LESSONS-LEARNED
CHEMICAL HANDLING
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Event Description – 9/13 November 2006

• Task: Dilute acid with distilled water
• Problem: Human Failure (Lapse) – add water first then acid OR acid first then water
• Routine task
• 3 minor incidents (unreported) in the past (9^th^ Nov unreported)
• 1 incident report (13^th^ Nov) – MTC due to chemical burns
Event Significance

- Based on evaluation of the task, **likelihood** could be expected to occur at some time

- Fatality **consequences** could be expected

- **Risk** is evaluated as Very High.
Event Cause(s)

- No mechanical means of mixing chemicals
- Lack awareness / understanding of the potential hazards
- Routine task
- Lack of Supervision during task (only there on the first and maybe second time of the new employee accomplishing this task.)
Event Prevention

• Engineering: Designed a device that automatically ensure the flow of the proper chemical. Set the concentration and open only one valve – the device would open the water first and then the acid with the correct amount.

• Administrative: Increase signage, introduced a simple checklist (words and pictures) and improved the required training.
Summary

Do you have this situation at one of your facilities?

Please review your chemical locations and determine if this incident could happen again!
Lessons Learned

Engineering Controls partially removes the possibility of injury to personnel

Post Event Significance
2016-17 Topics

- December 2016: Confined Space
- January 2017: Chemical Safety
- **February:** Working at Heights
- March: Dropped Objects
- April: Electrical Safety
- May: Energy Isolations
- June: Layers of protection (design)
- July: Loss of Containment
- August: Fire Safety
- September: Lifting Operations
- October: Permit-to-Work.