HEALTH AND SAFETY MANAGEMENT

Principles and Best Practice

Colin W. Fuller and Luise H. Vassie



Health and Safety Management

Health and Safety Management

Table of Contents

Front Cover

Health and Safety Management

Contents

Preface

Acknowledgements

Part One Principles

The concept of risk

Introduction

Terminology and definitions in risk management

Risk

Risk management

Health and safety

Living with risk

Risk in modern society

Responsibilities for risk

Quantification of risks

Individuals and groups at risk

Individual risk

Occupational risk

Organisational risk

Societal risk

Acceptable and tolerable levels of risk

The principle of as low as reasonably practicable (ALARP)

Summary

Issues for review and discussion

References

Risk management



1 - 1	
Introc	luction
11111100	luction

World risks in context

Risk management

Defining acceptable levels of risk

Decision analysis

A risk management framework

Business continuity and disaster management

Business continuity management

Disaster management

Risk mitigation

Risk acceptance

Risk reduction

Risk management and corporate governance

Summary

Issues for review and discussion

References

Personality, behaviour and human error

Introduction

Personality and behaviour

Personality

Personality traits

Behaviour

Motivation and models of human needs

McClellands model

Maslows model

Rogerss model

Herzbergs model

A comparison of models of motivation

Behaviour modification

The role of cultural theories in risk management

Cultural theories of risk

The grid/group framework theory

Strengths and weaknesses of the cultural theory approach to risk management

Human error



Constant and random human errors

Types of human error

Human error recovery actions

Violation errors

Models of human error

Domino theory

Intentional and unintentional behaviours

Active and latent errors

Personality types

Error types

Accident proneness

Summary

Issues for review and discussion

References

Risk perception

Introduction

Perception

Physical perception

Cognitive perception

Risk perception

Cognitive or decision-making approach

Psychometric approach

Mental models approach

Situation versus individual

Factors affecting risk perception

Unknown and dread risks

Affiliation bias

Cognitive dissonance

Cultural theory and risk perception

Risk homeostasis and risk compensation

Risk homeostasis

Risk compensation

Summary

Issues for review and discussion



References

Risk communication

Introduction

Communication

Attitudes

Changing peoples attitudes and values

Attitude measurement

The communication process

Communicator

Message

Recipient

Situation

Communication strategy

The risk communication process

Level of fear

Emotive impact

Risk communication strategies

Ranking and comparing risks

Framing effects

Social amplification of risk

Trust and risk communication

Summary

Issues for review and discussion

References

Economic issues

Introduction

Economic principles

Positive and normative economics

Market economies

Microeconomics and macroeconomics

Financing a market economy

Supply and demand

Long-term average cost of production



Budget constraint and choice

Risk management and economics

Health and safety management and economics

The effect of externalities on health and safety management

Health and safety standards and economics

The impact of standards on the long-term average cost of production

The effect of a health and safety tax on performance

Selecting health and safety control measures within a budget constraint

Safety-benefit curves and budget constraints

Summary

Issues for review and discussion

References

Costbenefit analysis

Introduction

The role of costbenefit analysis in legislation and standards

Approach adopted in Europe

Approach adopted in the United Kingdom

Costbenefit approaches in decision-making

Subjective assessment

Informal judgement

Health and safety standards

Cost-effectiveness analysis

Costing risk and valuing safety

Decision analysis

Value of life

Valuation of a life

Valuation of non-fatal injuries and ill-health

Willingness to pay and willingness to accept

Permissive and restrictive approaches to valuation

Valuing dread and future risks

Comparing costs and benefits

Costs

Opportunity costs

Benefits



Discounting and net present values

Cost-effectiveness and costbenefit analyses

Cost-effectiveness analysis

Costbenefit analysis

Sensitivity analysis

Strengths and weaknesses of costbenefit analysis

Summary

Issues for review and discussion

References

Managing health and safety risks

Introduction

The general role of health and safety standards

Input standards

Workplace standards

Output standards

Acceptable standards of health and safety

Factors influencing standards of health and safety

Criteria used for defining standards

Setting standards

Standards in safety-critical applications

Absolute standards and relative standards

Tolerability of risk as a health and safety standard

The implications and application of standards based on the tolerability of risk

Health and safety management in the context of risk and business management

The holistic view of risk and business management

The impact of changing work patterns on health and safety management

Factors influencing the management of health and safety risks

Legal factors

Economic factors

Social factors

Intrinsic and extrinsic factors

Factors motivating proactive health and safety management

Summary

Issues for review and discussion



References

Part Two Best Practice

Regulatory models for managing health and safety

Introduction

The role of regulation in health and safety management

National legislative systems

Developed countries

Developing countries

Non-governmental regulation

International and national standards

Corporate governance

Challenges for health and safety regulation

Summary

Issues for review and discussion

References

Models for managing health and safety risks at the organisational level

Introduction

Principles of organisational management

Development of management theories

Management theory in practice

Organisational models for health and safety management

Development of standards for health and safety management

Health and safety management system standards

Summary

Issues for review and discussion

References

Risk assessment

Introduction

The purpose of risk assessment

The risk assessment process

Nature of risk

Context of risk



Probability of risk

Consequences of risk

Risk specification in health and safety management

Completing a risk assessment

Establishing the purpose of the risk assessment

Understanding the problems associated with the risk assessment

Defining the scale of the risk assessment

Developing models for the risk assessment

Obtaining data for the risk assessment

Carrying out the risk assessment

Communicating the results of the risk assessment

Risk assessment in an environment of uncertainty

The use of risk assessment in decision-making at government level

Recording the results of a risk assessment

General format

Safety case and safety report formats

Probability, reliability and maintainability

Probability and frequency

Reliability

Maintainability

Assessing organisational risks

Risk profiling

Risk acceptability in strategic decision-making

Assessing operational risks

Hazard and adverse event identification

Risk assessment

Summary

Issues for review and discussion

References

Risk control

Introduction

Safety culture and safety climate

Safety culture

Safety climate



Safety culture maturity model

Measurement of safety climate and culture

An integrated approach to risk control

Developing a risk control strategy

The hierarchy of controls principle

Designing safe plant and equipment

Inherently safe design principles

Lines of defence

The safety lifecycle

Safety-related control systems

Functional safety of safety-related systems

Safety integrity levels

A comparison of lines of defence and safety integrity levels

An organisations safe system of work

Corporate policy statement

Corporate protocols and guidance documents

Health and safety manuals

Employee handbooks

Safe operational procedures

Permits to work

Safety cases and safety reports

Accounting for people in a risk control strategy

The influence of human factors on work procedures

The influence of human factors on work design

The influence of employee work patterns

Influencing employees behaviours

Health surveillance and epidemiology

Health surveillance

Epidemiology

Occupational exposure standards

Summary

Issues for review and discussion

References

Training and competence



Introduction

Workforce competence, training and education

The learning process

Theories of learning

Experiential learning

Designing a training programme

Health and safety training

Summary

Issues for review and discussion

References

Performance measurement

Introduction

The principles of performance measurement

Developing performance indicators

Outcome measures

Measuring health and safety performance

Reactive performance measurement

Proactive performance measurement

Reporting health and safety performance

Summary

Issues for review and discussion

References

Auditing, benchmarking and continuous improvement

Introduction

The role of auditing

Internal and external auditing

Operational auditing

Compliance auditing

The audit process

Planning

Implementing

Evaluating and reporting

Audit risk



Format of an audit report

Health and safety auditing

Health and safety audit programmes

Strengths and weaknesses of auditing systems

Quality management

Total quality management

The link between TQM and organisational performance

Continuous improvement

Development of benchmarking

Defining benchmarking

The benchmarking process

Implementing the benchmarking process

Benchmarking health and safety management systems

Summary

Issues for review and discussion

References

Responsibility and accountability for health and safety

Introduction

Individual responsibility and accountability

Corporate responsibility for health and safety risks

Corporate social responsibility

Corporate commitment to health and safety management

Summary

References

Index

Back Cover

