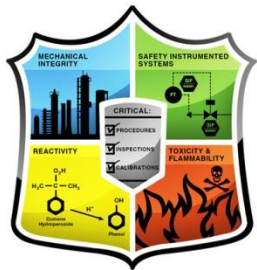


Process Safety
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2018 Major Hazard Facility License Renewal

May 2018 ACNCG Meeting

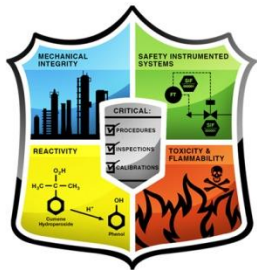


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Overview

- Dow's Altona site is a Major Hazard Facility (MHF) under the OH&S Regulations
 - MHF regs deal with large consequence event e.g. fires, explosion, toxic releases. Emphasis on Process Safety versus Personal Safety (slips, trips, falls, cuts etc)
- Requires site to have an MHF License to Operate
- Maximum 5-year license term requiring renewal at end
- Dow Altona's license was due for expiry 30th April 2018
- To renew MHF license, need to submit a Reviewed & Revised **Safety Case**
- Dow has been through 3 license cycles since regulations introduced in 2000



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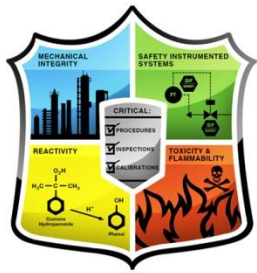
Overview (cont.)

- Preparing a Safety Case is an enormous undertaking. Can't just resubmit the last one!
- Must be submitted 6 months prior to license expiry in order for Worksafe to assess
- For Dow, 18 months of planning & execution. Over 5000 "man hours" spent.



Dow achieved license renewal with the best possible terms – 5 years with no conditions



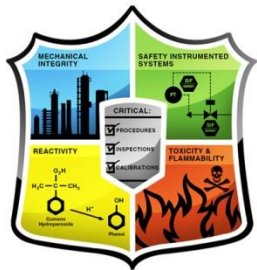


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What is a Safety Case?

- It is a document that details how Dow Altona is managing the risk of all Major Incidents possible at the site
- It must demonstrate:
 - All major incident hazards are identified
 - Consequences/Impact of events are understood
 - Risk control measures are put in place to reduce risk So Far As Reasonably Practicable (SFARP)
 - Risk Control Measures and supported & sustained by an effective Safety Management System
 - Emergency Plans exists to address each of the Major Incidents
 - Consultation with external stakeholders occurs (Emergency Services, Council, Neighbours) to advise of risk & identify opportunities for collaboration on risk reduction

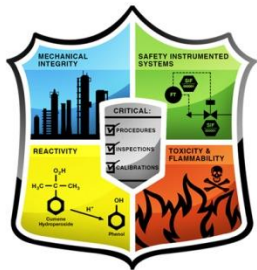


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Dow's 2017 Safety Case

- Worksafe & Dow Corporate have an expectation of continuous improvement in risk reduction
- Over time knowledge advances
 - Learnings from industry incidents
 - New techniques & tools for risk evaluation & risk management are developed
- Over time technology advances
 - New equipment becomes available to help manage risk
 - Equipment previously cost prohibitive becomes more affordable
- We use these advances in our Safety Case to drive continuous improvement in risk reduction to meet SFARP

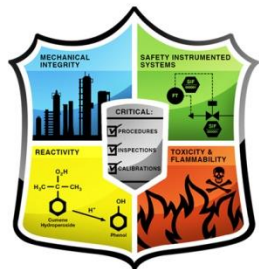


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Highlights of Safety Case

- Excellent employee participation
 - 18 internal workshops for across all phases of Safety Case preparation
 - Ensures high level of “buy in”, ownership & learning
 - Supported by engagement with technical experts from Dow’s off-shore Technology Centers
- Use of latest revision of Dow’s Layer of Protection Analysis (LOPA) methodology
 - Identified where can apply new, “state of the art” interlocks in our plant control system
 - Identified where we can apply best practice operating discipline when engineering controls not available or practicable
- Use of the latest consequence modelling techniques for computer modelling of major incident events
- Excellent input from Emergency Services & Council on reviewing emergency response plans
 - Workshop held with these parties
 - Multiple site visits by MFB to review the fire protection systems on site, and provide guidance on where these can be further improved.

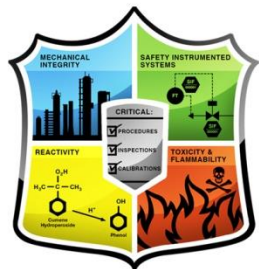


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Highlights of Safety Case

- Demonstrating Dow's strong commitment to continuous improvement in risk reduction, Dow defined more than 100 improvement actions in a multi-year implementation plan. Many will require capital investment.
- Worksafe have been helpful in discussions around continuous improvement options, by sharing examples of "best in class" risk assessment and reduction methods across MHF's

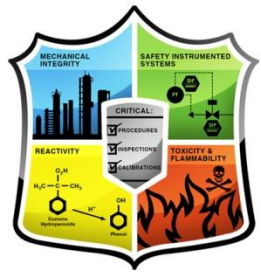


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Concluding Remarks

- The Dow plant has existed for 45 years with the same equipment & quantities of hazardous materials
- Dow site has shrunk from 8 operating units to 1 during that period
- Significant investment in state of the art risk control measures over the last 15 years since MHF regulations were introduced
- Plant is safer than it ever has been
- With the implementation of the defined improvement plan over the next few years, it will be even safer



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Questions?