

Plant Maintenance Engineering

Plant Equipment & Maintenance Engineering Handbook McGraw Hill Professional

Process Plant Machinery provides the mechanical, chemical or plant engineer with the information needed to choose equipment best suited for a particular process, to determine optimum efficiency, and to conduct basic troubleshooting and maintenance procedures. Process Plant Machinery is a unique single-source reference for engineers, managers and technical personnel who need to acquire an understanding of the machinery used in modern process plants: prime movers and power transmission machines; pumping equipment; gas compression machinery; and mixing, conveying, and separation equipment. Starting with an overview of each class, the book quickly leads the reader through practical applications and size considerations into profusely illustrated component descriptions. Where necessary, standard theory is expertly explained in shortcut formulas and graphs. Maintainability and vulnerability concerns are dealt with as well. Fully updated with all new equipment available Comprehensive Coverage Multi-industry relevance

This work sets out to furnish all levels of engineering management with the material necessary to provide cost-effective maintenance, discussing the functional design of products as well as the identification of failure systems that permit scheduled maintenance procedures. This second edition presents information on ISO 9000 requirements, utilities management, the use of bar-coding in maintenance efforts, plant re-arrangement and minor construction, and more.

Rules of Thumb for Maintenance and Reliability Engineers will give the engineer the "have to have" information. It will help instill knowledge on a daily basis, to do his or her job and to maintain and assure reliable equipment to help reduce costs. This book will be an easy reference for engineers and managers needing immediate solutions to everyday problems. Most civil, mechanical, and electrical engineers will face issues relating to maintenance and reliability, at some point in their jobs. This will become their "go to" book. Not an oversized handbook or a theoretical treatise, but a handy collection of graphs, charts, calculations, tables, curves, and explanations, basic "rules of thumb" that any engineer working with equipment will need for basic maintenance and reliability of that equipment. • Access to quick information which will help in day to day and long term engineering solutions in reliability and maintenance • Listing of short articles to help assist engineers in resolving problems they face • Written by two of the top experts in the country

This second edition of An Introduction to Predictive Maintenance helps plant, process, maintenance and reliability managers and engineers to develop and implement a comprehensive maintenance management program, providing proven strategies for regularly monitoring critical process equipment and systems, predicting machine failures, and scheduling maintenance accordingly. Since the publication of the first edition in 1990, there have been many changes in both technology and methodology, including financial implications, the role of a maintenance organization, predictive maintenance techniques, various analyses, and maintenance of the program itself. This revision includes a complete update of the applicable chapters from the first edition as well as six additional chapters outlining the most recent information available. Having already been implemented and maintained successfully in hundreds of manufacturing and process plants worldwide, the practices detailed in this second edition of An Introduction to Predictive Maintenance will save plants and corporations, as well as U.S. industry as a whole, billions of dollars by minimizing unexpected equipment failures and its resultant high maintenance cost while increasing productivity. A comprehensive introduction to a system of monitoring critical industrial equipment Optimize the availability of process machinery and greatly reduce the cost of maintenance Provides the means to improve product quality, productivity and profitability of manufacturing and production plants

The Most Complete, Current Guide to Every Aspect of Maintenance Engineering Extensively updated to cover the latest technologies and methods, Maintenance Engineering Handbook, Eighth Edition offers in-depth details on identifying and repairing faulty equipment. This definitive resource focuses on proven best practices for maintenance, repair, and overhaul (MRO), inventory management, root-cause analysis, and performance management. This thoroughly revised edition contains new chapters on: Reliability-based maintenance Preventive maintenance Sustaining maintenance Ultrasonics Operating dynamics Simplified failure modes and effects analysis Criticality analysis Process and value-stream mapping Featuring contributions from noted experts in the field, this authoritative reference will help you to successfully reduce excessive downtime and high maintenance costs by detecting and mitigating repetitive failures. Comprehensive coverage of: Organization and management of the maintenance function * Best practices for maintenance and predictive maintenance * Engineering and analysis tools * Maintenance of mechanical, electrical, and facilities equipment

R. Keith Mobley

The book aims to be reading for asset maintenance management in a perspective of whole life cycle of any type of physical asset. It deals with acquisition management, including econometric models to evaluate its life cycle, and the maintenance policies to adopt during its life until withdrawal. It also covers vital areas such as EAM/CMMS systems and its integration with the many technologies that are used to aid condition monitoring and the internet of things to improve maintenance management and to increase equipment availability. This will equip readers with new management methodologies, their requisites, and its importance to the improvement of corporate competitiveness. Key Features • Presents life cycle analysis in asset management • Attribution of tools to improve the life cycle of equipment • Provides assistance on the diagnosis of the maintenance state • Presentation of the state-of-the-art of technology to aid maintenance • Explores integration of EAM/CMMS systems with internet of things

What is "Lean?" Whether referring to manufacturing operations or maintenance, lean is about doing more with less: less effort, less space, fewer defects, less throughput time, lower volume requirements, less capital for a given level of output, etc. The need to provide the customer more value with less waste is a necessity for any firm wanting to stay in business, especially in today's increasingly global market place. And this is what lean thinking is all about. Lean Operations are difficult to sustain. More Lean Manufacturing Plant Transformations have been abandoned than have achieved true Lean Enterprise status. There are solid and recurring reasons for both of these conditions. The most significant of these reasons is that production support processes have not been pre-positioned or refined adequately to assist the manufacturing plant in making the lean transformation. And the most significant of the support functions is the maintenance operation, which determines production line equipment reliability. Moving the maintenance operation well into its own lean transformation is a must-do prerequisite for successful manufacturing plant - or any process plant - Lean Transformations. This Handbook provides detailed, step-by-step, fully explained processes for each phase of Lean Maintenance implementation providing examples, checklists and methodologies of a quantity, detail and practicality that

no previous publication has even approached. It is required reading, and a required reference, for every plant and facility that is planning, or even thinking of adopting "Lean" as their mode of operation. * A continuous improvement strategy using new "lean" principles * Eliminate wasteful practices from your manufacturing or chemical processes, increasing the profitability of your plant * Save thousands of dollars a year on new equipment by keeping your existing equipment maintained using this revolutionary method

* Useful to engineers in any industry * Extensive references provided throughout * Comprehensive range of topics covered * Written with practical situations in mind A plant engineer is responsible for a wide range of industrial activities, and may work in any industry. The breadth of knowledge required by such professionals is so wide that previous books addressing plant engineering have either been limited to certain subjects or cursory in their treatment of topics. The Plant Engineer's Reference Book is the first volume to offer complete coverage of subjects of interest to the plant engineer. This reference work provides a primary source of information for the plant engineer. Subjects include selection of a suitable site for a factory and provision of basic facilities (including boilers, electrical systems, water, HVAC systems, pumping systems and floors and finishes). Detailed chapters deal with basic issues such as lubrication, corrosion, energy conservation, maintenance and materials handling as well as environmental considerations, insurance matters and financial concerns. The authors chosen to contribute to the book are experts in their various fields. The Editor has experience of a wide range of operations in the UK, other European countries, the USA, and elsewhere in the world. Produced with the backing of the Institution of Plant Engineers, this work is the primary source of information for plant engineers in any industry worldwide.

Maintenance Mechanic is a simple e-Book for ITI Engineering Course Maintenance Mechanic (Chemical Plant) , First & Second Year, Sem-1,2,3 & 4, Revised Syllabus in 2018, It contains objective questions with underlined & bold correct answers MCQ covering all topics including all about the latest & Important about safety and environment, use of fire extinguishers, basics of electricity, test the cable and measure the electrical parameter, filling adjoining sides/surfaces maintain the right angle between the sides. Making the job on the step fitting (male & female), drill holes, countersinking, Counter boring, tapping and dieing of BSW and metric threads of various sizes, pipe butt joint-D & pipe T-Joint-D, Welding all types joints on sheet,3mm,4mm,6mm, corrosion of metals, volumetric analysis, first aid, firefighting equipment's and hydrant system. Filling for smoothness of machined surface and cutting, threading, bending and fitting of pipes as per drawing. Dismantling, overhauling and assembling of different type of pump such as positive displacement pumps (reciprocation pumps & gear pump, plunger pump). Oil seals, bearing pullers, calliper and try square. Marking out for slotting, cutting slots and grooves, cylindrical cutters and side & face cutters, PVC welding process. Making head vs. capacity curve for centrifugal and gear pumps. Practice on hammer mill, ball mill and Blake jaw crusher, multi-stage compressor, belt, bucket, screw & pneumatic conveyor and lots more.

The Best On-the-Job Guide to Industrial Plant Equipment and Systems This practical, one-of-a-kind field manual explains how equipment in industrial facilities operates and covers all aspects of commissioning relevant to engineers and project managers. Plant Equipment and Maintenance Engineering Handbook contains a data log of all major industrial and power plant components, describes how they function, and includes rules of thumb for operation. Hundreds of handy reference materials, such as calculations and tables, plus a comprehensive listing of electrical parts with common supplier nomenclature are also included in this time-saving resource. FEATURES DETAILED COVERAGE OF: Compressors * Air conditioning * Ash handling * Bearings and lubrication * Boilers * Chemical cleaning and Flushing * Condensers and circulating water systems * Controls * Conveyor systems * Cooling towers * Corrosion Deaerators * Diesel and gas turbines * Electrical * Fans * Fire protection * Fuels and combustion * Piping * Pumps Turbines * Vibration * Water treatment

Stay Up to Date on the Latest Issues in Maintenance Engineering The most comprehensive resource of its kind, Maintenance Engineering Handbook has long been a staple for engineers, managers, and technicians seeking current advice on everything from tools and techniques to planning and scheduling. This brand-new edition brings you up to date on the most pertinent aspects of identifying and repairing faulty equipment; such dated subjects as sanitation and housekeeping have been removed. Maintenance Engineering Handbook has been advising plant and facility professionals for more than 50 years. Whether you're new to the profession or a practiced veteran, this updated edition is an absolute necessity. New and updated sections include: Belt Drives, provided by the Gates Corporation Repair and Maintenance Cost Estimation Ventilation Fans and Exhaust Systems 10 New Chapters on Maintenance of Mechanical Equipment Inside: • Organization and Management of the Maintenance Function • Maintenance Practices • Engineering and Analysis Tools • Maintenance of Facilities and Equipment • Maintenance of Mechanical Equipment • Maintenance of Electrical Equipment • Instrumentation and Reliability Tools • Lubrication • Maintenance Welding • Chemical Corrosion Control and Cleaning

This introductory textbook links theory with practice using real illustrative cases involving products, plants and infrastructures and exposes the student to the evolutionary trends in maintenance. Provides an interdisciplinary approach which links, engineering, science, technology, mathematical modelling, data collection and analysis, economics and management Blends theory with practice illustrated through examples relating to products, plants and infrastructures Focuses on concepts, tools and techniques Identifies the special management requirements of various engineered objects (products, plants, and infrastructures)

Consists of proceedings of the Plant Maintenance and Engineering Conference (formerly Plant Maintenance Conference)

A Practical Guide to Maintenance Engineering presents a critical review of the physical make-up of the equipment. It discusses the equipment register, equipment codes, instrument function terminology, and loop function terminology. It also addresses planned preventive and running maintenance as well as the objectives and guidelines of running maintenance. Some of the topics covered in the book are the preparations of completed planned maintenance service sheet, task sheet, service sheet, and equipment failure sheet; maintenance defect monitoring; maintenance stores spare part monitoring; statutory inspection monitoring; maintenance vibration analysis; and maintenance management. The preparation of safety relief valve schedule is also discussed. An in-depth analysis of the work order input/output flow diagram is provided. The planned and preventive maintenance flow diagram is presented. A chapter is devoted to creation of test running and maintenance record. The book can provide useful information to iron mechanics, engineers, students, and researchers.

Generations of engineers and managers have turned to this popular handbook for expert guidance on maintenance for all types of facilities, including industrial plants, power generating stations, refineries, schools, hospitals, and office buildings. Now revised and updated with 40% new material, the Fifth Edition offers you detailed information on every aspect of maintenance engineering - from new technical advances to maintaining the latest machinery. You'll find practical advice from 55 specialists on the organization and management of the maintenance function ... establishing costs and controls

... maintenance of plant facilities ... sanitation and housekeeping ... maintenance of mechanical and electrical equipment ... and maintenance of service equipment. The Fifth Edition also discusses new ways of using computers to manage maintenance procedures for machinery, physical plant, and fixed support service - and presents all-new material on lubrication, instruments and vibration, and chemical corrosion control and cleaning. Whether you're a plant engineer, facilities manager, or maintenance engineer, this updated handbook will give you the on-the-job information and skills needed to solve virtually any maintenance problem!

Of the more than \$300 billion spent on plant maintenance and operations, U.S. industry spends as much as 80 percent of this amount to correct chronic failures of machines, systems, and people. With machines and systems becoming increasingly complex, this problem can only worsen, and there is a clear and pressing need to establish comprehensive equi

No matter which industry a company is a part of, its profitability, like its products, is driven by the reliability and performance of its plant(s). The fundamentals for maintenance found in this volume are applicable to a multitude of industries: power, process, materials, manufacturing, transportation, communication, and many others. This book shows the engineer how to select, install, maintain, and troubleshoot critical plant machinery, equipment, and systems. NEW to this edition: New material includes a chapter on inspections, providing practical guidelines for effective visual inspections, the key to effective preventive maintenance. Also included in the revision will be multiple chapters on equipment, such as pumps, compressors, and fans. Provides practical knowledge about plant machinery, equipment, and systems for the new hire or the veteran engineer Covers a wide array of topics, from shaft alignment and bearings to rotor balancing and flexible intermediate drives Delivers must-have information to the engineer which he/she will use on a daily basis, in day-to-day activities, that will affect the reliability and profitability of the plant

This volume gathers the latest advances, innovations and applications in the field of condition monitoring, plant maintenance and reliability, as presented by leading international researchers and engineers at the 5th International Conference on Maintenance Engineering and the 2020 Annual Conference of the Centre for Efficiency and Performance Engineering Network (InCoME-V & CEPE Net-2020), held in Zhuhai, China on October 23-25, 2020. Topics include vibro-acoustics monitoring, condition-based maintenance, sensing and instrumentation, machine health monitoring, maintenance auditing and organization, non-destructive testing, reliability, asset management, condition monitoring, life-cycle cost optimisation, prognostics and health management, maintenance performance measurement, manufacturing process monitoring, and robot-based monitoring and diagnostics. The contributions, which were selected through a rigorous international peer-review process, share exciting ideas that will spur novel research directions and foster new multidisciplinary collaborations.

"Updated, modernized, digitized, and streamlined edition of this classic handbook which has been educating plant and facility professionals in every aspect of maintenance engineering for more than half a century"--

Consists of proceedings of the Plant Maintenance Conference.

Plant Maintenance and Reliability Engineering provides both theoretical and practical knowledge together with the latest technological concepts and research in the field. The topics covered in this book are an integral part of the syllabi in most of the universities in India and meet the requirements of the course plant maintenance and reliability engineering taught in mechanical engineering and all allied branches. This book aims at providing the readers an insight into the working and maintenance of plant equipment and machinery. The text substantially deals with the emerging issues faced by plant engineers on a day-to-day basis and discusses the measures to address such issues. This book emphasises on the safety of workplace and workers and discusses the increasing role of plant managers in the corporate management. This text is precise, systematic, and uses an easy-to-understand language and is enriched with several illustrative examples. Plant engineers are responsible for a wide range of industrial activities, and may work in any industry. This means that breadth of knowledge required by such professionals is so wide that previous books addressing plant engineering have either been limited to only certain subjects or cursory in their treatment of topics. The Plant Engineering Handbook offers comprehensive coverage of an enormous range of subjects which are of vital interest to the plant engineer and anyone connected with industrial operations or maintenance. This handbook is packed with indispensable information, from defining just what a Plant Engineer actually does, through selection of a suitable site for a factory and provision of basic facilities (including boilers, electrical systems, water, HVAC systems, pumping systems and floors and finishes) to issues such as lubrication, corrosion, energy conservation, maintenance and materials handling as well as environmental considerations, insurance matters and financial concerns. One of the major features of this volume is its comprehensive treatment of the maintenance management function; in addition to chapters which outline the operation of the various plant equipment there is specialist advice on how to get the most out of that equipment and its operators. This will enable the reader to reap the rewards of more efficient operations, more effective employee contributions and in turn more profitable performance from the plant and the business to which it contributes. The Editor, Keith Mobley and the team of expert contributors, have practiced at the highest levels in leading corporations across the USA, Europe and the rest of the world. Produced in association with Plant Engineering magazine, this book will be a source of information for plant engineers in any industry worldwide. * A Flagship reference work for the Plant Engineering series * Provides comprehensive coverage on an enormous range of subjects vital to plant and industrial engineer * Includes an international perspective including dual units and regulations

Managing Systems and Documentation addresses the main systems necessary for the successful operation of a maintenance organization, such as performance control, work control and documentation. It shows how they can be modelled, their function and operating principles, and the main problems encountered in operation. It is the third of three stand-alone companion books with the aim of providing better understanding of maintenance operations, in order to identify problems and prescribe effective solutions. This is one of three stand-alone volumes designed to provide maintenance professionals in any sector with a better understanding of maintenance management, enabling the identification of problems and the delivery of effective solutions. * The third of three stand-alone companion books, focusing on the main systems necessary for the successful operation of a maintenance organization * Covers the maintenance of plant, production and operations assets in industry and service sectors, including manufacturing, food and process engineering, minerals and mining, transport, power and IT * Includes review questions, exercises and case studies * Clearly specified objectives and learning outcomes are given for each chapter, including a route map to link each chapter to the rest of the topics covered

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