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Nota di contenuto	HANDBOOK OF POWER SYSTEMS ENGINEERING WITH POWER ELECTRONICS APPLICATIONS; CONTENTS; PREFACE; ACKNOWLEDGEMENTS; ABOUT THE AUTHOR; INTRODUCTION; 1 OVERHEAD TRANSMISSION LINES AND THEIR CIRCUIT CONSTANTS; 1.1 Overhead Transmission Lines with LR Constants; 1.1.1 Three-phase single circuit line without overhead grounding wire; 1.1.2 Three-phase single circuit line with OGW, OPGW; 1.1.3 Three-phase double circuit line with LR constants; 1.2 Stray Capacitance of Overhead Transmission Lines; 1.2.1 Stray capacitance of three-phase single circuit line; 1.2.2 Three-phase single circuit line with OGW 1.2.3 Three-phase double circuit line1.3 Working Inductance and Working Capacitance; 1.3.1 Introduction of working inductance; 1.3.2 Introduction of working capacitance; 1.3.3 Special properties of working inductance and working capacitance; 1.3.4 MKS rational unit system and the various MKS practical units in electrical engineering field; 1.4 Supplement: Proof of Equivalent Radius req = r1/n · wn -1/n for a Multi-bundled Conductor; 1.4.1 Equivalent radius for inductance calculation; 1.4.2 Equivalent radius of capacitance calculation; Coffee break 1: Electricity, its substance and methodology

2 SYMMETRICAL COORDINATE METHOD (SYMMETRICAL COMPONENTS) 2.1 Fundamental Concept of Symmetrical Components; 2.2 Definition of Symmetrical Components; 2.2.1 Definition; 2.2.2 Implication of symmetrical components; 2.3 Conversion of Three-phase Circuit into Symmetrical Coordinated Circuit; 2.4 Transmission Lines by Symmetrical Components; 2.4.1 Single circuit line with LR constants; 2.4.2 Double circuit line with LR constants; 2.4.3 Single circuit line with stray capacitance C; 2.4.4 Double circuit line with C constants; 2.5 Typical Transmission Line Constants; 2.5.1 Typical line constants 2.5.2 L, C constant values derived from typical travelling-wave velocity and surge impedance2.6 Generator by Symmetrical Components (Easy Description); 2.6.1 Simplified symmetrical equations; 2.6.2 Reactance of generator; 2.7 Description of Three-phase Load Circuit by Symmetrical Components; 3 FAULT ANALYSIS BY SYMMETRICAL COMPONENTS; 3.1 Fundamental Concept of Symmetrical Coordinate Method; 3.2 Line-to-ground Fault (Phase a to Ground Fault: 1øG); 3.2.1 Condition before the fault; 3.2.2 Condition of phase a to ground fault 3.2.3 Voltages and currents at virtual terminal point f in the 0-1-2 domain3.2.4 Voltages and currents at an arbitrary point under fault conditions; 3.2.5 Fault under no-load conditions; 3.3 Fault Analysis at Various Fault Modes; 3.4 Conductor Opening; 3.4.1 Single-phase (phase a) conductor opening; 3.4.2 Two-phases (phase b, c) conductor opening; Coffee break 2: Dawn of the world of electricity, from Coulomb to Amp ere and Ohm; 4 FAULT ANALYSIS OF PARALLEL CIRCUIT LINES (INCLUDING SIMULTANEOUS DOUBLE CIRCUIT FAULT); 4.1 Two-phase Circuit and its Symmetrical Coordinate Method 4.1.1 Definition and meaning

Sommario/riassunto

Formerly known as Handbook of Power System Engineering, this second edition provides rigorous revisions to the original treatment of systems analysis together with a substantial new four-chapter section on power electronics applications. Encompassing a whole range of equipment, phenomena, and analytical approaches, this handbook offers a complete overview of power systems and their power electronics applications, and presents a thorough examination of the fundamental principles, combining theories and technologies that are usually treated in separate specialised fields, in a single u