



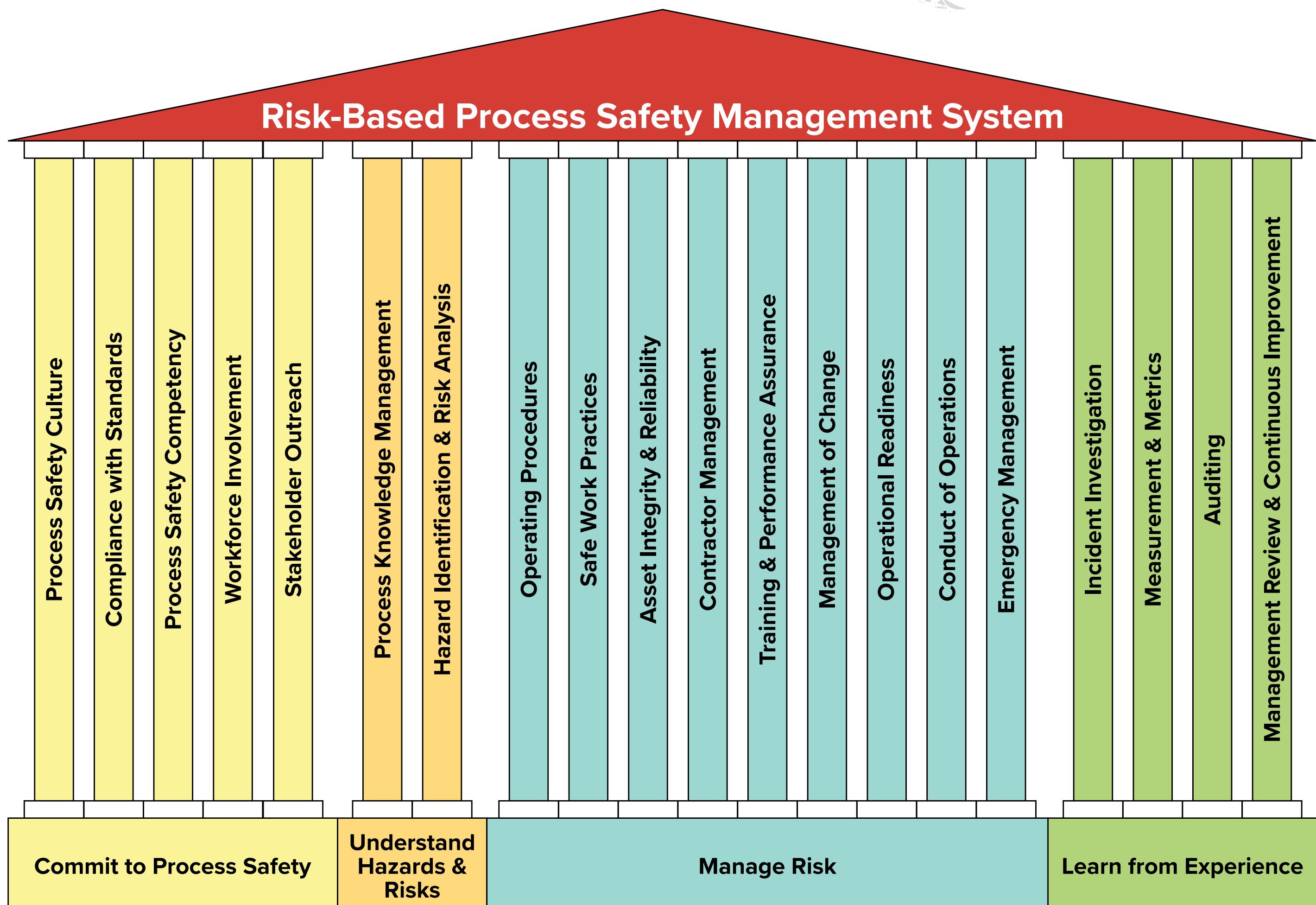
An AIChE Technology Alliance
CPS
Center for Chemical Process Safety

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PROCESS SAFETY AT A GLANCE

A Roadmap to CCPS® Tools,
Management Systems and
Technical Resources

Risk-Based Process Safety Management System



OPEN THIS POSTER TO DISCOVER CCPS RESOURCES PERTAINING TO THE 20 RBPS ELEMENTS!

PROCESS SAFETY AT A GLANCE 2025

GUIDELINES (G/L) FOR RISK BASED PROCESS SAFETY

CCPS® PUBLICATIONS	CCPS RISK BASED PROCESS SAFETY ELEMENT	CCPS TECHNICAL RESOURCES & TOOLS	ADDITIONAL RESOURCES
COMMIT TO PROCESS SAFETY <ul style="list-style-type: none"> PS Leadership from the Boardroom to the Frontline Essential Practices for Creating, Strengthening, and Sustaining Process Safety Culture The Business Case for Process Safety, 4th ed. G/L for Implementing Process Safety Management, 2nd ed. G/L for Process Safety in Outsourced Manufacturing, 2nd ed. Practical Compliance with the EPA Risk Management Program: A CCPS Concept Book Process Safety for Engineers: An Introduction, 2nd ed. 	Process Safety Culture Standards, Codes, Regulations, and Laws Process Safety Competency Workforce Involvement Stakeholder Outreach	SOFTWARE APPLICATIONS <ul style="list-style-type: none"> Risk Analysis Screening Tool (RAST) and Chemical Hazard Engineering Fundamentals (CHEF) CCPS Glossary CCPS Process Safety Incident Evaluation Tool (PSIE 2.1) CCPS Chemical Reactivity Worksheet Tool (CRW 4.0.3) Process Safety Incident Database (PSID®) (Members Only) Vision 20/20 Self-Assessment Tool RBPS Self-Assessment Tool (Members Only) <p>New tools and videos will be added to aiche.org/ccps/resources/tools</p>	<p>Find CCPS resources to meet your needs from the chart on this page. Additional information can be found at aiche.org/ccps</p>
UNDERSTAND HAZARDS AND RISKS <ul style="list-style-type: none"> G/L for Process Safety Knowledge Management 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 	Process Knowledge Management Hazard Identification and Risk Analysis	VENTING AND EMERGENCY RELIEF <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 G/L for Inherently Safer Chemical Processes, A Life Cycle Approach, 3rd ed. 	<p>It always makes sense to start with "Guidelines for Risk Based Process Safety".</p>
MANAGE RISK <ul style="list-style-type: none"> G/L for Preparing Process Equipment for Maintenance and Return to Service 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 Management of Change for Process Safety 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, 2nd 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 Local Emergency Planning Committee Guidebook Tools for Making Acute Risk Decisions 	Operating Procedures Safe Work Practices Asset Integrity and Reliability Contractor Management Training and Performance Assurance Management of Change Operational Readiness Conduct of Operations Emergency Management	CONSEQUENCE MODELING <ul style="list-style-type: none"> G/L for Consequence Analysis of Chemical Releases G/L for Evaluating Process Plant Buildings for External Explosions, Fires, and Toxic Releases, 2nd ed. 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 <ul style="list-style-type: none"> G/L for Process Safety in Bioprocess Manufacturing Facilities DUST EXPLOSION HAZARDS <ul style="list-style-type: none"> G/L for Safe Handling of Powders and Bulk Solids G/L for Combustible Dust Hazard Analysis HUMAN FACTORS <ul style="list-style-type: none"> Human Factors Handbook for Process Plant Operations: Improving Process Safety and System Performance G/L for Preventing Human Error in Process Safety AUTOMATION <ul style="list-style-type: none"> 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. 	<p>Check out CCPS Publications at aiche.org/ccps/publications</p> <p>Note: Many CCPS publications are available in different languages.</p>
LEARN FROM EXPERIENCE <ul style="list-style-type: none"> Book of Beacons (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 	Incident Investigation Measurement and Metrics Auditing Management Review and Continuous Improvement		<p>The CCPS Process Safety Fundamentals Certificate Program (CCPSf) is a training initiative based on a curated list of SACHE course offerings.</p>

CCPS MONOGRAPH SERIES

Note: Please check the URL for each series to view available translations, updates, and the complete list for each series.

GOLDEN RULES (GR) AND KEY PRINCIPLES (KP)

aiche.org/ccps/GR&KP

- GR for Ammonium Nitrate
- GR for Combustible Dust
- GR for Chlor-Alkali
- GR for Hydrogen Sulfide
- KP for Operating Procedures
- KP for Management of Change
- KP for Operational Readiness
- KP for Incident Investigation

SAFE WORK PRACTICES (SWP)

aiche.org/ccps/SWP

- Access to Hazardous Area
- Common Elements
- Confined Space Entry
- Emergency Response
- Energy Isolation
- Equipment Filling and Mixing
- Equipment Identification
- Excavation
- Field Review of Permits
- Hot Tapping
- Hot Work
- Job Safety Analysis (JSA)
- Line Opening
- Permit to Work
- Process Plant Portable Buildings
- Scaffolding
- Simultaneous Operations (SIMOPS)
- Temporary Instrumentation and Controls Bypass
- Temporary Isolation of Relief Devices
- Working at Heights

PROCESS SAFETY MONOGRAPHS

aiche.org/ccps/monographs

- Process Safety and the Energy Transition
- Process Safety and the Energy Transition: Battery Technology
- How Business Financial Decisions Impact Process Safety Performance
- Methods to Analyze Loss-of-Containment Scenarios
- Process Safety in Outsourced Manufacturing Operations
- Safer Technologies and Alternatives Analysis (STAA)
- Effectively Using Metrics to Improve Process Safety Performance
- Human Factors Primer for Front Line Leaders
- Assessment of and Planning for Natural Hazards
- RBPS During COVID-19 & Similar Disruptive Times
- Reflections from Global Process Safety Leaders During and Following Pandemics
- Be Smart: Safe Restart