SpringerBriefs in Applied Sciences and **Technology**

Safety Management

Series Editors

Eric Marsden, Toulouse, France Caroline Kamaté, Toulouse, France François Daniellou, Toulouse, France The SpringerBriefs in Safety Management present cutting-edge research results on the management of technological risks and decision-making in high-stakes settings.

Decision-making in high-hazard environments is often affected by uncertainty and ambiguity; it is characterized by tradeoffs between multiple, competing objectives. Managers and regulators need conceptual tools to help them develop risk management strategies, establish appropriate compromises and justify their decisions in such ambiguous settings. This series weaves together insights from multiple scientific disciplines that shed light on these problems, including organization studies, psychology, sociology, economics, law and engineering. It explores novel topics related to safety management, anticipating operational challenges in high-hazard industries and the societal concerns associated with these activities.

These publications are by and for academics and practitioners (industry, regulators) in safety management and risk research. Relevant industry sectors include nuclear, offshore oil and gas, chemicals processing, aviation, railways, construction and healthcare. Some emphasis is placed on explaining concepts to a non-specialized audience and the shorter format ensures a concentrated approach to the topics treated

More information about this series at http://www.springer.com/series/15119

Gilles Motet · Corinne Bieder Editors

The Illusion of Risk Control

What Does it Take to Live With Uncertainty?



Editors
Gilles Motet
INSA. LAAS-CNRS
Université de Toulouse
Toulouse
France

Corinne Bieder Ecole Nationale de l'Aviation Civile (ENAC) Toulouse France



 ISSN 2191-530X
 ISSN 2191-5318 (electronic)

 SpringerBriefs in Applied Sciences
 and Technology

 ISSN 2520-8004
 ISSN 2520-8012 (electronic)

 Safety Management
 ISBN 978-3-319-32938-3

 DOI 10.1007/978-3-319-32939-0
 ISBN 978-3-319-32939-0 (eBook)

Library of Congress Control Number: 2016939387

© The Editor(s) (if applicable) and The Author(s) 2017. This book is an open access publication **Open Access** This book is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this book are included in the book's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the book's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Contents

I	Gilles Motet	1
2	Uncertainty—Its Ontological Status and Relation to Safety Ove Njå, Øivind Solberg and Geir Sverre Braut	5
3	A Conceptual Foundation for Assessing and Managing Risk, Surprises and Black Swans	23
4	Recognizing Complexity in Risk Management: The Challenge of the Improbable	41
5	Practices in the Danger Culture of Late Industrial Society Arie Rip	57
6	Judicial Review of Uncertain Risks in Scientific Research Eric E. Johnson	67
7	What Can Japan's Early Modern Capital of Edo Teach Us About Risk Management? Jordan Sand	87
8	Conclusion	107