

Risk Governance of Offshore Oil and Gas Operations

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RISK GOVERNANCE OF OFFSHORE OIL AND GAS OPERATIONS

This book evaluates and compares risk regulation and safety management for offshore oil and gas operations in the United States, United Kingdom, Norway, and Australia. It provides an interdisciplinary approach with legal, technological, regulatory, behavioral, and sociological perspectives on these efforts to prevent major accidents and improve safety performance offshore. Presented in three parts, the book begins with discussion of the concept of risk governance, the role and modes of safety regulation, and the behavioral and other factors involved in developing an effective regulatory regime for industrial safety. It then discusses the four regimes for offshore safety, the industry's role, cultural and other contextual influences, and use of safety performance indicators. The final section focuses on the Norwegian regime, which features self-regulation and worker rights, and its capacity to respond to new offshore technologies, emerging risks, near-miss incidents, and other challenges. Discussion throughout the book provides insights about differing types of rules, inspection methods, enforcement, and other issues relevant to the quest for robust regulation and the development of a safety culture for preventing major accidents offshore. This book will be informative for those in government, industry, academia, and elsewhere in society who are interested in industrial safety in general and offshore safety in particular.

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xii Contributors

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Contributors xiii

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xiv Contributors

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Preface

Modern society is increasingly dependent on technological strength and its careful application by complex enterprises to ensure public well-being and the achievement of other important goals. A prime example is the use of new technologies to meet global energy needs that are essential for the fulfillment of these goals.

The exploration and production of offshore oil and gas resources have become important means of meeting global energy needs. More than 90 percent of the oil and gas produced by EU member states and Norway is now derived from offshore production, mainly in the North Sea and the Norwegian Sea. Offshore operations also account for a substantial part of the oil and gas produced by the United States and Australia and are of growing importance to Canada, Brazil, and many other countries.

These offshore activities involve sophisticated analytic methods, heavy engineering, large-scale investment, and complex projects, and they must be managed appropriately to ensure that benefits are gained without incurring major accidents and other unacceptable harms to the public, the workers involved, and the human and natural environments. This requires partnership between public regulators and industry, the involvement of labor and other stakeholders, a supporting role for researchers, mutual trust that best practices will be used and continuously improved, and much more.

However, major accidents such as the Macondo blowout and oil spill in the Gulf of Mexico in 2010 demonstrate that simultaneously ensuring productivity and safety is a major challenge, particularly in deepwater regions and other difficult locales. To meet this challenge, leading countries have developed regulatory regimes that differ in several respects, particularly with regard to supervising and fostering self-regulation by industry, and all are engaged in a continuing quest for increasingly robust regulation.

From economic, environmental, and safety perspectives, the robustness of the regulatory regimes that govern the safety of offshore activities is of critical importance

xvi Preface

to all. In this regard, the research community plays a key role by contributing knowledge from many disciplines, which can improve the performance of the regimes and the offshore industry.

This book is the result of a common effort by a select group of researchers over several years. Their research and its integration has been enabled by a major research project, "Robust Regulation in the Petroleum Sector," which has been funded by the Research Council of Norway. The aim of the project has been to provide knowledge that can be used to develop and support robust regulation and inclusive risk governance for the complex and dynamic field of offshore oil and gas operations by addressing four objectives:

- conceptualization and better understanding of the resilience of the Norwegian risk regulation regime, which many other countries look to as a model;
- comparison of the Norwegian regime with other leading regimes to further improvements in an international context;
- examination of the interface between a regulatory regime and industrial safety management systems; and
- dissemination of research-based knowledge to promote learning about robust risk regulation and the challenges involved in its implementation.

The Macondo disaster in 2010 increased the significance of the project because it put the quest for robust regulation on the public agenda in all countries with offshore oil and gas resources. This led the core group of Norwegian researchers to extend their project by inviting researchers from the United Kingdom, United States, Germany, and Australia to join them and produce results of international relevance.

Finally, we believe this book demonstrates the value of learning from various disciplines and from safety research done in other technological and industrial domains, and we believe it provides knowledge in return and hope it contributes to risk reduction and improved safety performance in offshore operations and these other domains.

Preparing this book has been an inspiring and learning process. We are thankful for the cooperation of the contributing authors and of Cambridge University Press, as well as for the financial support of the Research Council of Norway.

Contents

List of Contributors		page xi
Prej	face	XV
	Introduction: In Search of Robustness Michael Baram, Preben Hempel Lindøe, and Ortwin Renn	1
	1.1 Offshore Safety	1
	1.2 The Quest for Robust Regulation	2
	1.3 This Book	4
Introduction: In Search of Robustness Michael Baram, Preben Hempel Lindøe, and Ortwin Renn 1.1 Offshore Safety 1.2 The Quest for Robust Regulation 1.3 This Book PART I REGULATORY FRAMEWORKS AND CONCEPTS 1 A Generic Model for Risk Governance: Concept and Application to Technological Installations Ortwin Renn 1.1 Introduction 1.2 Pre-Estimation 1.3 Interdisciplinary Risk Estimation 1.4 Risk Evaluation 1.5 Risk Management 1.6 Risk Communication and Participation 1.7 Conclusions 2 Modes of Risk Regulation for Prevention of Major Industrial Accidents Michael Baram and Preben Hempel Lindøe 2.1 Introduction 2.2 Social Control of Hazardous Industrial Activities	7	
1	to Technological Installations	9
	1.1 Introduction	9
	1.2 Pre-Estimation	12
	1.3 Interdisciplinary Risk Estimation	14
	1.4 Risk Evaluation	17
		19
		25
	1.7 Conclusions	29
2		
		34
		34
		35
	2.3 Modes of Regulation for Preventing Major Accidents	40

vi Contents

	2.4 Legitimacy, Accountability, and Legality	47
	2.5 Conclusion	53
3	Values and Norms – A Basis for a Safety Culture	56
	Kathryn Mearns	
	3.1 Introduction	56
	3.2 Values, Norms, Attitudes, and Beliefs	57
	3.3 The Role of Values and Norms in Safety Culture	58
	3.4 Societal Culture: The Bedrock of Safety Culture?	61
	3.5 The Role of National Culture on Safety Culture and Safety	
	Performance	63
	3.6 National Culture and Safety in Other Industries	64
	3.7 National Culture and Safety Culture in the Oil and Gas	
	Industry	65
	3.8 National Culture, Safety Climate, and Safety Performance	67
	3.9 Other Influences on Safety Culture	70
	3.10 Safety Culture in Air Traffic Management (ATM): Are The	re
	Lessons to Be Learned?	71
	3.11 Conclusion	75
4	Optimising Offshore Health and Safety Inspections: How the	
	Markets Could Help	78
	Emre Üşenmez	,
	4.1 Introduction	78
	4.2 Scarce Resources	79
	4.3 Recurring Theme	82
	4.4 Transferring Responsibility	87
	4.5 Optimisation of Decision Making	91
	4.6 Group-Based Forecasting Methods	92
	4.7 Drawbacks	95
	4.8 The Five Methods and Risk Management	99
	4.9 Final Comments	100
	PART II REGULATORY REGIMES: NORWAY, UNITED KINGDOM,	
	UNITED STATES, AND AUSTRALIA	101
5	Safety Regulation on the Norwegian Continental Shelf	103
	Knut Kaasen	
	5.1 Introduction	103

Contents vii

	5.2 The Problem of Jurisdiction5.3 State Safety Management: The Structure of the Safety	109
	Regulation	112
	5.4 The 2010 Framework Regulations and the Pursuant Regulations	114
	5.5 State Safety Control	123
	5.6 Industry Safety Management	127
	5.7 The Link between State and Industry Safety Management	130
6	Health and Safety Regulation on the UK Continental Shelf:	
	Evolution and Future Prospects	132
	John Paterson	
	6.1 Introduction	132
	6.2 The Evolution of Offshore Health and Safety Regulation on the	
	United Kingdom Continental Shelf	133
	6.3 Experience with the Safety Case Approach	144
	6.4 Macondo and the Possibility of a New European Directive	147
	6.5 Conclusion	151
7	The U.S. Regulatory Regime for Preventing Major Accidents in	
	Offshore Operations	154
	Michael Baram	
	7.1 Introduction	154
	7.2 Context	155
	7.3 Risks	161
	7.4 Legal Framework	166
	7.5 Regulation	171
	7.6 New Regime	180
	7.7 Conclusion	186
8	A New Policy Direction in Australian Offshore Safety Regulation	188
	Jan Hayes	
	8.1 Introduction	188
	8.2 The Montara Blowout	189
	8.3 Organisational Factors	192
	8.4 Controlling the Potential for Accidents	198
	8.5 Incorporating Organisational Issues into Offshore Safety	
	Legislation	203
	8.6 Preventing Another Montara	207
	8.7 Conclusions	208

viii Contents

9	Safety Indicators Used by Authorities in the Petroleum Industry of	
5	the United Kingdom, the United States and Norway	212
	Helene Cecilie Blakstad	
	9.1 Introduction	212
	9.2 Challenges of Performing Comparison between Countries	213
	9.3 General Status of Indicators in the United Kingdom, the	
	United States and Norway	218
	9.4 Discussion and Conclusions	236
	PART III NORWEGIAN SELF-REGULATION: CHALLENGES AND	
	LESSONS LEARNED	241
10	Government-Enforced Self-Regulation: The Norwegian Case	243
	Paul Bang and Olaf Thuestad	
	10.1 Introduction	24 3
	10.2 The Regulatory Response	244
	10.3 The Paradigm Shift	246
	10.4 New Regulatory Approach to Safety and the Working	
	Environment	250
	10.5 Challenges in a Government-Supervised Self-Regulation	
	Regime	259
	10.6 The Monitoring Program (RNNP)	264
	10.7 Criteria for Success	268
11	Contested Terrains in Risk Regulation: Legitimacy Challenges	
	in Implementation Processes	274
	Jacob Kringen	
	11.1 Introduction	274
	11.2 Perspectives and Concepts	275
	11.3 The Regulatory System in the Normal State	278
	11.4 Testing Boundaries and Challenging Accountability	287
	11.5 Discussion	297
	11.6 Conclusion	303
12	Boxing and Dancing: Tripartite Collaboration as an Integral Part	
	of a Regulatory Regime	309
	Ragnar Rosness and Ulla Forseth	
	12.1 Introduction: A Regulatory Regime That Works in Practice But	
	Not in Theory?	309
	12.2 A Major Accident That Never Happened	210

Contents ix

	12.3 Conceptualising a Regulatory Regime as an Actor-Network	310
	12.4 Tracing Translation Efforts through Discourse Analysis	311
	12.5 Data and Methods	312
	12.6 Results	313
	12.7 Discussion	327
	12.8 Conclusions	335
13	Emergent Risk and New Technologies	340
	Ole Andreas Engen	
	13.1 Introduction	340
	13.2 Governance Structure, Institutional Mechanisms and	
	Regulation	341
	13.3 The Industrial Policy and Regulation in the Condeep Era	343
	13.4 The NORSOK Process and the Technological Transformation	
	of the North Sea	347
	13.5 Final Remarks	356
14	Near Major Accidents: A Challenge for the Regulator and the	
	Regulated	360
	Ole Andreas Engen	
	14.1 Introduction	360
	14.2 Underlying Organisational Factors	361
	14.3 The Incidents in Merging Surroundings	363
	14.4 Underlying Factors at Snorre A	368
	14.5 Underlying Factors at Gullfaks C	370
	14.6 The Relationship between Snorre A and Gullfaks C	373
	14.7 Discussion	376
	14.8 Conclusions	379
5	Inspections, Independence and Intelligence	382
	Helge Ryggvik	
	15.1 Introduction	382
	15.2 U.S. Inspections	384
	15.3 Norwegian Audits and Inspection	388
	15.4 Inspections in October 2009	390
	15.5 Statements of Compliance, Consents and Actors' Evaluations	395
	15.6 The Enforcement Regime	397
	15.7 Criteria for Attention	399
	15.8 Conclusions	401

x Contents

16	Advancing Robust Regulation: Reflections and Lessons to		
	Be Learned		403
	Andrew Hale		
	16.1	Introduction: Objectives and Structure	403
	16.2	The Characteristic of the Offshore Oil and Gas Industry and	
		Its Regulation in Relation to Renn's Framework	406
	16.3	Comparing the Regimes	408
	16.4	Challenges, Learning and Change	418
	16.5	Conclusions	420
Ind	гх		425