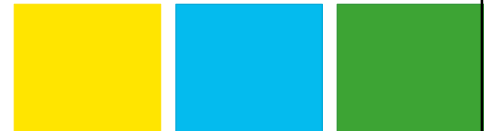




The Euro Safety Initiative

Ton Manders | Euro Chlor

May 17, 2017

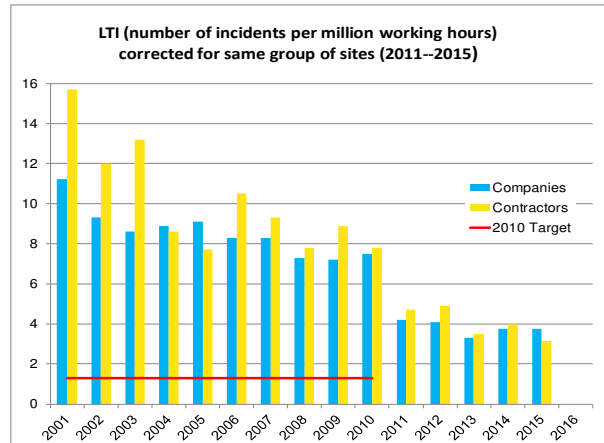
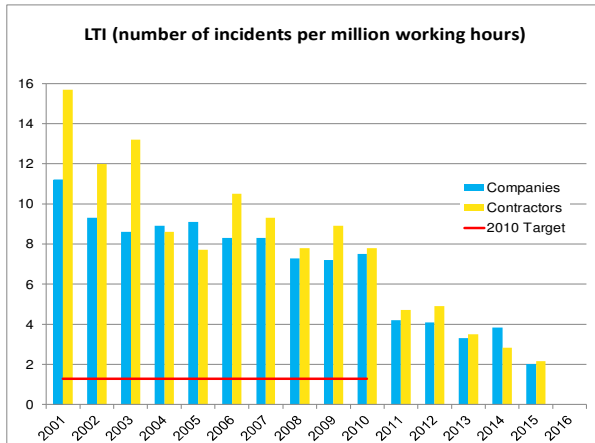


Why a Safety Initiative?



Why a Safety Initiative?

A stagnating safety performance based on LTI's

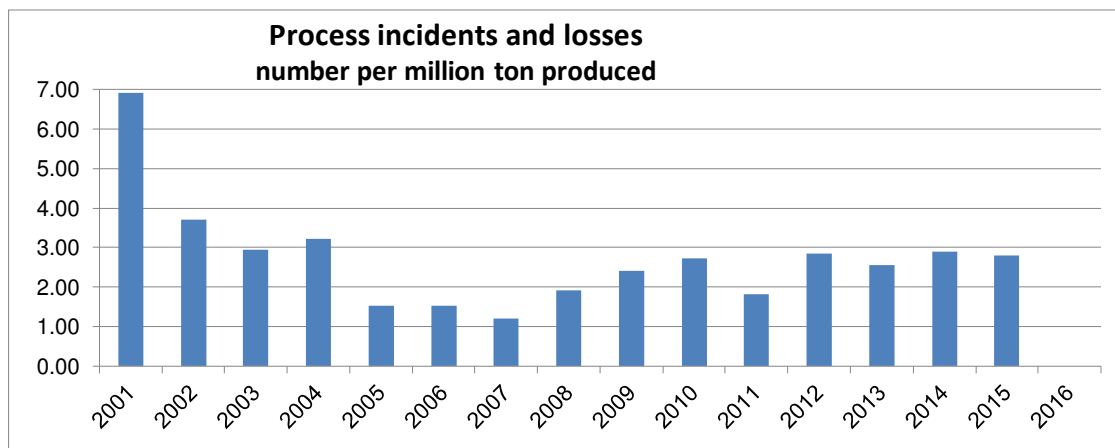


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Why a Safety Initiative?

A stagnating performance on process incidents



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Why a Safety Initiative?

A stagnating performance on incident reporting

	2011	2012	2013	2014	2015	2016
Number of process incidents	17	27	24	25	27	??
Number of incident reports	1	3	1	1	0	3

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Why a Safety Initiative?

conclusion

- The members are not satisfied with the overall safety performance
- As long as number of accidents and incidents is not zero; there is room for improvement

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How to Improve?



What happened so far?

➤ Safety Workshop in September 2015

- Strong commitment to improve
- Re-launch incident reporting, sharing root causes and best practices
- Discuss incidents in every Euro Chlor work group meeting
- Cardinal rules
- Introduce Safety Newsletters
- Introduce a Self Assessment Tool
- Create leadership

What happened so far?

Re-launch incident reporting, sharing root causes and best practices

- Incident report
 - Report **published anonymous** (on Euro Chlor SharePoint) containing:
 - Type of Incident
 - Section of the plant
 - Incident description
 - Investigation results
 - Root Cause(s) & Contributing Factor(s)
 - Corrective Action(s) & Lessons learned
 - Results are discussed in the relevant working group:
 - Update of Euro Chlor recommendations required
 - New recommendation required



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What happened so far?

When to share an incident report?

- An incident or near miss (in the case it could have evolved) fulfilling one or more of the following criteria:
 - A fire, explosion or a release of chemicals that resulted in a fatality, serious injury or >100,000 Euro in property damage.
 - Incidents with loss of containment. Any spill or unplanned event that results in a loss of a chemical to air, water or land that meets one or more of the criteria defined in the matrix (next slide)

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What happened so far?

When to share an incident report?

- The incident matrix:
 - Human Impact
 - Exposure resulting in first aid, medical visit to/by a doctor
 - Release detected off site (visual, odour etc.)
 - Environmental Impact
 - Visible or measurable damage to crops, livestock, vegetation, wildlife, others
 - Loss of primary containment:
 - Chlorine if >5 kg
 - NaOH or KOH if >500 kg (on 100%)
 - Hypochlorite if >500 kg (based a solution containing 15 wt% active chlorine)
 - Hydrochloric acid or HCl gas: >500 kg (on 100% HCl basis)
 - Sulphuric acid if > 500 kg

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What happened so far?

When to share an incident report?

- The incident matrix (continued):
 - Property damage, business interruption, production loss and clean up costs add up to a sum >100,000 Euro
 - Media attention: Any release/ incident that any draws media attention (radio, television, internet, printed press etc.)

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What happened so far?

Safety news letter and incident reporting

- Quarterly safety newsletters
- Sharing information on lessons learned from incidents and other safety related topics
- Distributed by mail but also on the Euro Chlor SharePoint
<http://www.chlorine.eurochlor.org/SitePages/Home.asp>



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What happened so far?

Cardinal rules

1. Remain in safe concentration range for hydrogen in chlorine
2. Use titanium only with wet enough chlorine
3. Insure low moisture content for dry chlorine handling/ uses
4. Control chlorine maximum temperature to avoid iron fire
5. Avoid contact between chlorine and organics
6. Avoid formation/ concentration of nitrogen trichloride
7. Write operating procedures/ manage the changes
8. Ensure sufficient training/ information of all personnel
9. Prepare and test emergency response plan
10. Do not forget incident investigation and experience sharing

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Next steps...

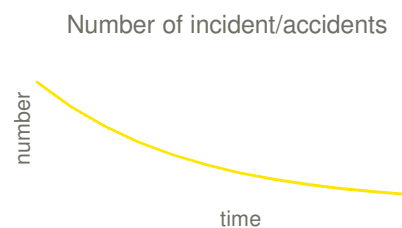
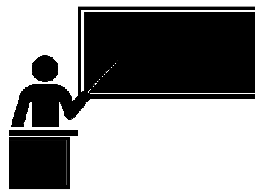
- A dedicated small project team investigating how to:
 - Improve incident sharing and safety knowledge exchange
 - Improve networking amongst members
 - Obtain better knowledge on what members expect from Euro Chlor
- Several member companies will be visited
- First results and plans for improvement will be presented to Management Committee in September 2017

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Next steps...


- To be continued.....



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Thank you very much

Ton Manders

