemes
  - Definition Earth Fault (theory)
  - Earth Fault simulations

Day 3

- **Condition based maintenance**
- **Partial Discharge phenomenon**
- **Offline PD Monitoring**
- **Online PD Monitoring**
- **Enhanced PD Monitoring**
- **Pre Fault Protection**