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current transformers; 3.3 Transient performance of current transformers; 3.4 Special connections of current transformers; 3.5 Linear couplers and electronic current transformers; 3.6 Voltage transformers; 3.7 Coupling capacitor voltage transformers; 3.8 Transient performance of CCVTs; 3.9 Electronic voltage transformers; 3.10 Summary; Problems; References

4 Nonpilot overcurrent protection of transmission lines 4.1 Introduction; 4.2 Fuses, sectionalizers, reclosers; 4.3 Inverse, time-delay overcurrent relays; 4.4 Instantaneous overcurrent relays; 4.5 Directional overcurrent relays; 4.6 Polarizing; 4.7 Summary; Problems; References; 5 Nonpilot distance protection of transmission lines; 5.1 Introduction; 5.2 Stepped distance protection; 5.3 R-X diagram; 5.4 Three-phase distance relays; 5.5 Distance relay types; 5.6 Relay operation with zero voltage; 5.7 Polyphase relays; 5.8 Relays for multi-terminal lines; 5.9 Protection of parallel lines

5.10 Effect of transmission line compensation devices 5.11 Loadability of relays; 5.12 Summary; Problems; References; 6 Pilot protection of transmission lines; 6.1 Introduction; 6.2 Communication channels; 6.3 Tripping versus blocking; 6.4 Directional comparison blocking; 6.5 Directional comparison unblocking; 6.6 Underreaching transfer trip; 6.7 Permissive overreaching transfer trip; 6.8 Permissive underreaching transfer trip; 6.9 Phase comparison relaying; 6.10 Current differential; 6.11 Pilot wire relaying; 6.12 Multi-terminal lines; 6.13 Summary; Problems; References

7 Rotating machinery protection 7.1 Introduction; 7.2 Stator faults; 7.3 Rotor faults; 7.4 Unbalanced currents; 7.5 Overload; 7.6 Overspeed; 7.7 Abnormal voltages and frequencies; 7.8 Loss of excitation; 7.9 Loss of synchronism; 7.10 Power plant auxiliary system; 7.11 Winding connections; 7.12 Startup and motoring; 7.13 Inadvertent energization; 7.14 Torsional vibration; 7.15 Sequential tripping; 7.16 Summary; Problems; References; 8 Transformer protection; 8.1 Introduction; 8.2 Overcurrent protection; 8.3 Percentage differential protection; 8.4 Causes of false differential currents

8.5 Supervised differential relays

Sommario/riassunto

The previous two editions of *Power System Relaying* offer comprehensive and accessible coverage of the theory and fundamentals of relaying and have been widely adopted on university and industry courses worldwide. With the third edition, the authors have added new and detailed descriptions of power system phenomena such as stability, system-wide protection concepts and discussion of historic outages. *Power System Relaying*, 3rd Edition continues its role as an outstanding textbook on power system protection for senior and graduate students in the field of electric power engineering
