

HV Earthing Workshop

Soil Resistivity and High Voltage Earthing Design

Western Sydney Regional Group



VENUE

Room kW-Z.G.64
University of Western Sydney
Kingswood Campus

DATE & TIME

Tuesday 31st May 2016
09:00 - 1700

TICKETS (incl. GST)

Members & Students \$20
Non-members \$50

REGISTRATIONS CLOSE

Friday 27th May 2016

[REGISTER ONLINE](#)

Sponsored by:



HV Workshop present by Mohamad Nassereddine, Casual Lecturer at University of Western Sydney.

Continuous upgrades of electrical infrastructures are critical to accommodate the needs of a growing population, including existing and new industries. Infrastructure upgrades/expansions ensure the continuous and reliable supply of power to the community. Earthing systems are an integral part of these expansions.

Earthing systems aid in reducing the step and touch voltage along with the Earth Potential Rise at the faulted high voltage infrastructure by forming a low resistance path back to the source. Well engineered earthing systems protect the safety of workers and others in the workplace and consequently allow for a safe working environment. Correctly designed high voltage earthing systems must be compliant to relevant standards and statutory requirements. Adequate earthing system is a solid requirement for the followings:

- High voltage substations
- High voltage transmission lines
- AC interference
- Communications & Telecommunications assets
- Lightning protections
- Protection operations at individual residential homes

SPEAKER BIOGRAPHY

Mohamad Nassereddine completed the Ph.D. study in the field of high voltage power systems at Western Sydney University where he also obtained his BEng (electrical) and MEng. (Hons). He has many publications in high voltage earthing and lightning design. He delivered a series of full day workshops, with Engineers Australia, in the field of high voltage earthing system design and commissioning. Mohamad has over eleven years' experience in academia and industry. His experience covers the design, construction and commissioning of high voltage infrastructure for public and private sectors. His research interests are in the fields of earthing and lightning design for substations and transmission lines, renewable energy for standalone home and smart grid. Currently, he is the head of the design team for private engineering firm in Sydney, Australia. He is also a casual lecturer at Western Sydney University school of Computing, Engineering and Mathematics.

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Workshop Topics

In designing earthing systems, soil resistivity structure is a factor that needs to be taken into consideration. Soil resistivity determines a soils ability to impede the flow of electric current. To determine the capability of the soil to form the path for the fault in an electrical system, precise soil models are needed to guarantee that the proposed earth grid resistance is sufficiently low and the system achieves the acceptable level of Earth Potential Rise.

The soil resistivity structures come from the field measurements at proposed grid locations. Accurate designs are produced from computing soil resistivity structures using the field data.

This workshop includes the followings:

1. Soil Resistivity Test Methods as per IEEE 81-2012 standard
 - a. Available methods
 - b. Minimum requirements
2. Soil Resistivity Structure Computation
 - a. Using IEEE 80-2000 Standard
 - b. Using RESAP Software from CDEGS
4. Soil Resistivity Structure and the Allowable Safety Limits
5. Soil Resistivity Structure and Earth Grid Resistance Computation
6. Earth grid resistance computation for complex earthing system
7. Conclusions and Discussion

Lunch and morning tea will be provided.

For further information contact Dr. Tosin Famakinwa

Email: wsrg@engineersaustralia.org.au