

1. Record Nr.	UNINA9910554881503321
Autore	Fiorentini Luca <1976->
Titolo	Bow-tie industrial risk management across sectors : a barrier based approach / / Luca Fiorentini
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , [2022] ©2022
ISBN	1-119-52367-2 1-119-52382-6 1-119-52385-0
Descrizione fisica	1 online resource (481 pages)
Disciplina	658.15/5
Soggetti	Risk management Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- List of Figures -- List of Tables -- Preface 1 -- Preface 2 -- Preface 3 -- Preface 4 -- Preface 5 -- Preface 6 -- Preface 7 -- Preface 8 -- Author Preface -- Acknowledgements -- Chapter 1 Introduction to Risk and Risk Management -- 1.1 Risk Is Everywhere, and Risk Management Became a Critical Issue in Several Sectors -- 1.2 ISO 31000 Standard -- 1.2.1 The Principles of RM -- 1.3 ISO 31000 Risk Management Workflow -- 1.3.1 Leadership and Commitment -- 1.3.2 Understanding the Organization and Its Context -- 1.3.3 Implementation of the RM Framework -- 1.3.4 The Risk Management Process -- 1.3.5 Relationship between the RM Principles, Framework, and Process -- 1.3.6 Evaluating and Improving the RM Framework -- 1.3.7 The Risk Assessment Phase -- 1.3.8 Risk Identification -- 1.3.9 Risk Analysis -- 1.3.10 Analysis of Control Barriers -- 1.3.11 Consequences Analysis -- 1.3.12 Frequency Analysis and Probability Estimation -- 1.3.13 Preliminary Analysis -- 1.3.14 Uncertainty and Sensitivity of the Analysis -- 1.3.15 Risk Evaluation -- 1.3.16 Acceptability and Tolerability Criteria of the Risk -- 1.3.17 The Risk Matrix -- 1.3.18 The ALARP Study -- 1.3.19 Risk Management over Time -- 1.3.20 Risk

Treatment -- 1.3.21 Monitoring and Review -- 1.3.22 Audit Activities
 -- 1.3.23 The System Performance Review -- 1.4 Uncertainty
 and the Human Factor -- 1.4.1 Performance-Shaping Factors -- 1.5
 Enterprise Complexity and (Advanced) Risk Management (ERM) -- 1.6
 Proactive and Reactive Culture of Organizations Dealing with Risk
 Management -- 1.6.1 Risk Management between Fulfilment
 and Opportunity -- 1.6.2 Quality of Risk Management -- 1.6.3 The
 Pathological Condition -- 1.6.4 The Reactive Condition -- 1.6.5 The
 Bureaucratic Condition -- 1.6.6 The Proactive Condition -- 1.6.7 The
 Generative Condition.
 1.7 A Systems Approach to Risk Management -- 1.7.1 ISO 9001
 (Quality) / ISO 45001 (Occupational health and safety) / ISO 14001
 (Environment) -- 1.7.2 Industrial Safety (Major Accidents) -- 1.7.3
 Functional Safety and RAGAGEP Standards -- 1.7.4 ISO 55000 (Asset
 Management and Integrity) -- 1.7.5 ISO 22301 (Business Continuity) --
 1.7.6 ISO IEC 27001 (Information Security) -- 1.7.7 ISO 19011 (Audit)
 -- 1.7.8 ISO 39001 (Road Traffic Safety) -- 1.7.9 ISO 19600
 (Compliance Management Systems) -- Chapter 2 Bow-Tie Model -- 2.1
 Hazards and Risks -- 2.2 Methods of Risk Management -- 2.2.1 Risk
 Identification -- 2.2.2 Risk Analysis -- 2.2.3 Barrier-Based Methods --
 2.2.4 Risk Evaluation -- 2.3 The Bow-Tie Method -- 2.4 The Bow-Tie
 Method and the Risk Management Workflow from ISO 31000 -- 2.5
 Application of Bow-Ties -- Project: Disposal of a Data Center -- 2.6
 Level of Abstraction -- 2.7 Building a Bow-Tie -- 2.8 Hazards -- 2.9
 Top Events -- 2.10 Threats -- 2.11 Consequences -- 2.12 Barriers --
 2.12.1 Primary Barriers -- 2.13 Escalation Factors and Associated
 Barriers -- 2.13.1 Secondary Barriers -- 2.14 Layer of Protection
 Analysis (LOPA): A Quantified Bow-Tie to Measure Risks -- 2.14.1 How
 to Build a LOPA Assessment -- 2.14.2 AIChE CCPS Guidelines -- 2.14.3
 Conditional Modifiers and Enabling Factors -- 2.15 Bow-Tie as a
 Quantitative Method to Measure Risks and Develop a Dynamic
 Quantified Risk Register -- 2.15.1 LOPA Analysis in Bow-Tie -- 2.16
 Advanced Bow-Ties: Chaining and Combination -- Chapter 3 Barrier
 Failure Analysis -- 3.1 Accidents, Near-Misses, and Non-Conformities
 in Risk Management -- 3.2 The Importance of Operational Experience
 -- 3.3 Principles of Accident Investigation -- 3.4 The Barrier Failure
 Analysis (BFA) -- 3.4.1 Event -- 3.4.2 Timeline -- 3.4.3 Barriers --
 3.4.4 Causation Path and Multi-Level Causes.
 3.5 From Root Cause Analysis (RCA) to BFA -- 3.5.1 Introduction
 to RCA -- 3.6 BFA from Bow-Ties -- Chapter 4 Workflows and Case
 Studies -- 4.1 Bow-Tie Construction Workflow with a Step-by-Step
 Guide -- 4.1.1 Case Study Anatomy -- 4.1.2 Case Study Taxonomy --
 4.1.3 Acceptability Criteria -- 4.1.4 Definition of Risk Matrices -- 4.1.5
 Diagram Construction -- 4.1.6 Versioning Activities and Track Changes
 -- 4.1.7 Terminology -- 4.1.8 Using Colors -- 4.1.9 Attach
 Documentation -- 4.1.10 Definition of Organizational Structure
 and Responsible Stakeholders -- 4.1.11 Defining Tasks -- 4.1.12 LOPA
 Analysis -- 4.1.13 Other Data -- 4.1.14 Extraction of Critical Barriers
 and Performance Standard Register -- 4.1.15 Bow-Tie Audit Activity --
 4.1.16 Work Organizational Schemes for Multi-Site Operations -- 4.2
 LOPA Construction Workflow with a Step-by-Step Guide -- 4.2.1
 Identification of Objectives -- 4.2.2 Identify the Consequence to Screen
 the Scenarios -- 4.2.3 Select an Accident Scenario -- 4.2.4 Identify
 the Initiating Event of the Scenario and Determine the Initiating Event
 Frequency -- 4.2.5 Identify the Independent Protection Layers -- 4.2.6
 Characterize the IPLs in Terms of Probability of Failure on Demand --
 4.2.7 Estimate the Risk -- 4.2.8 Evaluate the Risk and Make Risk-Based
 Decisions -- 4.2.9 Consideration of Results -- 4.3 BFA Construction

Workflow with a Step-by-Step Guide -- 4.3.1 Fact-Finding -- 4.3.2
Event Chaining -- 4.3.3 Identifying Barriers -- 4.3.4 Assessing Barrier
State -- 4.3.5 Causation Analysis and Categories -- 4.3.6
Recommendations -- 4.3.7 Reporting -- 4.4 Worked Examples -- 4.4.1
Local Reduction of the Resisting Capacity of a Bridge due to Ageing -
Bow-Tie Risk Assessment -- 4.4.2 COVID-19 infection - Bow-Tie Risk
Assessment -- 4.4.3 Fire in Flight - Bow-Tie Risk Assessment -- 4.4.4
Food Contamination - Barrier Failure Analysis.
4.4.5 Web-Based Software Development - Bow-Tie Risk Assessment --
4.4.6 IT Operations - Bow-Tie Risk Assessment -- 4.4.7 Crowding
Bow-Tie Risk Assessment -- 4.4.8 Military Helicopter Operations Bow-
Tie Risk Assessment -- 4.4.9 Patient Safety Bow-Ties -- 4.4.10 Process
Safety Bow-Tie -- 4.4.11 Famous Process Industry Incidents Analyzed
with BFA -- 4.4.12 Drug Administration Bow-Ties -- 4.4.13
ThyssenKrupp Fire Investigation and Bow-Tie -- 4.4.14 Twente
Stadium Roof Collapse Tripod Beta Analysis -- 4.4.15 Water Treatment
Bow-Tie Analysis -- 4.4.16 Operational Experience Analysis Using BFA
-- 4.4.17 Fire Risk Assessment for Companies Managing Multiple
Assets -- 4.4.18 Fire Risk Assessment for Companies Managing
Multiple PV Plants -- Conclusions -- Appendix 1 Bow-Tie Easy Guide
-- Appendix 2 BFA Easy Guide -- Appendix 3 Human Error
and Reliability Assessment (HRA) -- Human Errors and Violations --
The Rasmussen Skills-Rules-Knowledge Model of Human Error -- Slips
and Lapses -- Mistakes -- Violations -- Reducing the Risk of Human
Error -- References and Further Reading -- Index -- EULA.
