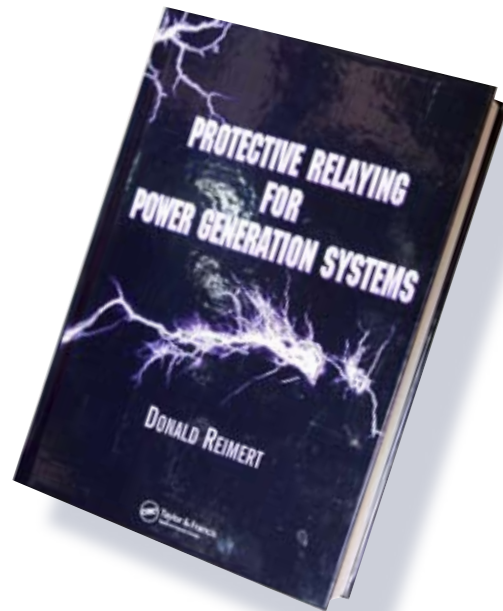


Protective Relaying for Power Generation Systems

First Edition



WITH THE PENETRATION OF distributed generators of different sizes and operating principles at different voltage levels of the electric power system it is clear that understanding well the requirements for their protection is becoming essential for every protection specialist.

Protective Relaying for Power Generation Systems is a book that covers a wide range of topics and can help the reader in achieving basic understanding or deep knowledge of generator and motor protection, thus meeting the needs of both students and professionals.

The author of the book has worked for more than 35 years in the design not only of generator and motor protection systems, but also substation, transmission and distribution facilities. His system planning experience, as well as the preparation and teaching of different protection related courses at the University of Wisconsin – Milwaukee allow him to present the material in the book in a clear and practical manner.

The approximately 600 pages of the book are divided in sixteen chapters and five appendices.

The first two chapters focus on the operation of generators under normal and fault conditions.

The following chapters cover the different types of protection functions such as:

- Primary and backup protection
- Differential, ground and unbalanced current protection
- Overexcitation and abnormal frequency protection
- Loss of synchronism

The book includes many practical considerations and calculation examples, as well as specific references to electromechanical, solid-state and digital protective devices. Each of the chapters provides an introduction to the presented topic, describes the impact of the condition on generators and requirements for protection, as well as mathematical equations and graphics with sufficient explanations. References are available at the end of the chapters.

The five appendices at the end of the book provide valuable information such as a generator data sheet and the calculation of:

- CT performance in differential relay circuits
- Dynamic and steady state stability limits
- Swing impedance locus calculation using excel
- Generator shaft torsional transients

Excel® and Mathcad® workbook constructions are included in the appendices and the actual files can be downloaded from:

<http://www.crcpress.co.uk/>.

The link for the book and the download can be found under Electrical Engineering and then Power Engineering.

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