



7th CPSS

Process Safety Enhancement the last Defense of Bow Tie

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7th Chemical Process Safety Sharing (CPSS)
May 7, 2021, Thailand





Presenter Biography



Company : Thaioil Public Company Limited

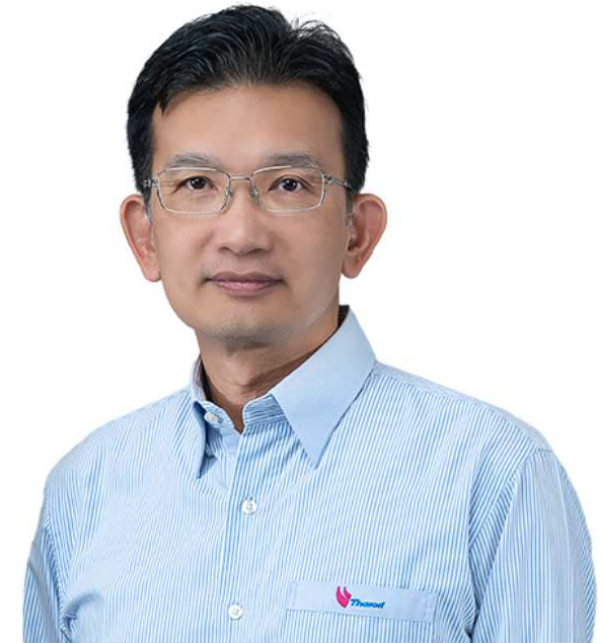


Current Position : Manager- Occupational Health, Safety and Fire

Working Experience : 30 years

Presentation Abstract:

The process industries increasingly recognise the importance of the cultural aspects of process safety management (PSM). This is due in part to the findings from investigations into major disasters in process industries (e.g. Chernobyl, Bhopal and San Juanico, Alpha Piper) and other industries. All these investigations concluded that systems broke down catastrophically, despite the use of complex engineering and technical safeguards. These disasters were not primarily caused by engineering failures, but by the action or inaction of the people running the system. Process Safety culture consists of values, attitudes, perceptions, A strong process safety culture the last defense of Bow-Tie to minimizing process safety event.



Sermsak Nuntapong

AGENDA

01 Reference Standard/ Best practices

02 How do we define Process Safety Culture?

03 Why is it Important?

04 How do we Measure?

05 Ex. PSC Enhancement Program

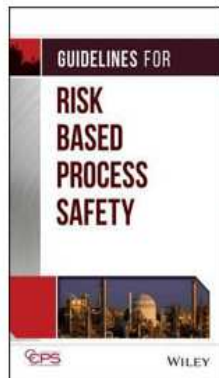
06 Strong PSC The Last Defense of PS Incident Prevention

07 Conclusion



Reference Standard/ Best Practices

The Center for Chemical Process Safety (CCPS) made process safety culture a key element when it published its *Risk Based Process Safety Guidelines*. One chapter described how to nurture process safety culture and defined the 12 essential features of a good culture.



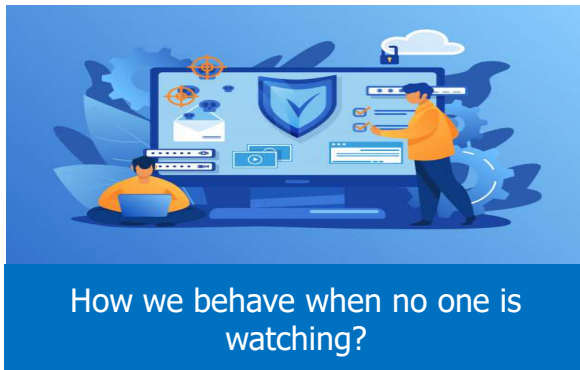
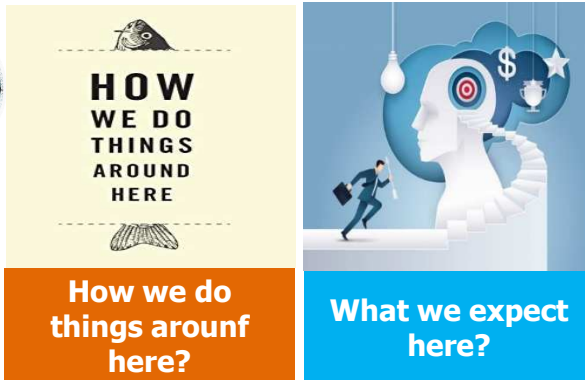
CCPS Process Safety Culture – Essential Features

1. Establish safety as a core value
2. Provide strong leadership
3. Establish and enforce high standards of performance
4. Formalize the safety culture emphasis/approach
5. Maintain a sense of vulnerability
6. Empower individuals to successfully fulfill their safety responsibilities
7. Defer to expertise
8. Ensure open and effective communications
9. Establish a questioning/learning environment
10. Foster mutual trust
11. Provide timely response to safety issues and concerns
12. Provide continuous monitoring of performance

Over the past ten years, many other organizations in different industries have proposed frameworks to understand and assess safety culture.

How do we define PSC?

More succinct definitions include:

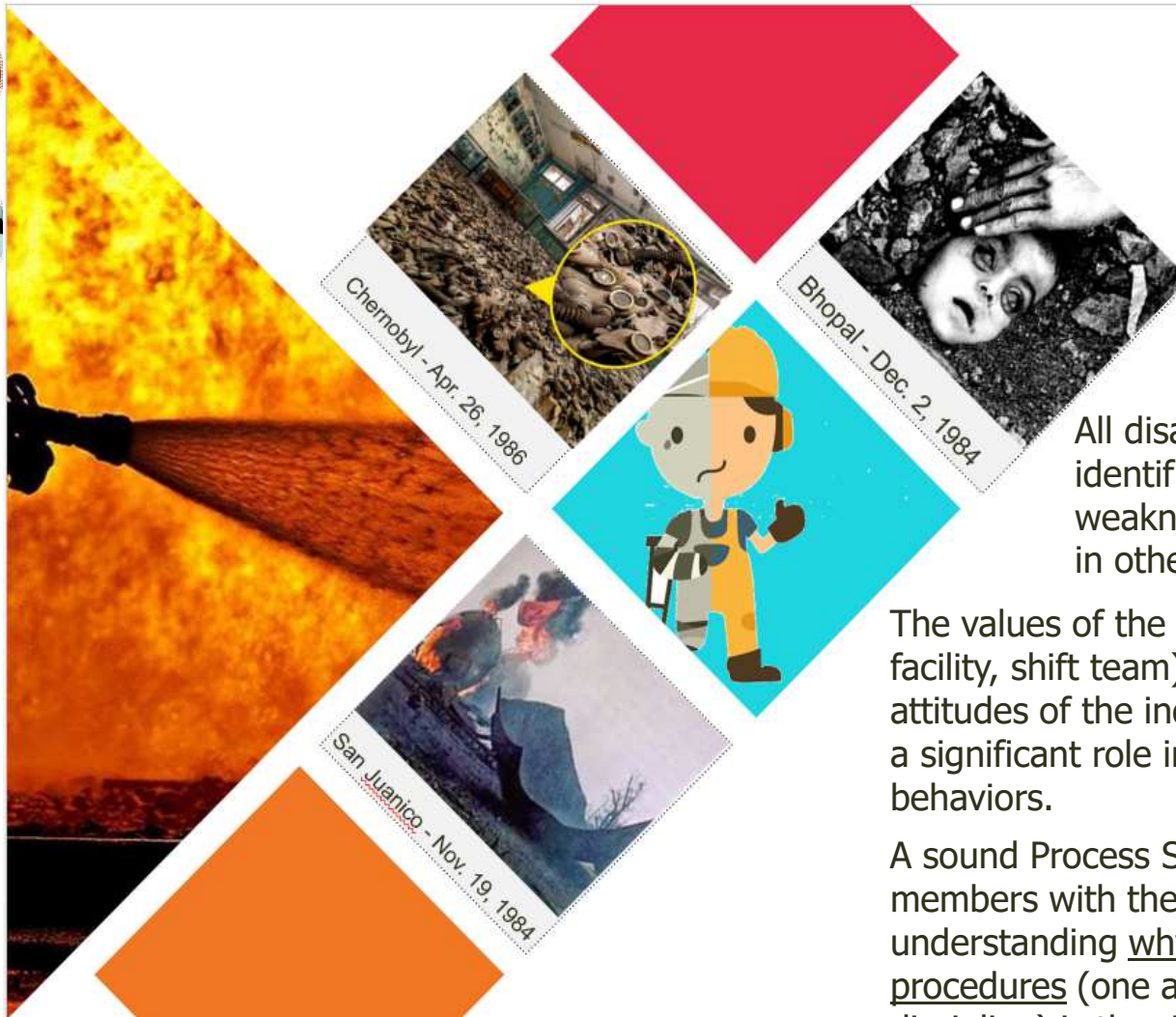


PS culture has been defined as the combination of group values (LSR & PSF) and behaviors that determine the manner in which process safety is managed.



In an especially sound culture, deeply held values are reflected in the group's actions, and newcomers are expected to endorse these values in order to remain part of the group

Why is it Important?

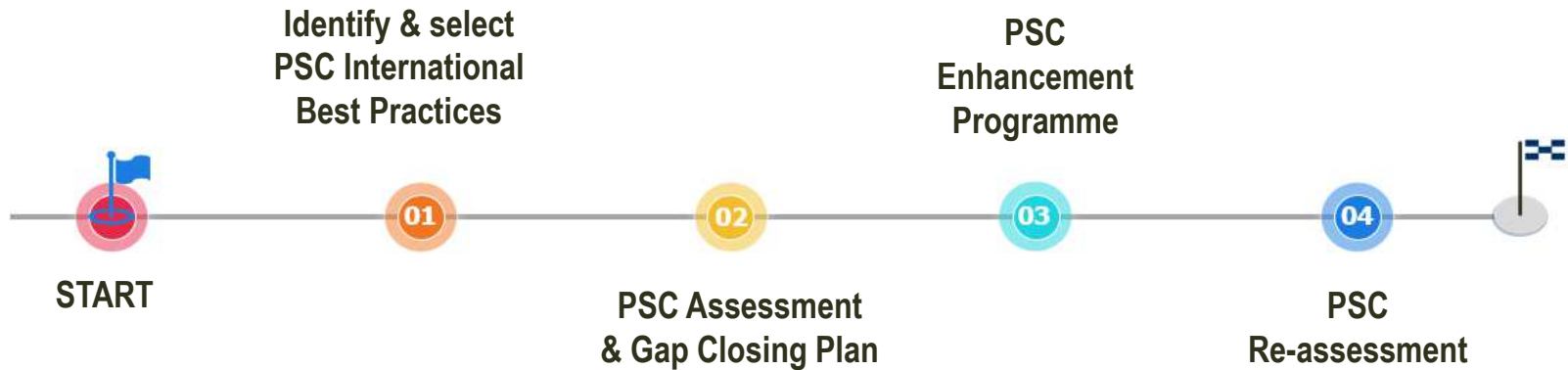


All disasters as mentioned, have identified common PS culture weaknesses that are often factors in other serious incidents.

The values of the group (e.g., corporation, facility, shift team) can help shape the attitudes of the individual, which in turn, play a significant role in determining individual behaviors.

A sound Process Safety Culture provides its members with the values necessary for understanding why strict adherence to procedures (one aspect of operating discipline) is the right thing to do.

PSC Enhancement Process



How do we Measure PSC?

"We can't manage what we don't measure."

Performance

Measure PSC performance

360° view of the "health"

Provide a 360° view of the "health" of PSC at this site:

- Clearly identify Leadership disconnects with other teams
- Pinpoint areas of improvement priority across the site and within specific departments and teams

Baseline performance

Establish a baseline performance that can be monitored in the future

Improvement priorities

Determine improvement priorities that will directly inform action plans to address PS issues and overall cultural development

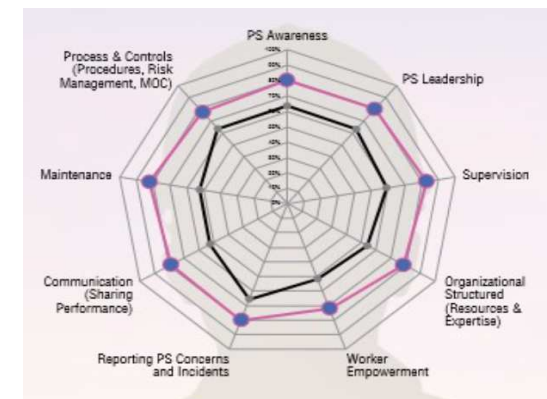
Pockets of excellence

Identify pockets of excellence in PSC

PSC Structure Survey (9 Dimensions)



Ex" PSC Assessment Result



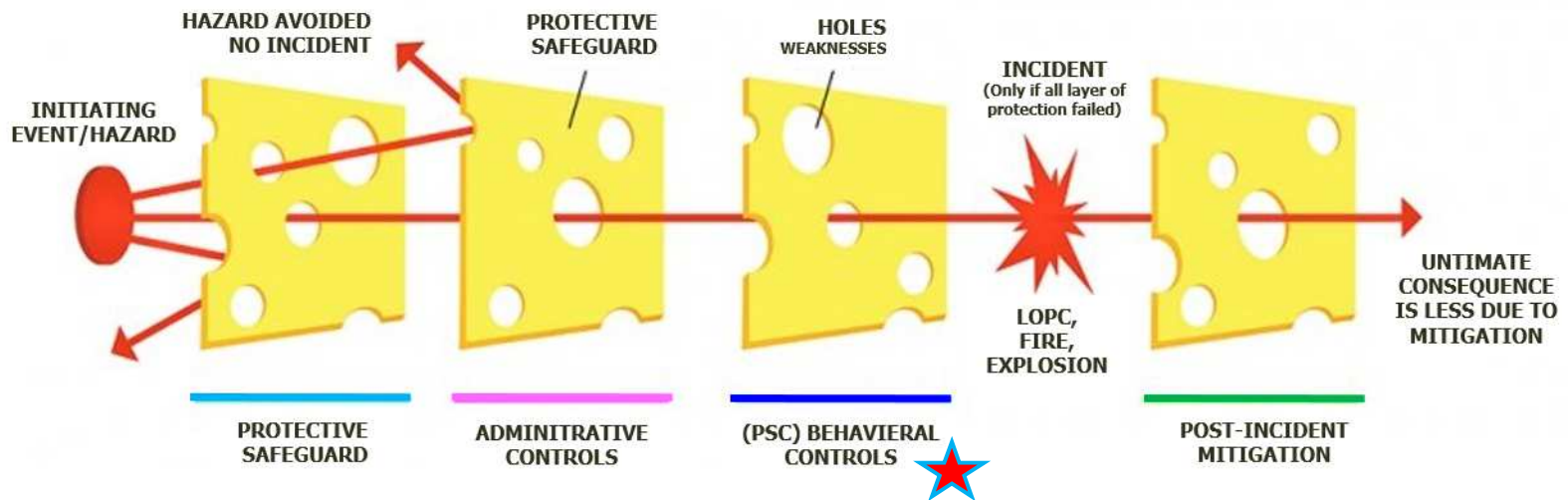
Ex. PSC Enhancement Program

Example of PSC Gap Closure Plans:



Strong PSC The Last Defense of PS Incident Prevention

A strong process safety culture the last defense **[of Bow-Tie]** to minimizing process safety event



Your responsibilities



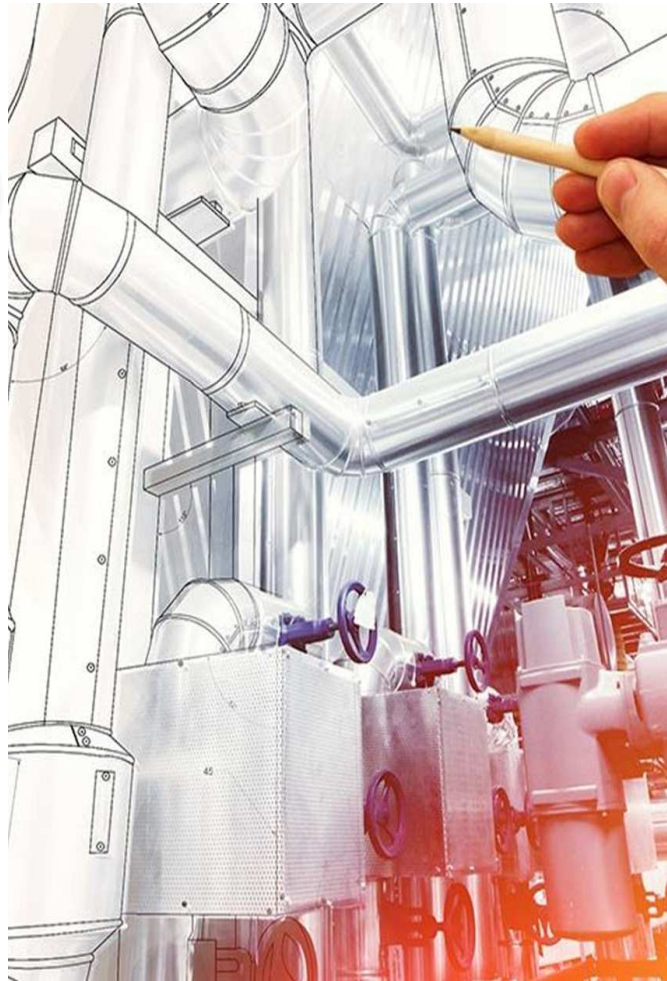
Leaders

engage, act upon weak signals welcome bad news and question and hold people accountable.

Employees

feel empowered to execute the necessary safety critical tasks and maintain the integrity of our barriers, to assure that our assets (people and property) are safe.

Conclusion



Talking



Behaving



Sharing



Training

CCPS culture feature framework

Our belief is that while the CCPS culture feature framework is the most complete one, ultimately, it will not matter which framework you follow, but that you excel in the aspects of any one of them. When this doesn't happen and a poor culture persists, here are some lessons the authors have learned about why and what needs to be done.

Start "talking"

If you have poor culture, marked by mistrust or needs large improvement, the worst thing you can do is too just start "talking" about it at the top management

Start "behaving"

The "top" needs to first start "behaving" better to address culture weaknesses; then, the talk will build up from the bottom.

Commit to sharing

If you survey, do it anonymous and voluntary; you should commit to sharing the results – quickly

Training to all workforce

Any education/training, etc. should extend to ALL of the workforce, including contractors

BUILD LEADERSHIP & OWNERSHIP



Thank you for your attention



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