

Optimal Selection of Insulators for Polluted Environment



PURPOSE

The Master Class in “*Optimal Selection of Insulators for Polluted Environments*” is intended to provide an understanding of the process of dimensioning, i.e. selecting of the most optimal types, materials and geometrical parameters for overhead line and substation insulators intended to various pollution environments.

The emphasis of the course is on practical application of the recommendations of IEC standard 60815, especially in the detailed application of the statistical method for insulation dimensioning, which is only briefly described in the standard. The whole process of dimensioning including definition of the site severity, pollution performance of insulator candidates and choice of insulators based on availability requirements will be covered by this practical course. This course mirrors a book which Wallace Vosloo and Igor Gutman is writing at present.



TARGET AUDIENCE

The course is a practical guide for utility staff and design and consulting engineers responsible for the selection, installation and maintenance of all types of outdoor insulators for overhead lines and substations. This includes glass, porcelain, RTV-coated, composite and hybrid types of insulators. Engineers and technical staff involved with the specification, procurement, design and asset management of insulators will greatly benefit. Students of the subject and engineers-in-training should also benefit from its use.

This course is intended to assist the participants with the knowledge needed to migrate from the old IEC 815 (1986) to the new IEC 60815 (2008) “*Selection and dimensioning of high-voltage insulators intended for use in polluted conditions*” specifications. The emphasis of this course is on the method for statistical dimensioning of insulators with respect to the operating voltage and environmental stresses, to comply with the users specified outage rate. Specialized software programs, the Insulator Selection Tool (IST) and Line Performance Estimator (LPE) will be presented. These programs are intended for line design engineers to use with the IEC 60815 standard.



TESTIMONIALS

Power Engineers Handbook 2018: “Wallace Vosloo, Insulator Guru at South Africa’s Eskom, is a larger than life personality and exactly the person you would want by your side if you were trapped in the jungle. His diverse skills have been well deployed in his professional life assisting to design many insulators to withstand the most challenging of service environments – the Koeberg Insulator Test Station.”

Power Engineers Handbook 2018: “Igor Gutman has been a tireless contributor to research and testing of insulators across all types of challenging applications and service environments. Recently, Igor launched his own team of consultants and hopefully this will guarantee he will remain a valued resource to the world’s power engineering community”.



PRESENTERS:

Working Together Since 1996

Dr. Wallace Vosloo



Dr. Vosloo has over 25 years of experience in the field of High Voltage Engineering. He is Corporate Specialist High Voltage Engineering at Eskom and presents various training courses in the field of High Voltage Engineering.

He has authored and co-authored over 100 papers in topics related to the field of high voltage insulators. He has also written the books “The Practical Guide to Outdoor High Voltage Insulators”, co-authored by Roy Macey and Dr. C. de Tourreil and “High Voltage Engineering Practice and Theory” along with Dr. JP Holtzhausen.

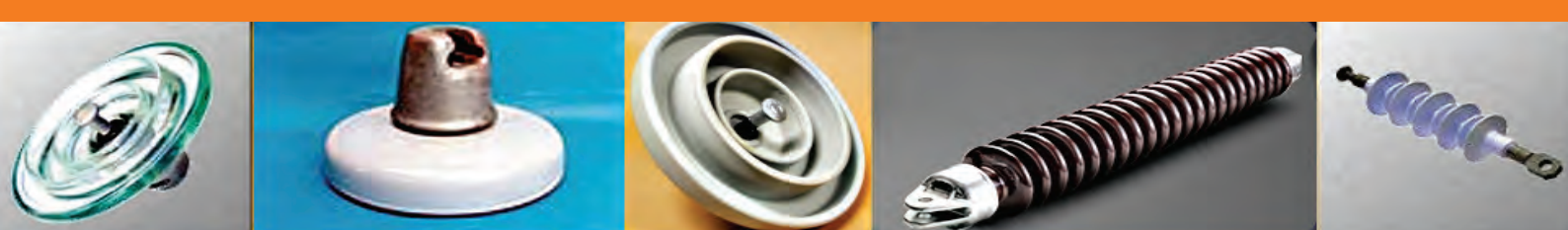
Dr. Vosloo is a recipient of the SAIEE President’s Award for his contribution to the development of high voltage insulator research and investigation capabilities and standards in South Africa and the Claude de Tourreil Memorial Award for Lifetime Achievement in the Field of Electrical Insulation. He is also an active member of various national and international working groups.

Dr. Igor Gutman



Dr. Gutman developed professional experience over more than 35 years – starting in 1981 at the Leningrad HVDC Transmission Research Institute, Russia. He also worked in PPEIU, Russia, as Lecturer and Docent since 1992 and as a consultant with marketing functions for the manufacturer “Composite Insulator”, Russia. In 1994 he joined STRI (Sweden) where being Technology Manager Insulation, he specialized in optimal dimensioning of outdoor insulation; insulator diagnostics and accelerated ageing tests.

At present he is Sr. Expert and Marketing Director of Independent Insulation Group in Sweden. He has authored and co-authored about 250 papers and is Sr. Member of IEEE. He is also a member of Swedish IEC TC 36, Distinguished Member of CIGRE and active within CIGRE/IEC/IEEE, in CIGRE in SC A3, B2, B4, C4, D1. In 2011, he became Honorary Professor at St. Petersburg Power Engineering Institute and was the 2012 recipient of the Claude de Tourreil Memorial Award for Lifetime Achievement in the Field of Electrical Insulators. He is 2013 recipient of IEC 1906 Awards in recognition of service to international standards.



COURSE OBJECTIVES

At the conclusion of this program, participants will be able to:

- Demonstrate the skills for practical application of recommendations of IEC standard IEC 60815, parts 1, 2 and 3.
- Learn the advantages of statistical methods for selection of insulators in comparison to the deterministic methods.
- Determine severity of any site of interest based on direct and indirect pollution measurements and weather modeling ("those who measure, they know"). Both measurement procedures and evaluation procedures will be learned.
- Understand and select the appropriate pollution test procedures for testing of ceramic and Hydrophobicity Transfer Material (HTM) insulators. Special attention will be paid to the innovative rapid procedures allowing for the drastic reduction of time and costs for the tests.
- Practically apply statistical methods for optimal insulation selection.
- Use specialized software programs for statistical optimal insulation selection.
- Avoid under- or over dimensioning of insulation, thus reduce the costs and increase the reliability of the network.
- Increase confidence in analysis of service experience and identification of outages related to pollution or birds.
- Develop knowledge on modern types of insulators, including ceramic, polymeric, RTV-coated and hybrid.
- Understand minimum requirements for optimal choice of composite insulators including optimal corona/grading rings design.

PLEASE NOTE: Easy to use procedures, guides, decision tables, flowcharts, inspection sheets and software are included. IEC standards and SI units are used throughout. Special sessions for practical Q&A are also included after each topic.



AGENDA

START	FINISH	DAY 1	DAY 2
08.30	10.00	Introduction	Determining of insulator flashover performance curves
10.00	10.20	Morning Tea	Morning Tea
10.20	12.00	CIGRE and IEC principles of insulation dimensioning	Optimal statistical dimensioning on insulators (part 1): theory and practice
12.00	12.30	Lunch	Lunch
13.30	14.30	Principals of statistical dimensioning and required input data	Optimal statistical dimensioning of insulators (part 2): on-line demonstration of specialised software programs (demo versions available for participants)
14.30	14.50	Afternoon Tea	Afternoon Tea
14.50	16.20	Determining of pollution severity level at site of interest	Practical evaluation of insulator options available
16.20	16.45	Questions and answers	Questions and answers



REGISTRATION, ACCOMMODATION AND FURTHER INFORMATION

To register: <https://purelycreative.currinda.com/register/event/1179>

Registration support: Debbie@purelycreativesolutions.com.au

Accommodation, if required, is the responsibility of participants.

Morning Tea, Lunch and Afternoon Tea will be supplied.

Technical enquiries may be addressed to Prof. Simon Bartlett: E: sbartlett@yahoo.com.au



COURSE PRICE

\$1,500 + GST per person

\$1,200 + GST per person for 5 or more from the same company

\$250 + GST for students

GST applies to Australian Courses only



DATES & LOCATIONS

The course will be held in the following cities with the following dates:

SYDNEY 12-13 AUGUST 2019
BRISBANE 15-16 AUGUST 2019
AUCKLAND 20-21 AUGUST 2019

Venue details located on registration website



COURSE NUMBERS

Each Master Class will need a minimum of 10 participants based on registration numbers two weeks prior the event. To ensure an interactive event, numbers will be held at a maximum of 35.



All course profits to be used to Reinvigorate High Voltage Education and Research in Australia and NZ.