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Autore	Hase Yoshihide <1937->
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Nota di contenuto	Handbook of Power System Engineering; 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 line 1.3 Supplement: Additional Explanation for Equation 1.27Coffee 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 impedance; 2.6 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: 1fG); 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 domain; 3.2.4 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 Ampe`re 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; 4.1.2 Transformation process of double circuit line; 4.2 Double Circuit Line by Two-phase Symmetrical Transformation; 4.2.1 Transformation of typical two-phase circuits; 4.2.2 Transformation of double circuit line; 4.3 Fault Analysis of Double Circuit Line (General Process); 4.4 Single Circuit Fault on the Double Circuit Line; 4.4.1 Line-to-ground fault (1fG) on one side circuit; 4.4.2 Various one-side circuit faults; 4.5 Double Circuit Fault at Single Point f; 4.5.1 Circuit 1 phase a line-to-ground fault and circuit 2 phases b and c line-to-line faults at point f

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## Sommario/riassunto

Maintaining the reliable and efficient generation, transmission and distribution of electrical power is of the utmost importance in a world where electricity is the inevitable means of energy acquisition, transportation, and utilization, and the principle mode of communicating media. Our modern society is entirely dependent on electricity, so problems involving the continuous delivery of power can lead to the disruption and breakdown of vital economic and social infrastructures. This book brings together comprehensive technical information on power system engineering, covering the fundamenta

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