# Process Safety at a Glance 2023

## CCPS Management Resource Tools

### Commit to Process Safety
- PS Leadership from the Boardroom to the Frontline
- G/L for Implementing Process Safety Management, 2nd ed.
- G/L for Process Safety in Outsourced Manufacturing Operations
- Local Emergency Planning Committee Guidebook
- Practical Compliance with the EPA Risk Management Program: A CCPS Concept Book
- Process Safety for Engineers: An Introduction, 2nd ed.

### Understand Hazards and Risks
- G/L for Process Safety During the Transient Operating Mode
- G/L for Facility Siting and Layout
- Recognizing and Responding to Normalization of Deviance
- G/L for Defining Process Safety Competency Requirements
- A Practical Approach to Hazard Identification for Operations and Maintenance Workers
- G/L for Chemical Process Quantitative Risk Analysis, 2nd ed.
- G/L for Chemical Transportation Safety, Security, and Risk Management, 2nd ed.
- G/L for Hazard Evaluation Procedures, 3rd ed.
- Layer of Protection Analysis
- G/L for Enabling Conditions and Conditional Modifiers in Layer of Protection Analysis
- Guidelines for Initiating Events and Independent Protection Layers in Layer of Protection Analysis
- Recognizing Catastrophic Incident Warning Signs in the Process Industries
- Process Safety in Upstream Oil and Gas

### Manage Risk
- G/L for Managing Abnormal Situations
- Bow Ties in Risk Management: A Concept Book for Process Safety
- Dealing with Aging Process Facilities and Infrastructure
- G/L for Integrating Management Systems and Metrics to Improve Process Performance
- Conduct of Operations and Operational Discipline
- G/L for Managing Process Safety Risks during Organizational Change
- G/L for Improving Plant Reliability through Data Collection and Analysis
- G/L for Asset Integrity Management
- G/L for Performing Effective Pre-Startup Safety Reviews
- G/L for Process Safety Documentation
- G/L for Technical Planning for On-Site Emergencies
- G/L for Managing Abnormal Situations
- G/L for Revalidating Process Hazard Analysis, 3rd ed.
- G/L for Analyzing and Managing the Security Vulnerabilities of Fixed Chemical Sites
- G/L for Writing Effective Operating and Maintenance Procedures
- Guide for Making Acute Risk Decisions
- Tools for Making Acute Risk Decisions

### Learn From Experience
- Book of Beacons, Online, Available to Members-only
- Driving Continuous Process Safety Improvements from Investigated Incidents
- G/L for Process Safety Metrics
- CCPS PS Metrics Guide for Leading and Lagging Indicators
- Effectively Using Metrics to Improve Process Safety Performance
- Process Safety Leading Indicators Industry Survey
- G/L for Acquisition Evaluation and Post Merger Integration
- G/L for Auditing Process Safety Management Systems, 2nd ed.
- G/L for Investigating Process Safety Incidents, 3rd ed.
- Incidents that Define Process Safety
- More Incidents that Define Process Safety

## CCPS Risk Based Process Safety Element

### Process Safety Culture
- Standards, Codes, Regulations, and Laws

### Process Safety Competency
- Workforce Involvement
- Stakeholder Outreach

### Process Knowledge Management
- Hazard Identification and Risk Analysis

## CCPS Technical Resources & Tools

### Software Applications
- Risk Analysis Screening Tool (RAST) and Chemical Hazard Engineering Fundamentals (CHEF)
- CCPS Glossary — aiche.org/ccps/resources/glossary
- CCPS Process Safety Incident Evaluation Tool (PSIE 2.0)
- CCPS Chemical Reactivity Worksheet Tool (CRW 4.0.3)
- Process Safety Incident Database
- Vision 20/20 Self-Assessment Tool
- RBPS Self-Assessment Tool

### VENTING AND EMERGENCY RELIEF
- Deflagration and Detonation Flame Arresters
- Emergency Relief Systems Design Using DIERS Technology
- G/L for Pressure Relief and Effluent Handling Systems
- Safe Design and Operation of Process Vents and Emission Control Systems

### Chemical Reactivity Hazards
- Essential Practices for Managing Chemical Reactivity Hazards
- G/L for Process Safety in Batch Reaction Systems, 2nd ed.
- G/L for Chemical Reactivity Evaluation and Application to Process Design, 2nd ed.
- G/L for Safe Storage and Handling of Reactive Materials

### Safe Design
- Handbook for Process Safety in Laboratories and Pilot Plants: A Risk Based Approach
- Continuous Monitoring for Hazardous Material Releases
- G/L for Engineering Design for Process Safety, 2nd ed.
- G/L for Integrating PS into Engineering Projects
- G/L for Fire Protection in Chemical, Petrochemical, and Hydrocarbon Processing Facilities
- G/L for Safe Warehousing of Chemicals

### Consequence Modeling
- G/L for Consequence Analysis of Chemical Releases
- G/L for Vapor Cloud Explosion, Pressure Vessel Burst, BLEVE, and Flash Fire Hazards, 2nd ed.
- Understanding Explosions
- Wind Flow and Vapor Cloud Dispersion at Industrial and Urban Sites
- G/L for Determining the Probability of Ignition of a Released Flammable Mass

### Bioprocess Safety
- G/L for Process Safety in Bioprocess Manufacturing Facilities

### Dust Explosion Hazards
- G/L for Safe Handling of Powders and Bulk Solids
- G/L for Combustible Dust Hazard Analysis

### Human Factors
- G/L for Preventing Human Error in Process Safety

### Automation
- Managing Cybersecurity in the Process Industries: A Risk-Based Approach
- G/L for Safe and Reliable Instrumented Protective Systems
- G/L for Safe Automation of Chemical Processes, 2nd ed.

## Additional Resources

- Find CCPS resources to meet your needs from the chart on this page. Additional information can be found at aiche.org/ccps
- Deep Search CCPS by searching for “CCPS” and keywords on Knovel.com
- Monograph Series
  - Safe Work Practices
  - Golden Rules of Process Safety for Specific Technologies
  - Key Principles of Process Safety
  - Handling Force Mejeure Events (Pandemic, Natural Disasters, etc.)
- Additional monographs can be found here: aiche.org/ccps/publications/process-safety-monographs
- CCPS Education
  - Courses, in-person, and virtual training covering various elements of Risk Based Process Safety are available at aiche.org/ccps/education
- Translated Materials
  - Mandarin, Japanese, Portuguese, Spanish and Italian versions available at aiche.org/ccps/QuickLinks
  - * Available in Spanish, Japanese, and/or Portuguese
  - ** Available in Chinese