DESCRIPTION

Learn to correct icing and pollution problems in electrical line insulation

Written by prominent experts in the field, this book takes an in-depth look at the issues of electrical insulators for icing and polluted environments. It shows:

• **Engineers and environmental specialists** how to carry out appropriate insulator contamination measurements, understand how these readings change with time and weather, and work out how the readings compare with the upper limits set by insulator dimensions in their existing stations

• **Design engineers** how to assess the likely maximum pollution and icing limits at a substation or along an overhead line, and then select insulators that have appropriate withstand margins

• **Regulators** why modest ice accretion at a moderate 0 °C temperature on one occasion can qualify as a major reliability event day, while many similar days pass each winter without power system problems
Educators why the ice surface flashover is well behaved compared to the conventional pollution flashover, making it much more suitable for demonstrations, modeling, and analysis.

The book is complemented with case studies and design equations to help readers identify the most appropriate insulators, bushings, and maintenance plans for their local conditions. Additionally, readers may download supplemental materials supporting evaluation of local climate and contamination.

Insulators for Icing and Polluted Environments is indispensable reading for any professional who needs reliable electrical supply from networks exposed to sources of wetting and pollution. It also serves as an excellent introduction to the subjects of high-voltage surface flashover, environmental electrochemistry, and insulation coordination for researchers, professors, and students.

ABOUT THE AUTHOR

Masoud Farzaneh, PhD, is an internationally renowned expert in the field of power engineering. He is a Fellow of the IEEE, the IET, and the Engineering Institute of Canada. Prof. Farzaneh is currently Director of the International Center on Icing and Power Network Engineering (CenGivre), as well as Chairholder of the NSERC/Hydro-Quebec Industrial Chair on Atmospheric Icing of Power Network Equipment (CIGELE) and of the Canada Research Chair on Atmospheric Icing of Power Network Equipment (INGIVRE) at University of Québec in Chicoutimi (UQAC), Canada. He is Associate Editor of IEEE Transactions on Dielectrics and Electrical Insulation, Chair of IEEE DEIS Outdoor Insulation Committee, and Convenor of CIGRé WG B2.29 on de-icing and anti-icing of overhead lines.

William A. Chisholm, PhD, is an IEEE Fellow and an internationally acknowledged expert in lightning protection, electrical insulation, and thermal rating of power systems. Dr. Chisholm is an Associate at Kinectrics in Toronto, Canada, and an Adjunct Professor at the University of Québec at Chicoutimi. He is Secretary of the PES Transmission and Distribution Committee.

SERIES

IEEE Press Series on Power Engineering

To purchase this product, please visit https://www.wiley.com/en-us/9780470282342