1.	Record Nr.	UNINA9910131530903321
	Autore	Wu Anguan
	Titolo	Line loss analysis and calculation of electric power systems / / Anguan Wu, North China Electric Power University, China, Baoshan Ni, Zheijian University China
	Pubbl/distr/stampa	Hoboken, NJ : , : Wiley, , 2016
	ISBN	1-118-86723-8
		1-118-86727-0
		1-118-86725-4
	Edizione	[Second edition.]
	Descrizione fisica	1 online resource (514 p.)
	Disciplina	621.31934
	Soggetti	Electric lines
		Electric resistance
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Previous edition published under the title: Line Loss in Electric Power System.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Title Page; Table of Contents; Foreword; Preface; Introduction; 1 Overview; 1.1 Active Power Loss and Electric Energy Loss; 1.2 Calculation of AC Resistance; 1.3 Influence of Temperature and Voltage Changes on Line Loss in the Measuring Period; 1.4 Influence of Load Curve Shape on Line Loss; 1.5 Influence of Load Power Factor and Load Distribution on Line Loss; 1.6 Influence of Measuring Instrument Error on Line Loss; 2 Calculation of Line Loss by Current Load Curve; 2.1 RMS Current Method and Loss Factor Method; 2.2 Derivation of Functional Relationship F(f) by Ideal Load Curve 2.3 Derivation of Approximate Formula of F(f) by Statistical Mathematical Method 2.4 Derivation of F(f) Formula by Mathematical Analysis Method; 3 Probability Theory Analysis of Current Load Curve; 3.1 Probability Meanings of Load Curve and Its Parameters; 3.2 Analysis of Rossander Formula as Distribution Function; 3.3 Comparison of Various Loss Factor Formulas; 3.4 Three-Mode Division of Active Load Duration Curve; 4 Calculation of Line Loss by Power Load Curve; 4.1 Line Loss Calculation Considering Power Factor; 4.2 Maximum Load Power Factor Method of Troger 4.3 Annual Average Power Factor Method of Glazynov 4.4 Equivalent

Load Curve Method; 4.5 Analysis of Errors of Various Line Loss Calculation Methods: 5 Line Loss Calculation after Reactive Compensation: 5.1 Calculation of Load Curve Parameters after Reactive Compensation; 5.2 Calculation of Loss Reduction Effect of Reactive Compensation; 5.3 Calculation Curves of Annual Electric Energy Losses for Power Grid Planning and Design; 6 Change Law for the Electric Energy Losses of Power Grids; 6.1 Basis of Analysis of Line Loss Changes; 6.2 Calculation and Analysis of No-load Loss 6.3 Calculation and Analysis of Load Loss Coefficient C 6.4 Determination of Voltage Level by Loss Reduction Requirement; 7 Analysis and Control of Line Loss Rate Indicators of Power Grids; 7.1 Analysis of Line Loss Rate Composition; 7.2 Analysis of Influence of Grid Electric Supply Structure on Line Loss Rate; 7.3 Analysis of Power Sales Quantity Composition; 7.4 Multiple-factor Analysis of Changes in Electricity Line Losses: 7.5 Marginal Line Loss Rate and Optimal Distribution of Increase in Electric Supply; 8 Theoretical Calculation of Electric Energy Losses of Power Grid Units 8.1 Classification of Electric Energy Losses 8.2 Calculation of Electric Energy Losses of Overhead Lines; 8.3 Calculation of Electric Energy Losses of Cable Lines; 8.4 Calculation of Electric Energy Losses of Main Transformers: 8.5 Calculation of Electric Energy Losses of Other Electrical Equipment; 9 Calculation of Electric Energy Losses of Multibranch Lines; 9.1 Basic Method for Calculating Electric Energy Losses of Multi-branch Lines; 9.2 Equivalent Resistance Method and Calculation of Electric Energy Losses of Distribution Transformers; 9.3 Double **Component Balance Method** 9.4 Dispersion Coefficient Method