

12th Chemical Process Safety Sharing (CPSS)

Process Safety Assessment (PSA)

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Thai Oil





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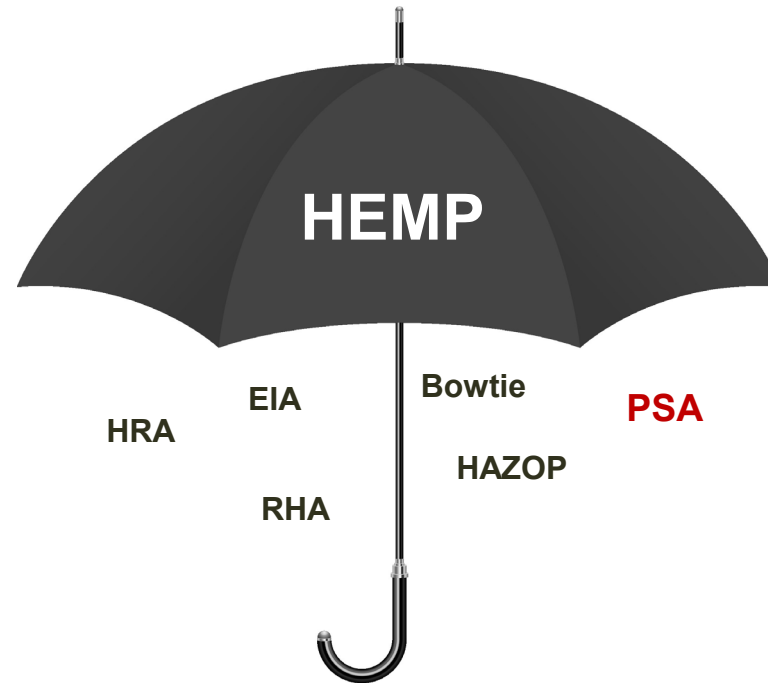
PSA Application

PSA Steps

Execution, make it real in field



PSA under HEMP



Hazard and Effects Management Process (HEMP), Refer Shell Global Solution

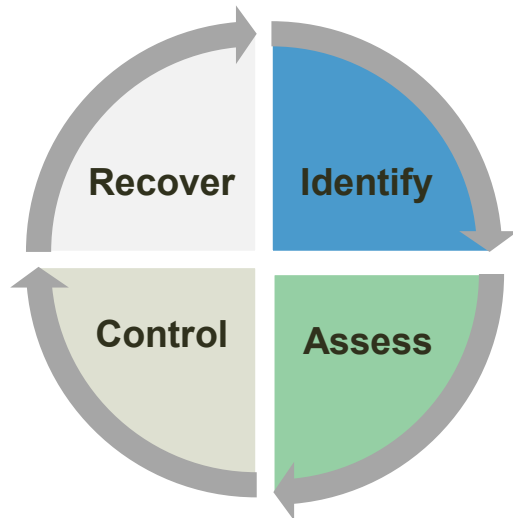
A structured risk analysis methodology that involves Hazard identification, Risk assessment, selection of Controls and Recovery Measures, and comparison with tolerability and As Low As Reasonably Practicable(ALARP) criteria.
Example; HAZOP, PSA, Bowtie, RHA, FSR, QRA, HRA, EIA, ...



HEMP Methodology



HEMP – 4 Major steps A Circular Quality Control Process



Identify

- What is hazards are present?
- Are People, Environment, Reputation or Assets exposed to these Hazard?

Assess

- Can the hazard be eliminated or minimized?
- What are Threats that can release the Hazard?
- What are the credible scenarios and how likely are they?
- What are the potential consequence?
- What is the potential likelihood of the hazardous event?
- What is the risk?

Control

- How are the hazards and their risks managed?
- What are the controls are barriers?
- How effective are the barriers and control?

Recover

- When a hazard is released, what are the recovery measures in place?
- How can the consequences be mitigated or minimized?



PSA Application



Process Safety Assessment

- It is used to assess *existing assets*.
- It uses the Risk Assessment Matrix (RAM) to assess the risk of each hazard present in the unit and focuses on system and units with RAM **High risk and High severity**.
- It is conducted by P&ID and field reviews.
- It assesses scenarios **using Tolerability and ALARP criteria** for consequences to people, assets, environment and reputation (PAER).



Focus High Risk and High Severity



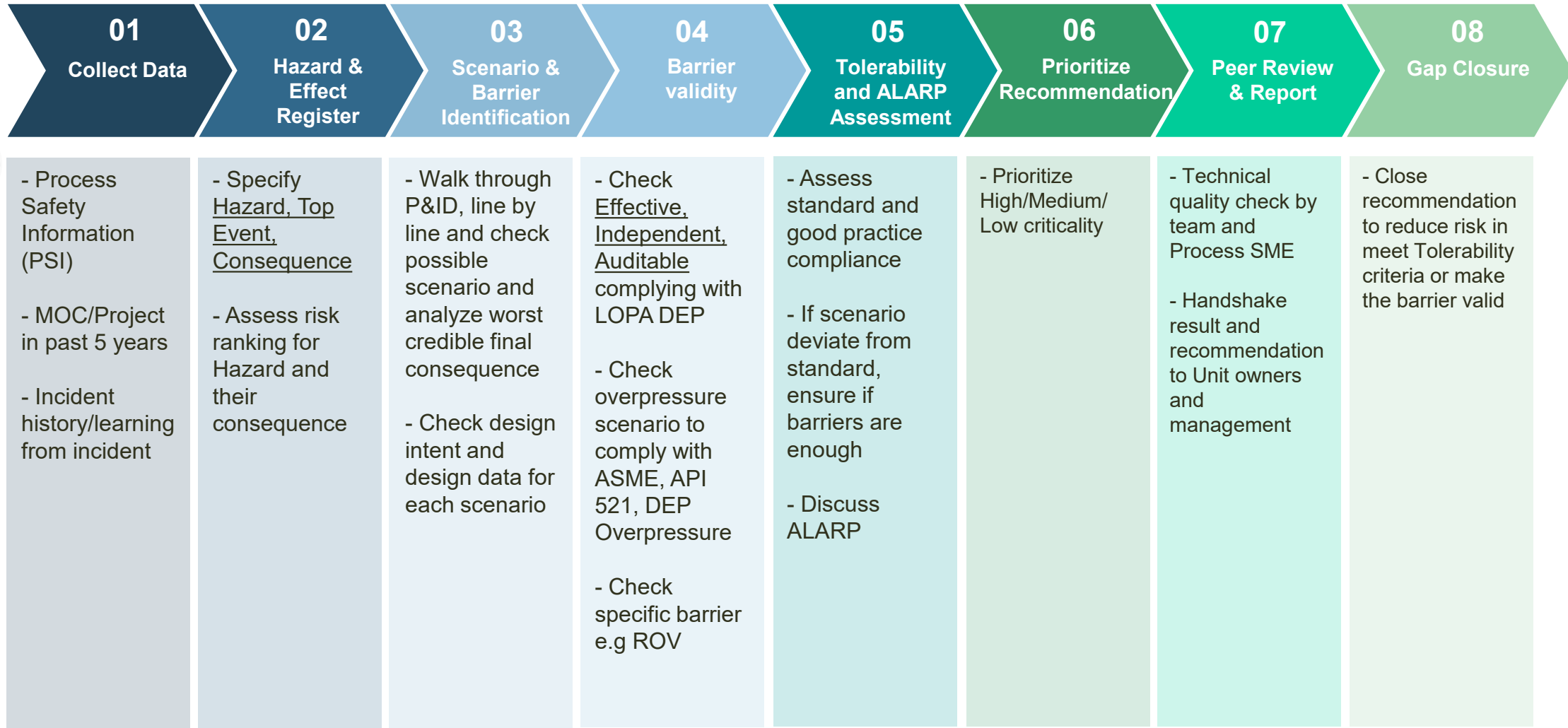
Assess the Safety, Integrity and Operability for compliance with Current Practices, Standard and Regulation.



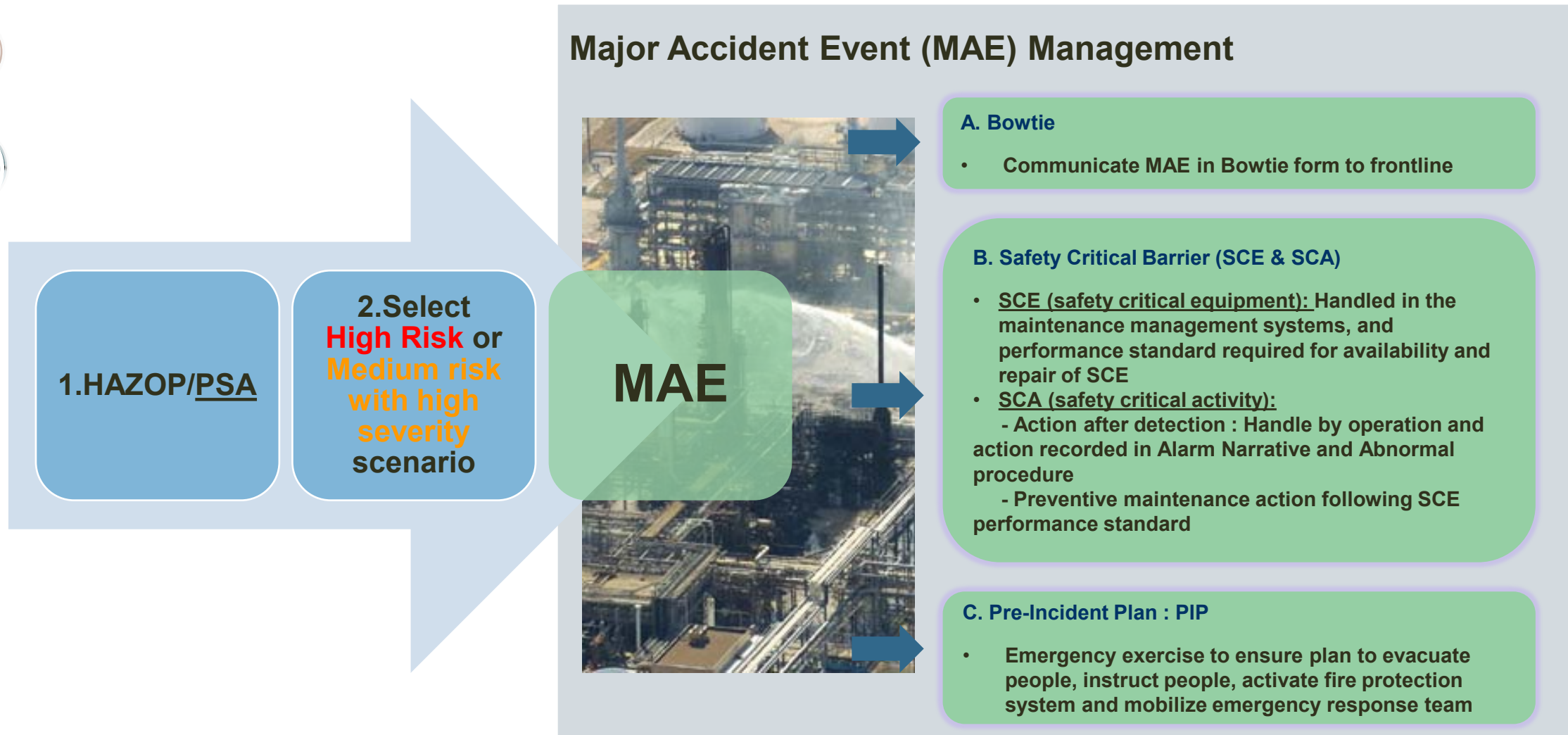
Balance manhour and cost



PSA Step



Execution, make it real in field





Thank you for your attention

