1. Record Nr. UNINA9910141410303321

Titolo	Process plant equipment operation, reliability, and control [[electronic resource] /] / edited by Michael D. Holloway, Chikezie Nwaoha, Oliver A. Onyewuenyi
Pubbl/distr/stampa	Hoboken, : Wiley, c2012
ISBN	1-118-16254-4 1-283-64576-9 1-118-16256-0 1-118-16252-8
Descrizione fisica	1 online resource (725 p.)
Altri autori (Persone)	HollowayMichael D. <1963-> NwaohaChikezie <1984-> OnyewuenyiOliver A. <1952->
Disciplina	621.8
Soggetti	Boilers - Maintenance and repair Compressors - Maintenance and repair Filters and filtration Mixing machinery - Maintenance and repair Pipelines - Maintenance and repair Pumping machinery - Maintenance and repair Storage tanks - Maintenance and repair Valves - Maintenance and repair
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographica references and index.
Nota di contenuto	Process Plant Equipment; 3.2.2 Suction Lift Applications; CONTENTS; Contributors; Preface; SECTION I PROCESS EQUIPMENT OPERATION; 1 Introduction; 2 Valves; 2.1 Types of Control Valves; 2.1.1 Linear-Motion Control Valves; 2.1.2 Rotary-Motion Control Valves; 2.1.3 Nonreturn Valves; 2.1.4 Relief Valves; 2.2 Control Valve Actuators; 2.2.1 Pneumatic Valve Actuators; 2.2.2 Electric Valve Actuators; 2.2.3 Hydraulic Valve Actuators; 2.3 Control Valve Sizing and Selection; 2.3.1 Selecting a Valve Type; 2.3.2 Sizing and Selection: Letting the Computer Do It All; 2.4 Common Problems of Control Valves

2.4.1 Control Valve Cavitation 2.4.2 Control Valve Leakage; 2.4.3 Control Valve Nonlinearities; 2.5 Diagnosing Control Valve Problems; 2.6 Control Valve Reliability and Selection; 2.7 Control Valve Maintenance; 2.7.1 Detecting Control Valve Stiction; 2.8 Control Valve Troubleshooting; References; 3 Pumps; 3.1 Types of Pumps; 3.1.1 Positive-Displacement Pumps; 3.1.2 Dynamic Pumps; 3.2 Pump Applications; 3.2.1 Flooded Suction Applications; 3.2.3 Staged Pumping; 3.2.4 Solids-Handling Applications; 3.3 Pump Sizing and Selection; 3.3.1 System Head Curve; 3.3.2 Pump Performance Curves 3.3.3 Actual Pump Sizing and Selection 3.3.5 Net Positive Suction Head Available; 3.4 Pump Maintenance; 3.3.4 Net Positive Suction Head; 3.4.1 Bearing Lubrication; 3.4.2 Seal Maintenance; 3.4.3 Maintaining Performance; 3.4.4 Winterizing and Long-Term Storage; 3.4.5 Cold Temperature Installations; 3.5 Pump Troubleshooting; 4 Pipes; 4.1 Types of Pipes; 4.1.1 Seamless Pipe; 4.1.2 Welded Pipe; 4.2 Pipe Selection; 4.2.1 Pipe Strength; 4.2.2 Pipe Toughness; 4.2.3 Pipe Weldability; 4.2.4 Piping Material; 4.3 Pipeline Network Design and Optimization; 4.4 Pipeline Failure; 4.4.1 Pipe External Corrosion 4.4.2 Pipe Internal Corrosion 4.4.3 Stress Corrosion Cracking; 4.5 Pipeline Inspection and Leak Detection; 4.5.1 Pipeline Inspection; 4.5.2 Pipeline Inspection Tools; 4.5.3 Pipeline Leak Detection; 4.6 Pipe Maintenance; 4.6.1 Pipeline Coatings; 4.6.2 Pipeline Repair; 4.7 Pipe Troubleshooting; References; 5 Cooling Towers; 5.1 Cooling Tower Operation; 5.1.1 Cooling Tower Psychrometrics; 5.1.2 Principles of Cooling; 5.1.3 Heat Exchange; 5.1.4 Components of Cooling Towers; 5.2 Types of Cooling Towers; 5.2.1 Natural-Draft Cooling Towers; 5.2.2 Mechanical-Draft Cooling Towers
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6.3.2 Accurate Pore Size

Sommario/riassunto

"Process Plant Equipment Book is another great publication from Wiley as a reference book for final year students as well as those who will work or are working in chemical production plants and refinery..." - Associate Prof. Dr. Ramli Mat, Deputy Dean (Academic), Faculty of Chemical Engineering, Universiti Teknologi Malaysia "...give[s] readers access to both fundamental information on process plant equipment and to practical ideas, best practices and experiences of highly successful engineers from around the world... The book is illustrated throughout with numerous black & white