

Preface

Human factors in energy that focus on the oil, gas, nuclear, and electric power industries aims to address the critical application of human factors knowledge to the design, construction, and operation of oil and gas assets, to ensure that systems are designed in a way that optimizes human performance and minimizes risks to health, personal or process safety, or environmental performance. The conference focuses on delivering significant value to the design and operation of both onshore and offshore facilities. Energy companies study the role of human behavior for safety and accident prevention; however, third party providers and different operators have different standards and different expectations. While oil and gas exploration and production activities are carried out in hazardous environments in many parts of the world, offshore engineers are increasingly taking human factors into account when designing oil and gas equipment. Human factors such as machinery design, facility and accommodation layout, and the organization of work activities have been systematically considered over the past twenty years on a limited number of offshore facility design projects to minimize the occupational risks to personnel, support operations and maintenance tasks, and improve personnel well-being. Better understanding for human factors issues also support the nuclear industry's move from analog to digital control rooms. Human considerations like lighting, temperature, even ergonomics, play important parts in the design. This book will be of special value to a large variety of professionals, researchers, and students in the broad field of energy modeling and human performance. The book is organized into four sections.

Section 1: Reducing Human Error Through Situation Awareness, Training, and Simulations

Section 2: Applying Human Factors: Building Better Processes, Procedures, and Organizations in Energy

Section 3: Human Factors in Energy

Section 4: Simulation and Interface Design for Safety Focused Research

This book will be of special value to a large variety of professionals, researchers, and students in the broad field of energy research, error prevention, and human performance who are interested in situation awareness, training, and simulations. We hope this book is informative, but even more—that it is thought-provoking. We hope it inspires, leading the reader to contemplate other questions, applications, and potential energy solutions in creating good designs for all.

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