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PROCESSING OF HEAVY CRUDE OILS

CHALLENGES AND OPPORTUNITIES

INTRODUCTION TO PERMANENT PLUG AND ABANDONMENT OF WELLS

Springer Nature This open access book offers a timely guide to challenges and current practices to permanently plug and abandon hydrocarbon wells. With a focus on offshore North Sea, it analyzes the process of plug and abandonment of hydrocarbon wells through the establishment of permanent well barriers. It provides the reader with extensive knowledge on the type of barriers, their functioning and verification. It then discusses plug and abandonment methodologies, analyzing different types of permanent plugging materials. Last, it describes some tests for verifying the integrity and functionality of installed permanent barriers. The book offers a comprehensive reference guide to well plugging and abandonment (P & A) and well integrity testing. The book also presents new technologies that have been proposed to be used in plugging and abandoning of wells, which might be game-changing technologies, but they are still in laboratory or testing level. Given its scope, it addresses students and researchers in both academia and industry. It also provides information for engineers who work in petroleum industry and should be familiarized with P & A of hydrocarbon wells to reduce the time of P & A by considering it during well planning and construction.

SHIP-SHAPED OFFSHORE INSTALLATIONS

DESIGN, BUILDING, AND OPERATION

Cambridge University Press Ship-shaped offshore units are some of the more economical systems for the development of offshore oil and gas, and are often preferred in marginal fields. These systems are especially attractive to develop oil and gas fields in deep and ultra-deep water areas and remote locations away from

existing pipeline infrastructures. Recently, the ship-shaped offshore units have been applied to near shore oil and gas terminals. This 2007 text is an ideal reference on the technologies for design, building and operation of ship-shaped offshore units, within inevitable space requirements. The book includes a range of topics, from the initial contracting strategy to decommissioning and the removal of the units concerned. Coverage includes both fundamental theory and principles of the individual technologies. This book will be useful to students who will be approaching the subject for the first time as well as designers working on the engineering for ship-shaped offshore installations.

SHIP DESIGN

METHODOLOGIES OF PRELIMINARY DESIGN

Springer This book deals with ship design and in particular with methodologies of the preliminary design of ships. The book is complemented by a basic bibliography and five appendices with useful updated charts for the selection of the main dimensions and other basic characteristics of different types of ships (Appendix A), the determination of hull form from the data of systematic hull form series (Appendix B), the detailed description of the relational method for the preliminary estimation of ship weights (Appendix C), a brief review of the historical evolution of shipbuilding science and technology from the prehistoric era to date (Appendix D) and finally a historical review of regulatory developments of ship's damage stability to date (Appendix E). The book can be used as textbook for ship design courses or as additional reading for university or college students of naval architecture courses and related disciplines; it may also serve as a reference book for naval architects, practicing engineers of related disciplines and ship officers, who like to enter the ship design field systematically or to use practical methodologies for the estimation of ship's main dimensions and of other ship main properties and elements of ship design.

ESSENTIALS OF OFFSHORE STRUCTURES

FRAMED AND GRAVITY PLATFORMS

CRC Press Essentials of Offshore Structures: Framed and Gravity Platforms examines the engineering ideas and offshore drilling platforms for exploration and production. This book offers a clear and acceptable demonstration of both the theory and application of the relevant procedures of structural, fluid, and geotechnical mechanics to offshore structures. It

OFFSHORE ENGINEERING

AN INTRODUCTION

OFFSHORE ENERGY STRUCTURES

FOR WIND POWER, WAVE ENERGY AND HYBRID MARINE PLATFORMS

Springer This book provides all the key information needed to design offshore structures for renewable energy applications successfully. Suitable for practicing engineers and students, the author conveys design principles and best practices in a clear, concise manner, focusing on underlying physics while eschewing complicated mathematical detail. The text connects underlying scientific theory with industry standards and practical implementation issues for offshore wind turbines, wave energy converters and current turbines. Combined concepts such as wave-wind energy platforms are discussed, as well. Coverage of design codes and numerical tools ensures the usefulness of this resource for all those studying and working in the rapidly expanding field of offshore renewable energy.

PROCEEDINGS OF THE FOURTH INTERNATIONAL CONFERENCE IN OCEAN ENGINEERING (ICOE2018)

VOLUME 2

Springer This book comprises selected proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018), focusing on emerging opportunities and challenges in the field of ocean engineering and offshore structures. It includes state-of-the-art content from leading international experts, making it a valuable resource for researchers and practicing engineers alike.

COMPRESSOR HANDBOOK

McGraw-Hill Professional Pub An all-in-one resource covering the design, practical application, and maintenance of compressors--of interest to professionals in compressor manufacturing, chemical and gas processing, and other industries. Packed with illustrations and diagrams of all the major compressor types, from paint-sprayers to power-cleaners. Engineering data section covers gas properties, efficiency curves, compression ratios, and horsepower.

GEOSPATIAL THINKING

Springer Science & Business Media For the fourth consecutive year, the Association of Geographic Infor- tion Laboratories for Europe (AGILE) promoted the edition of a book with the collection of the scientific papers that were submitted as full-papers to the AGILE annual international conference. Those papers went through a th competitive review process. The 13 AGILE conference call for fu- papers of original and unpublished fundamental scientific research resulted in 54 submissions, of which 21 were accepted for publication in this - lume (acceptance rate of 39%). Published in the Springer Lecture Notes in Geoinformation and Car- th graphy, this book is associated to the 13 AGILE Conference on G- graphic Information Science, held in 2010 in Guimarães, Portugal, under the title “Geospatial Thinking”. The efficient use of geospatial information and related technologies assumes the knowledge of concepts that are fundamental components of Geospatial Thinking, which is built on reasoning processes, spatial conc- tualizations, and representation methods. Geospatial Thinking is associated with a set of cognitive skills consisting of

several forms of knowledge and cognitive operators used to transform, combine or, in any other way, act on that same knowledge. The scientific papers published in this volume cover an important set of topics within Geoinformation Science, including: Representation and Visualisation of Geographic Phenomena; Spatiotemporal Data Analysis; Geo-Collaboration, Participation, and Decision Support; Semantics of Geoinformation and Knowledge Discovery; Spatiotemporal Modelling and Reasoning; and Web Services, Geospatial Systems and Real-time Appli- tions.

PORT BUSINESS

SECOND EDITION

Walter de Gruyter GmbH & Co KG Port Business is essential reading for all those with an interest in trade and transportation and the role of ports in the global supply chain. It discusses the various types of ports in existence, identifies the major ports per category, analyzes what the key business drivers are, describes their governance, how they are managed, which trends influence them, and what kind of impact they have on supply chains. Dr. Jürgen Sorgenfrei uses his significant consulting and project development experience within the international ports, shipping, rail & logistics sector, and in global economics, trade, analytics, and forecasting as well as in intermodal hinterland transport to provide this comprehensive overview of port management. The book is a combination of a strong background in principles and practical knowledge and is an indispensable resource for those interested in maritime economics. .

SUBSEA PIPELINES AND RISERS

Elsevier • Updated edition of a best-selling title • Author brings 25 years experience to the work • Addresses the key issues of economy and environment Marine pipelines for the transportation of oil and gas have become a safe and reliable way to exploit the valuable resources below the world’s seas and oceans. The design of these pipelines is a relatively new technology and continues to evolve in its quest to reduce costs and minimise the effect on the environment. With over 25years experience, Professor Yong Bai has been able to assimilate the essence of the applied mechanics aspects of offshore pipeline system design in a form of value to students and designers alike. It represents an excellent source of up to date practices and knowledge to help equip those who wish to be part of the exciting future of this industry.

AFRICA’S BOOMING OIL AND NATURAL GAS EXPLORATION AND PRODUCTION: NATIONAL SECURITY IMPLICATIONS FOR THE UNITED STATES AND CHINA

Lulu.com Two key long-term energy trends are shifting the strategic balance between the United States and China, the world's superpower rivals in the 21st century: first, a domestic boom in U.S. shale oil and gas is dramatically boosting America's energy security; second, the frenetic and successful search for hydrocarbons in Africa is making it an increasingly crucial element in China's energy

diversification strategy. America's increasing energy security and China's increased dependence on energy imports from Africa and the Middle East until well past 2040 despite its own shale discoveries will make Beijing's own increasing energy insecurity be felt even more acutely, pushing the People's Liberation Army to accelerate adoption of a "two ocean" military strategy that includes an enduring presence in the Indian Ocean as well as the Pacific Ocean.

PETROLEUM RESERVOIR ROCK AND FLUID PROPERTIES

CRC Press A strong foundation in reservoir rock and fluid properties is the backbone of almost all the activities in the petroleum industry. Petroleum Reservoir Rock and Fluid Properties offers a reliable representation of fundamental concepts and practical aspects that encompass this vast subject area. The book provides up-to-date coverage of vari

ANALYSIS AND DESIGN OF MARINE STRUCTURES

INCLUDING CD-ROM

CRC Press 'Analysis and Design of Marine Structures' explores recent developments in methods and modelling procedures for structural assessment of marine structures: - Methods and tools for establishing loads and load effects; - Methods and tools for strength assessment; - Materials and fabrication of structures; - Methods and tools for structural design and optimisation; - Structural reliability, safety and environment protection. The book is a valuable reference source for academics, engineers and professionals involved in marine structures and design of ship and offshore structures.

OFFSHORE RISK ASSESSMENT VOL. 2

PRINCIPLES, MODELLING AND APPLICATIONS OF QRA STUDIES

Springer Nature This is the first textbook to address quantified risk assessment (QRA) as specifically applied to offshore installations and operations. As the second part of the two-volume updated and expanded fourth edition, it adds a new focus on the recent development of Normally Unattended Installations (NUIs), which are essentially autonomous installations that combine digitalization, big data, drones and machine learning, and can be supported by W2W (walk-to-work) vessels. These minimalistic installations with no helideck and very limited safety systems will require a new approach to risk assessment and emergency planning, especially during manned periods involving W2W vessels. Separate chapters analyse the main hazards for offshore structures: fire, explosion, collision, and falling objects, as well as structural and marine hazards. The book explores possible simplifications of risk assessment for traditional manned installations. Risk mitigation and control are also discussed, as well as how the results of quantitative risk assessment studies should be presented. In closing, the book provides an updated approach to environmental risk assessment. The book offers a comprehensive reference guide for academics and students of marine/offshore risk assessment and management. It will also be of interest to professionals in the industry, as well as contractors, suppliers, consultants

and regulatory authorities.

USERS GUIDE TO PHYSICAL MODELLING AND EXPERIMENTATION

EXPERIENCE OF THE HYDRALAB NETWORK

CRC Press A Users Guide to Hydraulic Modelling and Experimentation provides a systematic, comprehensive summary of the progress made through HYDRALAB III . The book combines the expertise of many of the leading hydraulic experimentalists in Europe and identifies current best practice for carrying out state-of-the-art, modern laboratory investigations. In addition it gives an inventory and reviews recent advances in instrumentation and equipment that drive present and new developments in the subject. The Guide concentrates on four core areas – waves, breakwaters, sediments and the relatively-new (but rapidly-developing) cross-disciplinary area of hydrodynamics/ecology. Progress made through the 'CoMIBBS' component of HYDRALAB III provides the material for a chapter focussed on guidance, principles and practice for composite modelling. There is detailed consideration of scaling and the degree of relevance of laboratory/physical modelling approaches for specific contexts included in each of the individual chapters. The Guide includes outputs from the workshops and several of the innovative transnational access projects that have been supported within HYDRALAB III, as well as the focussed joint research activities SANDS and CoMIBBS. Its primary purpose is to serve as a shared resource to disseminate the outstanding advances achieved within HYDRALAB III but, even more than this, it is a tribute to the human and institutional collaborations that led to and sustained the research advances, the human relationships that were strengthened and initiated through joint participation in the Programme, and the training opportunities that participation provided to the many young researchers engaged in the projects.

PROCEEDINGS OF THE FOURTH INTERNATIONAL CONFERENCE IN OCEAN ENGINEERING (ICOE2018)

VOLUME 1

Springer This book comprises selected proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018), focusing on emerging opportunities and challenges in the field of ocean engineering and offshore structures. It includes state-of-the-art content from leading international experts, making it a valuable resource for researchers and practicing engineers alike.

TUBULAR STRUCTURES XI

11TH INTERNATIONAL SYMPOSIUM AND IIW INTERNATIONAL CONFERENCE ON TUBULAR STRUCTURES

Routledge This topical book contains the latest scientific and engineering developments in the field of tubular steel structures, as presented at the "11th International Symposium and IIW International Conference on Tubular Structures". The International Symposium on Tubular Structures (ISTS) has a long-standing

reputation for being the principal showcase for manufactured tubing and the prime international forum for discussion of research, developments and applications in this field. Various key and emerging subjects in the field of hollow structural sections are covered, such as: novel applications and case studies, static and fatigue behaviour of connections/joints, concrete-filled and composite tubular members, earthquake resistance, specification and code developments, material properties and structural reliability, impact resistance and brittle fracture, fire resistance, casting and fabrication innovations. Research and development issues presented in this book are applicable to buildings, bridges, offshore structures, entertainment rides, cranes, towers and various mechanical and agricultural equipment. This book is thus a pertinent reference source for architects, civil and mechanical engineers, designers, steel fabricators and contractors, manufacturers of hollow sections or related construction products, trade associations involved with tubing, owners or developers of tubular structures, steel specification committees, academics and research students. The conference presentations herein include two keynote lectures (the International Institute of Welding Houdremont Lecture and the ISTS Kurobane Lecture), plus finalists in the CIDECT Student Papers Competition. The 11th International Symposium and IIW International Conference on Tubular Structures – ISTS11 – took place in Québec City, Canada from August 31 to September 2, 2006.

CYCLIC LOADING OF SOILS

FROM THEORY TO DESIGN

Taylor & Francis

MULTIMEDIA APPLICATIONS, SERVICES AND TECHNIQUES - ECMAST'99

4TH EUROPEAN CONFERENCE, MADRID, SPAIN, MAY 26-28, 1999, PROCEEDINGS

Springer Science & Business Media This book constitutes the refereed proceedings of the 4th European Conference on Multimedia Applications, Services and Techniques, ECMAST'99, held in Madrid, Spain in May 1999. The 37 revised full papers presented were carefully reviewed and selected from a total of 71 submissions. The book is divided in sections on services and applications, multimedia terminals, content creation, physical broadcast infrastructure, multimedia over the Internet, metadata, 3D imaging, multicast protocols, security and protection, and mobility.

SPRINGER HANDBOOK OF OCEAN ENGINEERING

Springer This handbook is the definitive reference for the interdisciplinary field that is ocean engineering. It integrates the coverage of fundamental and applied material and encompasses a diverse spectrum of systems, concepts and operations in the maritime environment, as well as providing a comprehensive update on contemporary, leading-edge ocean technologies. Coverage includes an overview on the fundamentals of ocean science, ocean signals and instrumentation, coastal

structures, developments in ocean energy technologies and ocean vehicles and automation. It aims at practitioners in a range of offshore industries and naval establishments as well as academic researchers and graduate students in ocean, coastal, offshore and marine engineering and naval architecture. The Springer Handbook of Ocean Engineering is organized in five parts: Part A: Fundamentals, Part B: Autonomous Ocean Vehicles, Subsystems and Control, Part C: Coastal Design, Part D: Offshore Technologies, Part E: Energy Conversion

PROCEEDINGS OF EECE 2019

ENERGY, ENVIRONMENTAL AND CONSTRUCTION ENGINEERING

Springer Nature This book gathers the latest advances, innovations, and applications in the field of energy, environmental and construction engineering, as presented by international researchers and engineers at the International Scientific Conference Energy, Environmental and Construction Engineering, held in St. Petersburg, Russia on November 19-20, 2019. It covers highly diverse topics, including BIM; bridges, roads and tunnels; building materials; energy efficient and green buildings; structural mechanics; fluid mechanics; measuring technologies; environmental management; power consumption management; renewable energy; smart cities; and waste management. The contributions, which were selected by means of a rigorous international peer-review process, highlight numerous exciting ideas that will spur novel research directions and foster multidisciplinary collaborations.

CONSTRUCTION MANAGEMENT AND DESIGN OF INDUSTRIAL CONCRETE AND STEEL STRUCTURES

CRC Press The recent worldwide boom in industrial construction and the corresponding billions of dollars spent every year in industrial, oil, gas, and petrochemical and power generation project, has created fierce competition for these projects. Strong management and technical competence will bring your projects in on time and on budget. An in-depth explorat

DEVELOPMENTS IN THE COLLISION AND GROUNDING OF SHIPS AND OFFSHORE STRUCTURES

PROCEEDINGS OF THE 8TH INTERNATIONAL CONFERENCE ON COLLISION AND GROUNDING OF SHIPS AND OFFSHORE STRUCTURES (ICCGS 2019), 21-23 OCTOBER, 2019, LISBON, PORTUGAL

CRC Press Developments in the Collision and Grounding of Ships and Offshore includes the contributions to the 8th International Conference on Collision and Grounding of Ships and Offshore Structures (ICCGS 2019, Lisbon, Portugal, 21-23 October 2019). The series of ICCGS-conferences started in 1996 in San Francisco, USA, and are organised every three years in Europe, Asia and the Americas. Developments in the Collision and Grounding of Ships and Offshore covers a wide range of topics, from the behavior of large passenger vessels in collision and grounding, collision and grounding in arctic conditions including accidental ice

impact, stability residual strength and oil outflow of ships after collision or grounding, collision and grounding statistics and predictions and measures of the probability of incidents, risk assessment of collision and grounding, prediction and measures for reduction of collision and grounding, new designs for improvement of structural resistance to collisions, analysis of ultimate strength of ship structures (bulkheads, tank tops, shell etc.), design of buffer bows to reduce collision consequences, design of foreship structures of ferries with doors to avoid water ingress in case of a collision, development of rational rules for the structural design against collision and grounding, innovative navigation systems for safer sea transportation, the role of IMO, classification societies, and other regulatory bodies in developing safer ships, collision between ships and offshore structures, collision between ships and fixed or floating bridges and submerged tunnels, collision with quays and waterfront structures, collision and grounding experiments, properties of marine-use materials under impact loadings, residual strength of damaged ships and offshore structures, analysis of ultimate strength of ship structures, to human factors in collision and grounding accidents. Developments in the Collision and Grounding of Ships and Offshore is a valuable resource for academics, engineers and professionals involved in these areas.

SEA LOADS ON SHIPS AND OFFSHORE STRUCTURES

Cambridge University Press After introducing the theory of the structural loading on ships and offshore structures based on the motions of wind, waves and currents, this text demonstrates its applications to conventional and non-conventional sea vessels, including extensive exercises and examples.

PETROLEUM ABSTRACTS. LITERATURE AND PATENTS

ARTIFICIAL IMMUNE SYSTEMS

7TH INTERNATIONAL CONFERENCE, ICARIS 2008, PHUKET, THAILAND, AUGUST 10-13, 2008, PROCEEDINGS

Springer Science & Business Media This book constitutes the refereed proceedings of the 7th International Conference on Artificial Immune Systems, ICARIS 2008, held in Phuket, Thailand, in August 2008. The 40 revised full papers presented were carefully reviewed and selected from 67 submissions. The papers are organized in topical sections on computational immunology, applied AIS, and theoretical AIS. Position papers and conceptual papers are also included.

PRODUCT AND PROCESS DESIGN

DRIVING INNOVATION

Walter de Gruyter GmbH & Co KG Product and Process Design: Driving Innovation is a comprehensive textbook for students and industrial professionals. It treats the combined design of innovative products and their innovative manufacturing processes, providing specific methods for BSc, MSc, PDEng and PhD courses. Students, industrial innovators and managers are guided through all design steps in

all innovation stages (discovery, concept, feasibility, development, detailed engineering, and implementation) to successfully obtain novel products and their novel processes. The authors' decades of innovation experience in industry, as well as in teaching BSc, MSc, and post-academic product and process design courses, thereby including the latest design publications, culminate in this book.

MODERN EARTHQUAKE ENGINEERING

OFFSHORE AND LAND-BASED STRUCTURES

Springer This book addresses applications of earthquake engineering for both offshore and land-based structures. It is self-contained as a reference work and covers a wide range of topics, including topics related to engineering seismology, geotechnical earthquake engineering, structural engineering, as well as special contents dedicated to design philosophy, determination of ground motions, shock waves, tsunamis, earthquake damage, seismic response of offshore and arctic structures, spatial varied ground motions, simplified and advanced seismic analysis methods, sudden subsidence of offshore platforms, tank liquid impacts during earthquakes, seismic resistance of non-structural elements, and various types of mitigation measures, etc. The target readership includes professionals in offshore and civil engineering, officials and regulators, as well as researchers and students in this field.

NASA SYSTEMS ENGINEERING HANDBOOK

DIANE Publishing Provides general guidance and information on systems engineering that will be useful to the NASA community. It provides a generic description of Systems Engineering (SE) as it should be applied throughout NASA. The handbook will increase awareness and consistency across the Agency and advance the practice of SE. This handbook provides perspectives relevant to NASA and data particular to NASA. Covers general concepts and generic descriptions of processes, tools, and techniques. It provides information on systems engineering best practices and pitfalls to avoid. Describes systems engineering as it should be applied to the development and implementation of large and small NASA programs and projects. Charts and tables.

RISK-BASED SHIP DESIGN

METHODS, TOOLS AND APPLICATIONS

Springer Science & Business Media Risk-based ship design is a new scientific and engineering field of growing interest to researchers, engineers and professionals from various disciplines related to ship design, construction, operation and regulation. The main motivation to use risk-based approaches is twofold: implement a novel ship design which is considered safe but - for some formal, regulatory reason - cannot be approved today and/or rationally optimize an existing design with respect to safety, without compromising on efficiency and performance. It is a clear direction that all future technological and regulatory (International Maritime Organisation) developments regarding ship design and operation will go through

risk-based procedures, which are known and well established in other industries (e.g. nuclear, aviation). The present book derives from the knowledge gained in the course of the project SAFEDOR (Design, Operation and Regulation for Safety), an Integrated Project under the 6th framework programme of the European Commission (IP 516278). The book aims to provide an understanding of the fundamentals and details of the integration of risk-based approaches into the ship design process. The book facilitates the transfer of knowledge from recent research work to the wider maritime community and advances scientific approaches dealing with risk-based design and ship safety.

JOURNAL OF PETROLEUM TECHNOLOGY

OFFICIAL MONTHLY PUBLICATION OF THE PETROLEUM BRANCH, AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS

OFFSHORE PROCESSING OF CO2-RICH NATURAL GAS WITH SUPERSONIC SEPARATOR

MULTIPHASE SOUND SPEED, CO2 FREEZE-OUT AND HYSYS IMPLEMENTATION

Springer This book introduces a new and powerful approach based on rigorous process simulations conducted with professional simulators like HYSYS to predict the performance of supersonic separators (SS). The book addresses the utilization of SSs for the offshore processing of CO2-rich natural gas as an alternative to Joule-Thomson expansion, glycol absorption, membrane permeation and chemical absorption. It describes and analyzes the conventional offshore processing of CO2-rich natural gas, discussing the advantages of SS in terms of cost and power consumption. The book offers a comprehensive framework for modeling SS units, describing the physical principles of SS in detail. The thermodynamic multiphase sound speed is also discussed at the light shed by a classical analysis based on the Landau Model of phase transitions. A complete framework is presented for modelling and simulating SS units within HYSYS environment. A special chapter is dedicated to the performance of SSs for removing CO2 from CO2-rich natural gas, taking into account the limitations of CO2 freeze-out in various scenarios of gas feed in terms of CO2 content, pressure and temperature.

CONSTRUCTION IN GEOTECHNICAL ENGINEERING

PROCEEDINGS OF IGC 2018

Springer Nature This volume comprises select papers presented during the Indian Geotechnical Conference 2018. This volume discusses construction challenges and issues in geotechnical engineering. The contents cover foundation design and analysis, issues related to geotechnical structures, including dams, retaining walls, embankments and pavements, and rock mechanics and construction in rocks and rocky environments. Many of the papers discuss live case studies related to important geotechnical engineering projects worldwide, providing useful insights into

the realistic designs and constructions. This volume will be of interest to students, researchers and practitioners alike.

PROGRESS IN THE ANALYSIS AND DESIGN OF MARINE STRUCTURES

PROCEEDINGS OF THE 6TH INTERNATIONAL CONFERENCE ON MARINE STRUCTURES (MARSTRUCT 2017), MAY 8-10, 2017, LISBON, PORTUGAL

CRC Press Progress in the Analysis and Design of Marine Structures collects the contributions presented at MARSTRUCT 2017, the 6th International Conference on Marine Structures (Lisbon, Portugal, 8-10 May 2017). The MARSTRUCT series of Conferences started in Glasgow, UK in 2007, the second event of the series having taken place in Lisbon, Portugal in March 2009, the third in Hamburg, Germany in March 2011, the fourth in Espoo, Finland in March 2013, and the fifth in Southampton, UK in March 2015. This Conference series deals with Ship and Offshore Structures, addressing topics in the areas of: - Methods and Tools for Loads and Load Effects - Methods and Tools for Strength Assessment - Experimental Analysis of Structures - Materials and Fabrication of Structures - Methods and Tools for Structural Design and Optimisation, and - Structural Reliability, Safety and Environmental Protection Progress in the Analysis and Design of Marine Structures is essential reading for academics, engineers and all professionals involved in the design of marine and offshore structures.

PRODUCED WATER

ENVIRONMENTAL RISKS AND ADVANCES IN MITIGATION TECHNOLOGIES

Springer Science & Business Media A state-of-the-art review of scientific knowledge on the environmental risk of ocean discharge of produced water and advances in mitigation technologies. In offshore oil and gas operations, produced water (the water produced with oil or gas from a well) accounts for the largest waste stream (in terms of volume discharged). Its discharge is continuous during oil and gas production and typically increases in volume over the lifetime of an offshore production platform. Produced water discharge as waste into the ocean has become an environmental concern because of its potential contaminant content. Environmental risk assessments of ocean discharge of produced water have yielded different results. For example, several laboratory and field studies have shown that significant acute toxic effects cannot be detected beyond the "point of discharge" due to rapid dilution in the receiving waters. However, there is some preliminary evidence of chronic sub-lethal impacts in biota associated with the discharge of produced water from oil and gas fields within the North Sea. As the composition and concentration of potential produced water contaminants may vary from one geologic formation to another, this conference also highlights the results of recent studies in Atlantic Canada.

SAFETY AND RELIABILITY OF COMPLEX ENGINEERED SYSTEMS

ESREL 2015

CRC Press Safety and Reliability of Complex Engineered Systems contains the Proceedings of the 25th European Safety and Reliability Conference, ESREL 2015, held 7-10 September 2015 in Zurich, Switzerland. It includes about 570 papers accepted for presentation at the conference. These contributions focus on theories and methods in the area of risk, safety and

SOIL BEHAVIOUR AND CRITICAL STATE SOIL MECHANICS

Cambridge University Press Soils can rarely be described as ideally elastic or perfectly plastic and yet simple elastic and plastic models form the basis for the most traditional geotechnical engineering calculations. With the advent of cheap powerful computers the possibility of performing analyses based on more realistic models has become widely available. One of the aims of this book is to describe the basic ingredients of a family of simple elastic-plastic models of soil behaviour and to demonstrate how such models can be used in numerical analyses. Such numerical analyses are often regarded as mysterious black boxes but a proper appreciation of their worth requires an understanding of the numerical models on which they are based. Though the models on which this book concentrates are simple, understanding of these will indicate the ways in which more sophisticated models will perform.

GUIDELINES FOR THE AVOIDANCE OF VIBRATION INDUCED FATIGUE IN PROCESS PIPEWORK