1. Record Nr. UNISA996218718203316 Autore Klempner Geoff Titolo Handbook of large turbo-generator operation and maintenance // Geoff Klempner, Isidor Kerszenbaum Piscataway, New Jersey:,: IEEE Press,, c2008 Pubbl/distr/stampa [Piscatagay, New Jersey]:,: IEEE Xplore,, [2008] **ISBN** 1-118-21040-9 1-282-30351-1 9786612303517 0-470-38276-7 0-470-38270-8 Edizione [2nd ed.] Descrizione fisica 1 online resource (882 p.) IEEE Press series on power engineering;; 38 Collana Altri autori (Persone) KerszenbaumIsidor KlempnerGeoff Disciplina 621.31/3 621.313 Soggetti **Turbogenerators** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Rev. ed. of: Operation and maintenance of large turbo generators / Note generali Geoff Klempner, Isidor Kerszenbaum. c2004. Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Preface -- Acknowledgments -- I. THEORY, CONSTRUCTION, AND OPERATION -- 1. Principles of Operation of Synchronous Machines --1.1 Introduction to Basic Notions on Electric Power -- 1.2 Electrical-Mechanical Equivalence -- 1.3 Alternating Current (ac) -- 1.4 Three-Phase Circuits -- 1.5 Basic Principles of Machine Operation -- 1.6 The Synchronous Machine -- 1.7 Basic Operation of the Synchronous Machine -- 2. Generator Design and Construction -- 2.1 Stator Core --2.2 Stator Frame -- 2.3 Flux and Armature Reaction -- 2.4 Electromagnetics -- 2.5 End-Region Effects and Flux Shielding -- 2.6 Stator Core and Frame Forces -- 2.7 Stator Windings -- 2.8 Stator Winding Wedges -- 2.9 End-Winding Support Systems -- 2.10 Stator Winding Configurations -- 2.11 Stator Terminal Connections -- 2.12 Rotor Forging -- 2.13 Rotor Winding -- 2.14 Rotor Winding Slot Wedges -- 2.15 Amor isseur winding -- 2.16 Retaining Rings -- 2.17

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Sommario/riassunto

The comprehensive guide for the operation and maintenance of large turbo-generatorsThe Handbook of Large Turbo-Generator Operation and Maintenance is an expanded Second Edition of the authors' first book, Operation and Maintenance of Large Turbo-Generators. This updated book covers additional topics on generators and provides more depth on existing topics. It is the ultimate resource for operators and inspectors of large utility and industrial generating facilities who deal with multiple units of disparate size, origin, and vintage. The book is also an excellent learning tool for students and consulting and design engineers. It offers the complete scope of information regarding operation and maintenance of all types of turbine-driven generators found in the world. Based on the authors' over sixty years of combined experience in generating station and design work, the information presented in the book is designed to inform readers about actual machine operational problems and failure modes that occur in generating stations and other types of facilities. Readers will find very detailed coverage of:. Design and construction of generators and auxiliary systems. Generator operation and control, including interaction with the grid. Monitoring, diagnostics, and protection of turbo-generators. Inspection practices for the stator, rotor, and auxiliary systems. Maintenance testing, including electrical and nondestructive examination. Ideas on maintenance strategies and life cycle management. Additional topics regarding uprating generators and long-term storage are also introducedThe Handbook of Large Turbo-Generator Operation and Maintenance, Second Edition comes packed with photos and graphs, commonly used inspection forms, and extensive references for each topic. It is an indispensable reference for anyone involved in the design, construction, operation, protection, maintenance, and troubleshooting of large generators in generating stations and industrial power facilities.