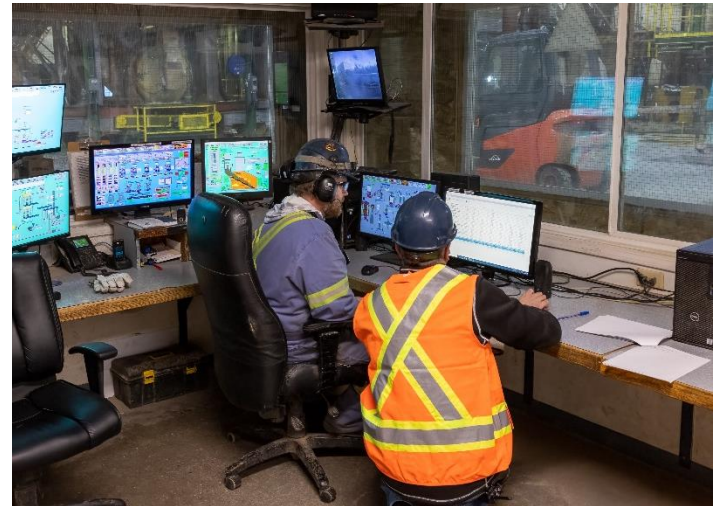


PROCESS SAFETY MANAGEMENT (PSM) IN WOOD PRODUCTS MANUFACTURING

KEY PERFORMANCE INDICATORS

INTRODUCTION TO PROCESS SAFETY KEY PERFORMANCE INDICATORS

Process safety key performance indicators (KPIs) involves the use of leading and lagging indicators that are selected and monitored to target for improvement. Leading indicators are process-focussed metrics that signify the function of operating discipline, processes, or safety barriers/controls. Leading indicators are selected to provide an early signal of potential issues or degradation of safety controls so proactive corrective actions can be conducted. Lagging indicators are outcome-focused metrics that can signify recurring issues and include events that have taken place.



KPIs is an element of process safety management (PSM). The CSA Z767 *Process Safety Management* framework is shown below; KPIs is highlighted.

Process Safety Management Elements			
Process safety leadership	Understanding hazards and risks	Risk management	Review and improvement
Accountability	Process knowledge and documentation	Training and competency	Investigation
Regulations, codes, and standards	Project review and design procedures	Management of change	Audits process
Process safety culture	Process risk assessment and risk reduction	Process and equipment integrity	Enhancement of process safety knowledge
Conduct of operations — senior management responsibility	Human factors	Emergency management planning	Key performance indicators

CONSIDER KEY PERFORMANCE

INDICATORS IN YOUR OPERATION

- Have you identified leading and lagging key performance indicators (KPIs) for process safety at your facility?
- Are process safety near misses tracked? These may include, for example, small fires, system failures or instrumentation failure that could lead to an incident.
- When selecting key performance indicators, which of the following are considered?
 - Indicators that refer to process safety critical equipment and items that influence system performance.
 - Indicators that advance process safety performance improvement and learning.
 - Indicators that are relatively easy to implement, measure, and understood by stakeholders.
 - Indicators that can be used for benchmarking.

NEXT STEPS FOR WPAC MEMBERS

Building on the research results of an Innovation at Work project (funded by WorkSafeBC), the BC Forest Council and WPAC will support operations for the implementation of PSM, which will involve activities focussed on outcomes including the development of:

- Site-specific and industry benchmarking process safety KPIs,
- A KPIs self-assessment worksheet and action plan, and
- A KPIs policy.

Additionally, KPIs to monitor and track the progress of integrating PSM elements will be developed.

RESOURCES

[Process Safety Initiative](#) (WorkSafeBC)

[CSA Z767-17 Process Safety Management Standard](#) (CSA Group)

SELECTED KEY PERFORMANCE INDICATORS RESOURCES

Best Practice/Resource and Link
HSE (2006). Developing Process Safety Indicators: A Step-By-Step Guide for Chemical and Major Hazard Industries
Fanelli, P. (2014). Process Safety Performance Indicators for a Fuel Storage Site: A Worked Example
Chemical Business Association (2018). Safety Performance Leading Indicators
Center for Chemical Process Safety (CCPS) (2022): Process Safety Metrics Guide for Leading and Lagging Indicators (Version 4.1)

The views, findings, opinions, and conclusions expressed herein do not represent the views of WorkSafeBC.