



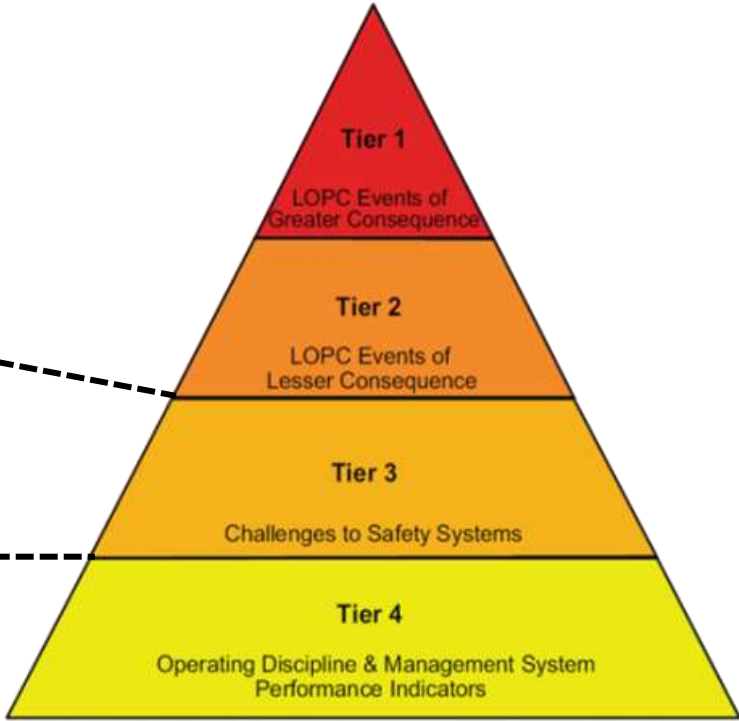
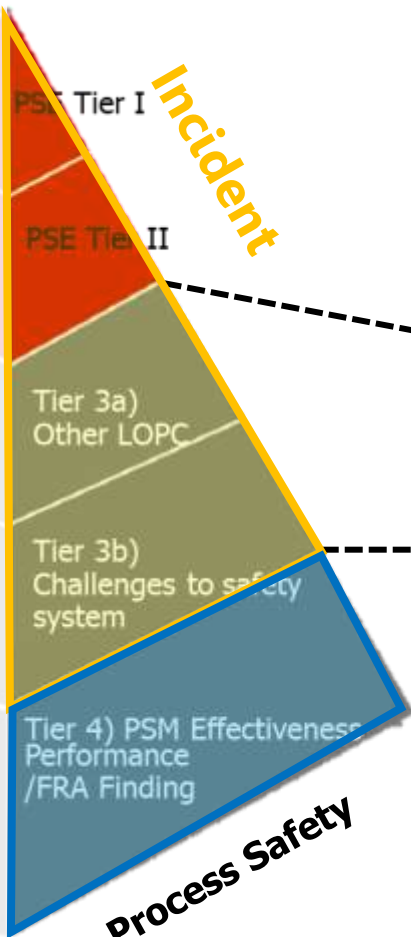
# Process Safety Events Indicator

# Process Safety Indicators Pyramid

Tier ?



Fatality and



energy **API**  
AMERICAN PETROLEUM INSTITUTE

API RP 754 Process Safety Performance Indicator  
for Refining and Petrochemical Industries

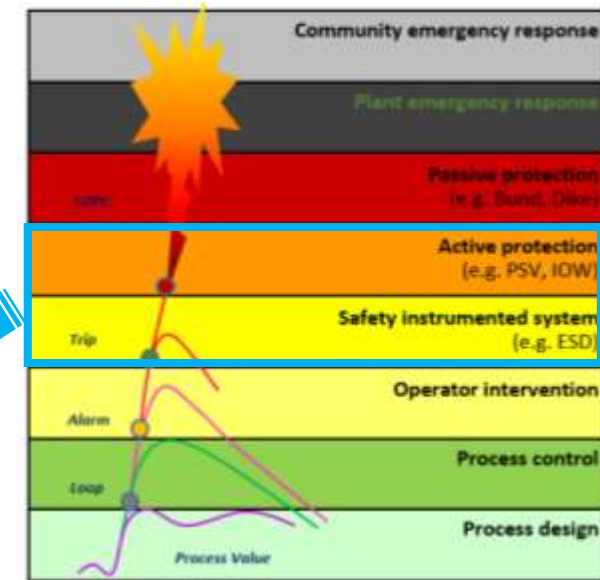
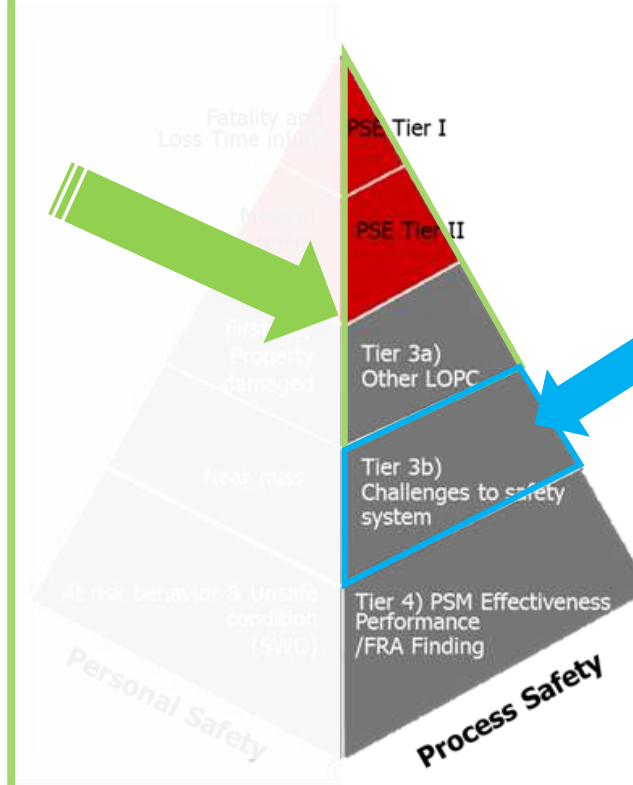
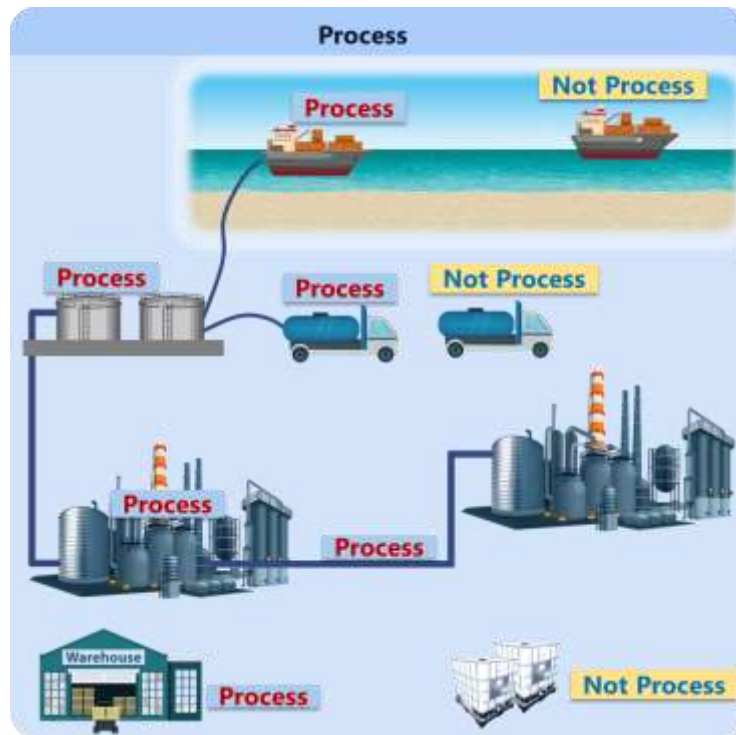
SECOND EDITION, APRIL 2016

ERRATA, JUNE 2017

OEMS, Manual level 2

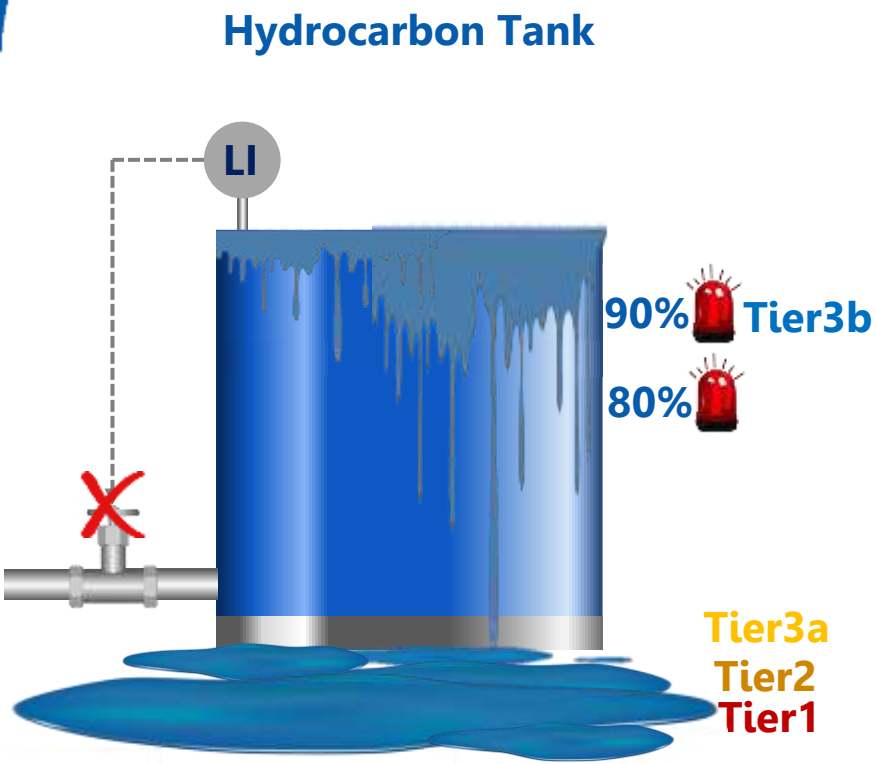






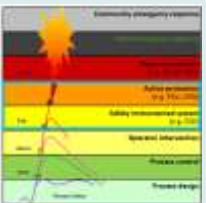
# Process Safety Event (PSE)



**Process Safety Event  
Tier 1/2/3a/3b**

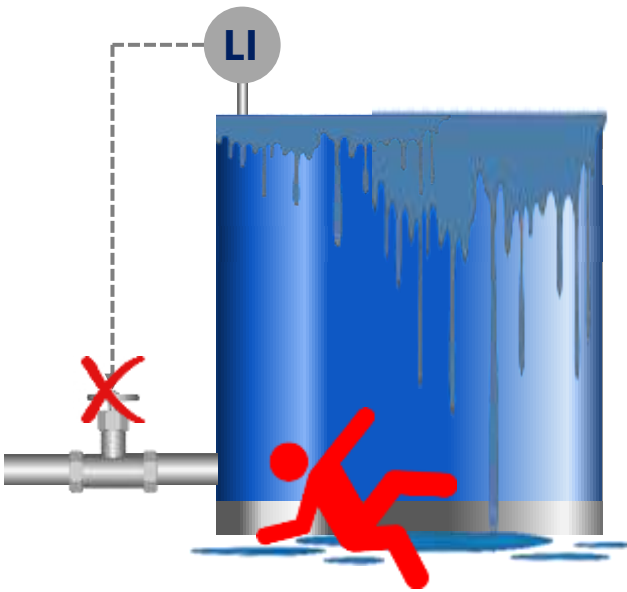
# Process Safety Event (PSE)



Consequence	Tier 1	Tier 2	Tier 3a	Tier 3b
 Quantity (Loss of Primary Containment)	High	Medium	Low	
 Personal Injury	Fatality/ Loss Time	Medical Treatment		
 Fire & Explosion (Direct Cost, USD)	$\geq 100,000$	$< 100,000$ and $\geq 2,500$	$< 2,500$	
 Evacuation	Official declared community			
 Challenges to Safety Systems				<ul style="list-style-type: none"><li>- Safe Operating Limit excursion (<b>Integrity Operating Window</b>)</li><li>- Demand on Safety Instrumented System e.g. <b>ESD, PSV popup</b></li></ul>





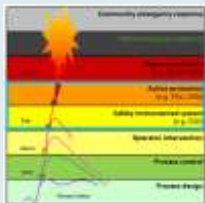
# Process Safety Event (PSE)

Hydrocarbon Tank



Hydrocarbon Overfill Low quantity  
Contractor injury is day a way from work

Process Safety Event Tier 1

Consequence	Tier 1	Tier 2	Tier 3a	Tier 3b
 <b>Quantity (Loss of Primary Containment)</b>	High	Medium	Low	
 <b>Personal Injury</b>	Fatality/ Loss Time	Medical Treatment		
 <b>Fire &amp; Explosion (Direct Cost, USD)</b>	$\geq 100,000$	$< 100,000$ and $\geq 2,500$	$< 2,500$	
 <b>Evacuation</b>	Official declared community			
 <b>Challenges to Safety Systems</b>				- Safe Operating Limit excursion ( <b>Integrity Operating Window</b> ) - Demand on Safety Instrumented System e.g. <b>ESD, PSV popup</b>

# เราเชื่อว่าอุบัติเหตุป้องกันได้

