



- Dow Chemical – Altona Operations Update 2015 YTD

ACNCG Meeting – 12th November 2015

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Topics

1. Altona LOPC – PO Leak
2. EO Emission Update
3. EH&S Improvement Plans (POD) – 2015 Progress and 2016 Goals
4. EH&S Improvement Plans (Utilities/WWTP) – 2015 Progress and 2016 Goals

■ Altona LOPC – PO Leak

■ What

- Category 3 LOPC
- 172kg spill of Propylene Oxide

■ When

- Tuesday 25th August
- 10.46am

■ Where

- Altona
- POD Plant

Incident Summary

- MOD5 started two parallel Propylene Oxide (PO) feed pumps simultaneously.
- Resulting higher than normal hydraulic surge in a nearly liquid full system burst the rupture disks on the PO carbon bed filter.
- Pumps ran for 10 seconds, then shutdown due to a high power alarm.
- Release was detected by multiple gas detectors. Deluge was manually activated which also initiated response by Emergency Services.

Root Causes

- Process did not identify unintended consequences of a recent program change:
 - Parallel running was a desired state for bumpless pump swap when feeding, but consequences not contemplated for feed start up.
- Hydraulic hammer from dual pumps starting simultaneously was not recognized as a risk, nor was the overall risk of hammer in this system.

Corrective Actions

- Correct the code and conduct full simulation before loading.
- Create a nitrogen bubble as a pneumatic damper inside the filter.
- Change the valve opening time – slow.
- Change the valve opening sequence to ensure the filter is not exposed to hydraulic hammer when the pump starts.



■ EO Emission Update

- Internal assessment in January 2015 revealed that EO is not part of the EPA license for Dow Altona.
- EPA was informed on 6th February 2015 upon the conclusion of the internal assessment as well as the community via the EMT (2nd April 2015) and ACNCG (9th April 2015) meetings.
- Chemical monitoring to quantify emission amount was completed and communicated to the EPA on 5th August 2015.
- Dow is assessing the potential impact from EO emissions and working together with the EPA to amend our operating license.



■ EH&S Improvement Plans – POD

2015 ongoing and completed projects:

1. Completing our third and final wave of safety case improvements this year: installation of new level instruments on the oxide storage tanks – expected Nov/Dec 2015.
2. Improve spill protection at three bulk loading stations.
3. Completing the project to monitor continuously the recycle steam condensate for contaminants that would indicate a loss of containment into the system.
4. Pump deadhead protection.
5. Hard pipe 700 manifold

2016 plans:

- a. Evaluate options to reduce EO vapour emission
- b. Other EH&S improvements (e.g. PPE storage and change area) are available but conditional on funding next year.



■ EH&S Improvement Plans – Utilities/WWTP

2015 ongoing and completed projects:

1. Demolition of East Cooling Tower completed.
2. Installation of variable speed drive on cooling water fan motor is ongoing.



2016 plans:

- a. Demolition of decommissioned process lines.
- b. Commissioning of an alternative wastewater tank.



■ Questions?

