

Cambridge University Press

978-1-107-02554-7 - Risk Governance of Offshore Oil and Gas Operations

Edited by Preben Hempel Lindøe, Michael Baram and Ortwin Renn

Table of Contents

[More information](#)

Contents

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

Cambridge University Press

978-1-107-02554-7 - Risk Governance of Offshore Oil and Gas Operations

Edited by Preben Hempel Lindøe, Michael Baram and Ortwin Renn

Table of Contents

[More information](#)

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 There 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

Cambridge University Press

978-1-107-02554-7 - Risk Governance of Offshore Oil and Gas Operations

Edited by Preben Hempel Lindøe, Michael Baram and Ortwin Renn

Table of Contents

[More information](#)

<i>Contents</i>		vii
5.2	The Problem of Jurisdiction	109
5.3	State Safety Management: The Structure of the Safety 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

Cambridge University Press

978-1-107-02554-7 - Risk Governance of Offshore Oil and Gas Operations

Edited by Preben Hempel Lindøe, Michael Baram and Ortwin Renn

Table of Contents

[More information](#)

viii

Contents

9	Safety Indicators Used by Authorities in the Petroleum Industry of 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	243
	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 Kringsen	
	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	310

Cambridge University Press

978-1-107-02554-7 - Risk Governance of Offshore Oil and Gas Operations

Edited by Preben Hempel Lindøe, Michael Baram and Ortwin Renn

Table of Contents

[More information](#)

<i>Contents</i>		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
15	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

Cambridge University Press

978-1-107-02554-7 - Risk Governance of Offshore Oil and Gas Operations

Edited by Preben Hempel Lindøe, Michael Baram and Ortwin Renn

Table of Contents

[More information](#)

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
<i>Index</i>	425