

# International Conference on Process Safety Performance Indicators

## Usage and Consequences

Evonik Industries AG  
Director Environment & Safety Worms  
Dr. Rudolf Sing

February 01, 2012 - Brussels



Leak or no leak - everyone has a  
personal assessment



Dripping areas  
< 2 l/h

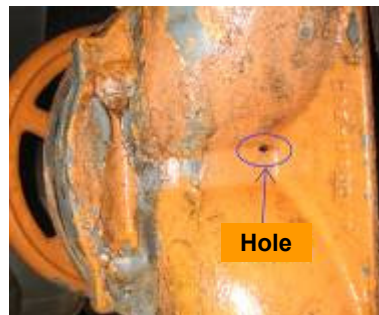


Previously - Not  
good, but no  
leakage!



Salting out

This is a  
leakage !



Leakage > 2 l/h

## Basic Situation vs. The success in the following year



96 Fluid leaks

24 Gas leaks

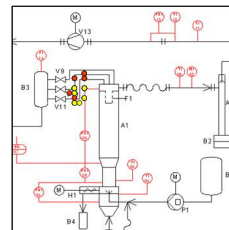
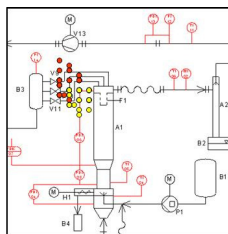
274 Changes at tech.  
Equipment (Repair,  
Exchange)

### Targets:

The visualization is used to help the inspection staff, where the plant have to be observed in detail.

**Recording of all leaks** (relating on a new definition).

The yellow flags symbolize tech. interventions as a result of inspections in a shutdown (precautionary changes of equ. or maintenance).



35 Fluid leaks

24 Gas leaks

123 Changes at tech.  
Equipment (Repair,  
Exchange)

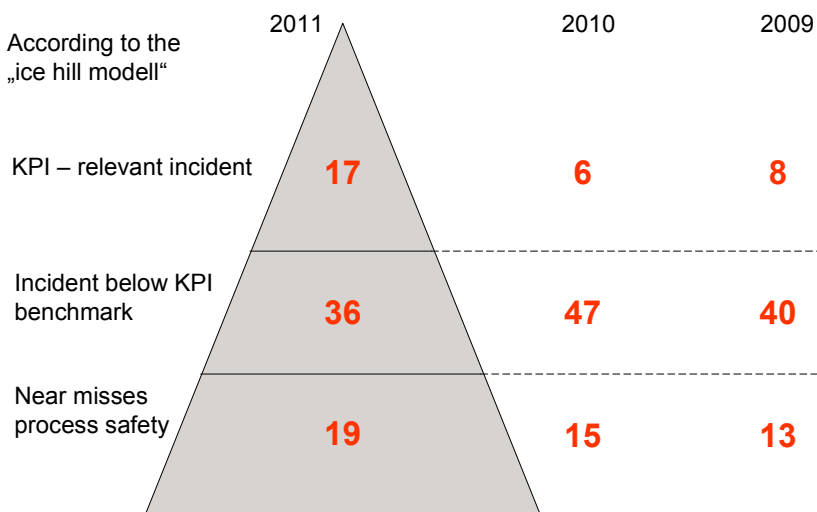
16 improper insulation

2012-01-31 | Dr. Sing

## Incident pyramid process safety examples



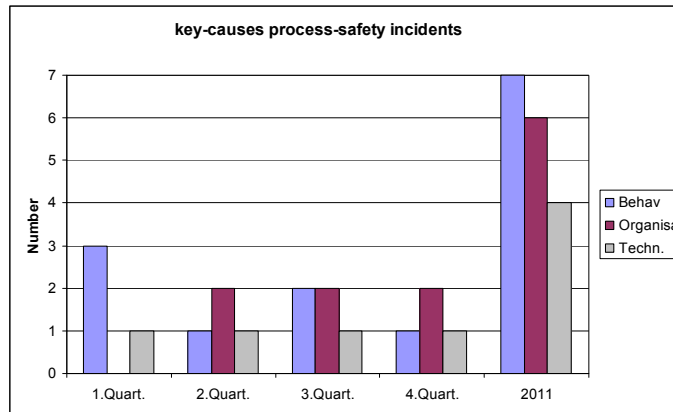
According to the „ice hill modell“



## Analysis of KPI relevant Incidents



Technical Causes (failure of machines or material)  
 Organisational Causes (Processes or workprocedures)  
 Behavior (human errors, ignorance)



## The „No Tolerance“ program in the plant



- **New definition of leaks** (salting out, dripping etc.)
- **Entitle: "Our facilities will be 100% leak-proof" - no tolerance for leaks independent of the substance.**
- **Plant inspection protocols with positive and negative quotation of the area**
- **Quick visualization with flags in the process flow diagram**
- **Fast and resolute action to eliminate even the smallest leaks. Different sensitivity in risk evaluation.**
- **Looking on a certain aspect in a system will change the system (according to Heisenberg in greatest possible extend).**