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Get full access to Cathodic Corrosion Protection Systems and 60K+ other titles, with free 10-day trial of O'Reilly. There's also live online events, interactive content, certification prep materials, and more. Corrosion is a naturally occurring cost, worth billions in the oil and gas sector. New regulations, stiffer penalties for non-compliance and aging assets are all leading companies to develop new technology, procedures and bigger budgets catering to one prevailing method of prevention, cathodic protection. Cathodic Corrosion Protection Systems: A Guide for Oil and Gas Industries trains on all the necessary reports, inspection criteria, corrective measures and critical standards needed on various oil and gas equipment, structures, tanks, and pipelines. Demands in the cathodic protection market have driven development for better devices and methods, helping to prolong the equipment and pipeline's life and integrity. Going beyond just looking for leaks, this handbook gives the engineer and manager all the necessary tools needed to put together a safe cathodic protection system, whether it is for buried casing while drilling, offshore structures or submarine pipelines. Understand how to install, inspect and engage the right cathodic protection systems for various oil and gas equipment, tanks, and pipelines Properly construct the right procedure and anodes with all relevant US and International standards that apply Gain knowledge concerning techniques, equipment, measurements and test methods used in real-world field scenarios This handbook discusses and reviews the most recent trends in cathodic protection of metallic structures such as pipelines and buried tanks, widely used in many strategic industries such as petroleum, petrochemical, chemical applications. It contains very important practical points about designing, calculations, installation, performance, maintenance, and troubleshooting of the cathodic protection systems. In sections 1 and 2, metals corrosion and processes and corrosion electrochemical theories and cathodic protection of the materials are discussed. Section 3 examines cathodic protection criteria, unpleasant consequences of cathodic protection under and above allowable levels. In section 4, field measurements and evaluations of cathodic protection as well as cathodic protection design are explored. Section 5 addresses necessary precautionary actions in cathodic protection with special emphasis on the interfering cases and their controlling techniques. In section 6, after study of cathodic protection through applying electricity (impressed) current, designing principles, calculations, installation, and properties of all materials utilized in the technique are assessed. Section 7 discusses cathodic protection through sacrificial anodes, designing principles, calculations, installation, performance, and properties of all consumed materials. Section 8 introduces illustrated practical samples for cathodic protection of the structures. Section 9 addresses some challenges and problems associated with the design of cathodic protection systems and the possible approaches for solving and then analyzing them. Section 10 focuses on the practical techniques for installation and execution of cathodic protection systems. Section 11 contains very important recommendations and advices about inspections and precise adjustment of cathodic protection systems. Section 12 is allocated to practical and principal approaches for maintaining and monitoring of the cathodic protection systems. The authors of this book will provide a list of the most advanced remarks and approaches for the development of cathodic protection science in a practical and applicable manner for serving many strategic industries such as petroleum and petrochemical. It is an important source for corrosion scientists and engineers. Alireza Bahadori, Ph.D., CEng, MChemE, CPEng, MIEAust, NER, RPEQ is a research staff member in the School of Environment, Science and Engineering at Southern Cross University, Lismore, NSW, Australia. He received his Ph.D. from Curtin University, Perth, Western Australia. During the past twenty years, Dr. Bahadori has held various process and petroleum engineering positions and was involved in many large-scale projects at National Iranian Oil Co. (NIOC), Petroleum Development Oman (PDO), and Clough AMEC PTY LTD. He is the author of several articles and books. His books have been published by multiple major publishers, including Elsevier. Dr. Bahadori is the recipient of the highly competitive and prestigious Australian Government's Endeavor International Postgraduate Research Award as part of his research in oil and gas area. He also received a Top-Up Award from the State Government of Western Australia through Western Australia Energy Research Alliance (WA-ERA) in 2009. Dr. Bahadori is a chartered engineer (CEng) and chartered member of the Institution of Chemical Engineers (IChemE), a Chartered Professional Engineer (CPEng) and chartered member of Institution of Engineers Australia, a national engineering register of Engineers Australia (NER) and a registered professional engineer of Queensland, RPEQ. You're Reading a Free Preview Page 10 is not shown in this preview. You're Reading a Free Preview Pages 16 to 33 are not shown in this preview. You're Reading a Free Preview Pages 39 to 49 are not shown in this preview. You're Reading a Free Preview Pages 55 to 82 are not shown in this preview. You're Reading a Free Preview Page 87 is not shown in this preview. Loading... Book sale: save up to 25% on individual print and eBooks with free delivery. No promo code needed. More details Corrosion is a naturally occurring cost, worth billions in the oil and gas sector. New regulations, stiffer penalties for non-compliance and aging assets are all leading companies to develop new technology, procedures and bigger budgets catering to one prevailing method of prevention, cathodic protection. Cathodic Corrosion Protection Systems: A Guide for Oil and Gas Industries trains on all the necessary reports, inspection criteria, corrective measures and critical standards needed on various oil and gas equipment, structures, tanks, and pipelines. Demands in the cathodic protection market have driven development for better devices and methods, helping to prolong the equipment and pipeline's life and integrity. Going beyond just looking for leaks, this handbook gives the engineer and manager all the necessary tools needed to put together a safe cathodic protection system, whether it is for buried casing while drilling, offshore structures or submarine pipelines. Understand how to install, inspect and engage the right cathodic protection systems for various oil and gas equipment, tanks, and pipelines Properly construct the right procedure and anodes with all relevant US and International standards that apply Gain knowledge concerning techniques, equipment, measurements and test methods used in real-world field scenarios Petroleum Engineers, Chemical Engineers, Maintenance Managers, Operation Managers, Pipeline Engineers, Process Engineers, Safety Engineers, Refinery Managers, Graduate level engineering students Dedication Preface Acknowledgments 1. Principle of Electrochemical Corrosion and Cathodic Protection1.1. Behavior of Buried or Immersed Metals in the Absence of CP1.2. 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Installation in Hazardous Atmospheres Additional List of Reading on Retrofitting Glossary of Terms Index No. of pages: 492Language: EnglishCopyright: © Gulf Professional Publishing 2014Published: July 5, 2014Imprint: Gulf Professional PublishingBook ISBN: 9780128003794Hardcover ISBN: 9780128002742Alireza Bahadori, PhD, CEng, MChemE, CPEng, MIEAust, RPEQ, NER is a research staff member in the School of Environment, Science and Engineering at Southern Cross University, Lismore, NSW, Australia, and managing director and CEO of Australian Oil and Gas Services, Pty. Ltd. He received his PhD from Curtin University, Perth, Western Australia. During the past twenty years, Dr. Bahadori has held various process and petroleum engineering positions and was involved in many large-scale oil and gas projects. His multiple books have been published by multiple major publishers, including Elsevier. He is Chartered Engineer (CEng) and Chartered Member of Institution of Chemical Engineers, London, UK (MChemE), Chartered Professional Engineer (CPEng) and Chartered Member of Institution of Engineers Australia, Registered Professional Engineer of Queensland (RPEQ), Registered Chartered Engineer of Engineering Council of United Kingdom and Engineers Australia's National Engineering Register (NER).Research Staff Member, School of Environment, Science, and Engineering, Southern Cross University, Lismore, NSW, AustraliaWrite a reviewThere are currently no reviews for "Cathodic Corrosion Protection Systems"

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