American Performance Engineering

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Hydraulic Turbines and Pump-turbines CRC Press
An essential guide for recognizing and responding to normalization of deviance to help organizations improve their process safety performance This book provides an introduction and offers approaches for finding and addressing normalization of deviation both in operational and organizational activities. It addresses the initial and long-term effects of normalization of deviations as seen in reduced efficiencies, reduced product quality, extended batch run time, and near miss process safety incidents which can lead to loss of containment of hazardous materials and energies. Recognizing and Responding to Normalization of Deviance addresses how to recognize and respond to the normalization of deviation that can, and almost certainly will, occur in any ongoing operations that involves humans. The book's primary focus is on reducing the incidence of normalization of deviation and the associated increased risk exposure due to its effects when operating chemical or petrochemical manufacturing facilities. It contains an introduction to the concept and offers approaches for finding and addressing normalization of deviation when it presents itself in both operational and organizational activities. Contains guidance to assist facilities in recognizing and addressing the phenomenon of normalization of deviation Provides techniques for addressing normalized deviations and techniques to eliminate waste in all manufacturing processes Describes methods for identifying normalized deviation as well as where to find deviations Includes techniques to reduce operational normalization of deviance and to reduce organizational normalization of deviance Aimed at process safety professionals and consultants applying process safety risk reduction efforts in manufacturing areas, Recognizing and Responding to Normalization of Deviance is an important book for any organization that has seen its process safety performance deteriorate over time.

Evaporators Springer Nature
Presents one hundred and thirty job descriptions for careers within the energy industry, and includes positions dealing with coal, electric, nuclear energy, renewable energy, engineering, machine operation, science, and others.

Spray Dryers CRC Press
Spray Dryers: A Guide to Performance Evaluation, Second Edition discusses the reasons for spray drying. These reasons are usually to produce a product with certain desired properties or with better efficiency than other methods. The book discusses how to plan in light of these objectives and gives guidance on the variables affecting product properties and dryer performance, to decide which variables to evaluate. Technical spray dryer installations are briefly described. Checklists are given to aid in planning measurements and listing steps needed for a test.

Journal of the American Society of Naval Engineers, Inc CRC Press
This volume contains over 70 papers on advanced research and development of processing, mechanical properties and mechanics of ceramics and composites from the proceedings of the 30th International Conference on Advanced Ceramics and Composites, January 22-27, 2006, in Cocoa Beach, Florida. The conference was organized and sponsored by The American Ceramic Society and The American Ceramic Society's Engineering Ceramics Division in conjunction with the Nuclear and Environmental Technology Division. It covers underlying fundamental links between microstructure and properties, and the ability to achieve desired multifunctional properties through innovative processing techniques.

Testing for Prediction of Material Performance in Structures and Components American Society of Mechanical Engineers
Process safety metrics is a topic of frequent conversation within chemical industry associations. Guidelines for Process Safety Metrics provides basic information on process safety performance indicators, including a comprehensive list of metrics for measuring performance and examples as to how they can be successfully applied over both the short and long term. For engineers, insurers, corporate traininers, military personnel, government officials, students, and managers involved in production, product and process development, Guidelines for Process Safety Metrics can help determine appropriate metrics useful in monitoring performance and improving process safety programs. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

Process Techniques for Engineering High-Performance Materials Springer
Positive Displacement Pumps is a current reference guide for positive displacement pumps for both traditional and state-of-the-art testing methods, and serves as a bridge between textbooks and manufacturer's literature by providing equipment testing practices based on technical know-how, practical experience, and academic theory. With its simple, practical focus, this book not only is a resource guide to any engineer's task, but also adds important information to the overall literature of pump fundamentals and operating reliability: Written for field users, and terminology concisely defined. A mentoring guide highlighting areas for troubleshooting problem-solving when performance criteria are not met. Produced with industry consensus and gone through the same rigorous technical review process as other ETPC procedures.
High Performance Computing in Structural Engineering Momentum Press
During recent years a great deal of progress has been made in performance modelling and evaluation of the Internet, towards the convergence of multi-service networks of diverging technologies, supported by internetworking and the evolution of diverse access and switching technologies. The 44 chapters presented in this handbook are revised invited works drawn from PhD courses held at recent HETNETs International Working Conferences on Performance Modelling and Evaluation of Heterogeneous Networks. They constitute essential introductory material preparing the reader for further research and development in the field of performance modelling, analysis and engineering of heterogeneous networks and of next and future generation Internets. The handbook aims to unify relevant material already known but dispersed in the literature, introduce the readers to unfamiliar and unexposed research areas and, generally, illustrate the diversity of research found in the high growth field of convergent heterogeneous networks and the Internet. The chapters have been broadly classified into 12 parts covering the following topics: Measurement Techniques; Traffic Modelling and Engineering; Queueing Systems and Networks; Analytic Methodologies; Simulation Techniques; Performance Evaluation Studies; Mobile, Wireless and Ad Hoc Networks, Optical Networks; QoS Metrics and Algorithms; All IP Convergence and Networking; Network Management and Services; and Overlay Networks.
Locomotive Performance Wiley-AIChE
The Bled workshops have traditionally produced reference documents providing visions for the future development of earthquake engineering as foreseen by leading researchers in the field. The participants of the 2011 workshop built on the tradition of these events initiated by Professors Fajfar and Krawinkler to honor their important research contributions and have now produced a book providing answers to crucial questions in today ' s earthquake engineering: " What visible changes in the design practice have been brought about by performance-based seismic engineering? What are the critical needs for future advances? What actions should be taken to respond to those needs? " The key answer is that research interests should go beyond the narrow technical aspects and that the seismic resilience of society as a whole should become an essential part of the planning and design process. The book aims to provide essential guidelines for researchers, professionals and students in the field of earthquake engineering. It will also be of particular interest for all those working at insurance companies, governmental, civil protection and emergency management agencies that are responsible for assessing and planning community resilience. The introductory chapter of the book is based on the keynote presentation given at the workshop by the late Professor Helmut Krawinkler. As such, the book includes Helmut ' s last and priceless address to the engineering community, together with his vision and advice for the future development of performance-based design, earthquake engineering and seismic risk management.
Guidelines for Integrating Management Systems and Metrics to Improve Process Safety Performance John Wiley & Sons
This book combines the synergies between performance improvement systems to help ensure safe and reliable operations, streamline procedures and cross-system auditing, and supporting regulatory and corporate compliance requirements. Many metrics are common to more than one area, such that a well-designed and implemented integrated management system will reduce the load on the Process Safety, SHE, Security and Quality groups, and improve manufacturing efficiency and customer satisfaction. Systems to improve performance include: process safety; traditional safety, health and environment; and, product quality. Chapters include: Integrating Framework; Securing Support & Preparing for Implementation; Establishing Common Risk Management Systems – How to Integrate PSM into Other EH; Testing Implementation Approach; Developing and Agreeing on Metrics; Management Review; Tracking Integration Progress and Measuring Performance; Continuous Improvement; Communication of Results to Different Stakeholders; Case Studies; and Examples for Industry.
Advances in Performance-Based Earthquake Engineering John Wiley & Sons
"The purpose of this book is to advance the wind design of tall buildings, enabling the performance-based design, review, acceptance, and construction of buildings using analyses, materials, structural systems, and devices that may or may not be covered by the prescriptive provisions of today's building codes"--
AIChE Equipment Testing Procedure - Trayed and Packed Columns John Wiley & Sons
MOP 135 provides practical information on the process of using instrumented monitoring to determine how well a dam is performing.
Prestandard for Performance-based Wind Design CRC Press
High-performance multiprocessor computers provide new and interesting opportunities to solve large-scale structural engineering problems. However, the development of new computational models and algorithms that exploit the unique architecture of these machines remains a challenge. High Performance Computing in Structural Engineering explores the use of supercomputers with vectorization and parallel processing capabilities in structural engineering applications. The book focuses on the optimization of large structures subjected to the complicated, implicit, and discontinuous constraints of commonly used design codes and presents robust parallel-algorithms for analysis of these structures. The authors apply the algorithms to and analyze the performance of minimum weight designs of large, steel space trusses and moment-resisting frames, with or without bracings, consisting of discrete standard shapes. They clearly show that adroit and judicious use of vectorization techniques can improved the speedup of an optimization algorithm, and that parallel processing can lead to even further speedup. With its review of the necessary background material, generous illustrations, and unique content, this is the definitive resource for the analysis and optimization of structure on shared-memory

multiprocessor computers. By extension, High Performance Computing in Structural Engineering will prove equally valuable in distributed computing on a cluster of workstations

Recognizing and Responding to Normalization of Deviance John Wiley & Sons

Most processed materials retain a memory of their production process at the molecular level. Subtle changes in production—such as variations in temperature or the presence of impurities—can impart performance benefits or drawbacks to individual batches of products. Some product developers have taken advantage of this process dependency to tailor properties to specific customer needs. In other cases, poorly engineered processes have resulted in serious failures. Process Techniques for Engineering High-Performance Materials explores practical strategies to guide you in systematically developing, improving, and producing engineered materials. The book describes an R&D approach that is common to many material types, from polymers, biochemicals, metal alloys, and composites to coatings, ceramics, elastomers, and processed foods. Throughout, hundreds of examples illustrate successes and disasters in the history of materials development. These examples clearly show how product management and development tactics are constrained by the nature of the production process and the strategy of the company. The author offers practical advice on how to: Foster creativity in an industrial environment and avoid factors that unintentionally suppress technical innovation Develop products when the properties of the product are highly dependent on processing variables Avoid the inevitable scale-up problems that occur on process-dependent materials Get the most out of expensive trial work in a production plant environment Combine products into a systems solution to customer problems Highlighting important rules for product development, this book helps you better understand the mechanics of engineering processed materials and how to adjust your processes to improve performance.

Career Opportunities in the Energy Industry John Wiley & Sons

Performance-based Earthquake Engineering has emerged before the turn of the century as the most important development in the field of Earthquake Engineering during the last three decades. It has since then started penetrating codes and standards on seismic assessment and retrofitting and making headway towards seismic design standards for new structures as well. The US have been a leader in Performance-based Earthquake Engineering, but also Europe is a major contributor. Two Workshops on Performance-based Earthquake Engineering, held in Bled (Slovenia) in 1997 and 2004 are considered as milestones. The ACES Workshop in Corfu (Greece) of July 2009 builds on them, attracting as contributors world-leaders in Performance-based Earthquake Engineering from North America, Europe and the Pacific rim (Japan, New Zealand, Taiwan, China). It covers the entire scope of Performance-based Earthquake Engineering: Ground motions for performance-based earthquake engineering; Methodologies for Performance-based seismic design and retrofitting; Implementation of Performance-based seismic design and retrofitting; and Advanced seismic testing for performance-based earthquake engineering. Audience: This volume will be of interest to scientists and advanced practitioners in structural earthquake engineering, geotechnical earthquake engineering, engineering seismology, and experimental dynamics.

Guidelines for Failure Investigation ASTM International

Performance-Based Structural Fire Design presents recommended alternatives to the prescriptive procedures for structural fire design of buildings as described in the nationally adopted standard Minimum Design Loads and Associated Criteria for Buildings and Other Structures, ASCE 7-16, and based on the guidance contained in Structural Fire Engineering, Manual of Practice 138. It describes performance-based structural fire design (PBSFD) methods and provides real-world design applications by leading structural engineering firms.

Journal of the American Society of Naval Engineers, Inc John Wiley & Sons

On the afternoon of September 11, 2001, ASCE's Structural Engineering Institute established a building performance study team to examine the structural damage inflicted on the Pentagon by the crash. The members of the team reviewed available information o

Monitoring Dam Performance ASTM International

AIChE manual updates and consolidates procedures for testing performance of distillation columns From classic distillation operations to air stripping to other separations processes, selecting the correct column for appropriate efficient, safe, and environmentally-sound operations can be an important step. The newest updated volume in AIChE ' s long-running Equipment Testing Procedures series, Trayed and Packed Columns: A Guide to Performance Evaluation, Third Edition provides chemical engineers, plant managers, and other professionals with helpful advice to assess and measure performance of a variety of distillation columns, including those that utilize bubble cap, sieve, valve trays, or packing material. The new book combines and updates into one user-friendly volume the best available field knowledge from previous publications on both types of distillation columns. Designed not as a single set of compulsory steps, but as a compilation of techniques, it will allow the user to select the procedure that best applies to its operating parameters. The testing steps presented can be used to assess reliable performance data on mass transfer efficiency, capacity, energy consumption, and pressure drop—information essential to effective troubleshooting of performance problems, identifying capacity bottlenecks, determining operating ranges, and a number of other routine maintenance and optimization processes. Opening with an extensive definition section, organized by topical area, the book then goes on to address: Selection of instrumentation and identification of elements to be measured Pre-test planning procedures Strategies for data collection and evaluation, including sampling procedures Pre-test, in-test, and post-test considerations (equipment, safety, process, environmental) Computation and interpretation of results, including individual breakdowns for trayed and packed columns in terms of hydraulic and efficiency performance Test troubleshooting analysis in twelve key areas The book concludes with appendices for relevant symbols and nomenclature, plus sample caculations generated from performance tests. With its engineer-tested procedures and thorough explanations, Trayed and Packed Columns: A Guide to Performance Evaluation, Third Edition is an essential text for anyone engaged in implementing new technology in equipment design, identifying process problems, and optimizing equipment performance.

The Pentagon Building Performance Report ASCE Publications

The Guidelines for Failure Investigation by the Task Committee on Guidelines for Failure Investigations of the Technical Council on Forensic Engineering, American Society of Civil Engineers provides an overview to the functions and responsibilities of the successful failure investigation. The Guidelines covers all aspects of the

investigative process from the planning stage, the development of a failure hypothesis, and the preparation of a concise report, to the engineer's role as an expert witness. To help explain this process, two investigations in specific engineering disciplines, geotechical and structural, are developed in detail. With this complete coverage, the Guidelines not only provides an introduction to the investigative process for the initiate forensic engineer, but also supplies the veteran investigator with references and guidance.

Engineering-economic Analysis of Mobile Home Thermal Performance Springer Science & Business Media

AIChE's first manual for testing and measuring performance of centrifugal compressors The newest addition to AIChE's long-running Equipment Testing Procedure series, Centrifugal Compressors: A Guide to Performance Evaluation and Site Testing provides chemical engineers, plant managers, and other professionals with helpful advice to assess and measure the performance of a key component in a number of chemical process operations. From petrochemical refining and natural gas production to air separation plants, efficient, safe, and environmentally-sound operations depend on reliable performance by centrifugal compressors. The book presents a step-by-step approach to preparing for, planning, executing, and analyzing tests of centrifugal compressors, with an emphasis on methods that can be conducted on-site—and with an acknowledgement of the strengths and limitations of these methods. The book opens with an extensive and detailed section offering definitions of relevant terms explained not only in words, but also with the equations used to determine their values. The book then goes on to address: Selection of instrumentation and identification of elements to be measured Strategies for data collection and evaluation Recommendations for when to schedule testing Pre-test, in-test, and post-test considerations (i.e., equipment, safety, process, and environmental) Computation and interpretation of results, including guidelines for field modifications and analysis of results The book concludes with appendices for applicable codes and standards, relevant symbols and nomenclature, and values generated from a sample performance test. With its engineer-tested procedures and thorough explanations, Centrifugal Compressors is an essential text for anyone engaged in implementing new technology in equipment design, identifying process problems, and optimizing equipment performance.

AIChE Equipment Testing Procedure - Centrifugal Compressors John Wiley & Sons

This testing procedure provides methods of conducting and interpreting field tests on centrifugal pumps with actual pumped fluids. Contents include definitions and descriptions of terms; test planning; instrumentation and measurement methods; test procedure; computation of results; and interpretation of results. The volume also contains appendix materials including nomenclature; sample test results; sample calculation (dual units); related calculations; and references.