



Table of Contents

About This E-book

Chapter 1: Power Transmission and Distribution

Section 1.1: Per Unit System

Section 1.2: Voltage Drop Calculations

Section 1.3a: Load Flow Calculations — Theory

Section 1.3b: Load Flow Calculations — Application

Section 1.4a: Least-Cost Power Transformer Sizing — Efficiency

Section 1.4b: Least-Cost Power Transformer Sizing — Cost Estimation

Section 1.5a: Power System Harmonic Analysis — Introduction

Section 1.5b: Power System Harmonic Analysis — Harmonic Interactions

Section 1.6a: Power Line Parameters — Introduction

Section 1.6b: Power Line Parameters — Sequence Impedance of Lines

Table 1.6.1: Characteristics of Aluminum Cable, Steel Reinforced

Table 1.6.2: Characteristics of Aluminum Cable, Small Gauge Conductor

Chapter 2: Power System Protection

Section 2.1a: Power System Faults — Introduction

Section 2.1b: Power System Faults — Application

Section 2.2: Mid-Line Fault Calculations

Section 2.3a: Out-of-Step Protection — Theory

Section 2.3b: Out-of-Step Protection — Application

Section 2.4: Induction Motor Start-up Protection

Section 2.5a: DC Motor Protection — Modeling

Section 2.5b: DC Motor Protection — Simulation

Chapter 3: Power System Electrical Transients

Section 3.1a: Review of System Transients — Introduction

Section 3.1b: Review of System Transients — Transient Overvoltages

Section 3.2a: Transformer Energization — Theory

Section 3.2b: Transformer Energization — Modeling

Table 3.2.1: Typical Transformer Impedances

Section 3.2c: Transformer Energization — Compensation

Section 3.3: Application of Surge Arresters

Index of Techniques

Index of Terms