Modelling Pool Fires

Hosted by: Joint Chemical Engineering Committee

Event Details

Pool fires have the potential to occur in many industries. Examples include confined bund fires, tank top fires and unconfined fires such as vehicle accidents.

This technical presentation aims to address both the fundamentals as well as higher order modelling techniques for pool fires. Understanding the parameters that effect the results is crucial to ensure the modelling results are representative of the scenario and hence this will allow design decisions to be made with confidence. In particular, the following will be addressed:

- Effects of radiant heat on structures and equipment
- Techniques for pool fire modelling
- Experimental vs predicted surface emissive powers
- Burndown rate and the impact on flame height
- The effect of wind on the predicted levels of radiant heat
- How to account for elevated fires

This presentation will include an alternate approach to Appendix J of AS1940 for estimating the adjacent tanks and equipment that require cooling water for a tank top fire. This approach is based on modelling to a predetermined level of radiant heat. It is an established technique in industry. An example application will be presented to show the results obtained using Appendix J of AS1940 as well as modelling to a selected level of radiant heat. This technique may benefit process designers and practicing risk professionals in preparing / updating HIPAP No 2 (Fire Safety Studies) and MHP safety cases. Case studies will also be shown throughout the presentation to support the theory.

About the Speaker - Dean Shewring

Dean has over 30 years' experience as a chemical engineer. After graduating with First Class Honours in chemical engineering in 1985, he joined ICI Australia at the Botany site in Sydney. He spent several years at the Ethylene Oxide / Surfactants Plants as a process design engineer. In 1988 Dean joined Davy Process Technology in London. In the two years he spent with Davy, he worked initially as a process design engineer and then as a project engineer. Dean's process design responsibilities included producing Front-End Engineering Packages for synthetic gas (e.g. methanol, ammonia), and, oil and gas treatment plants (e.g. liquefied natural gas [LNG] plant equipment such as compressors, distillation, refrigeration, purification and storage).

In 1990 Dean returned to Australia and joined BOC Gases Australia as a senior process engineer. His role included process design, commissioning and project management during his six years with BOC. Dean's experience in the gases industry includes air separation and compressed gas plant design, construction and commissioning (including having responsibility for the success of a natural gas purification plant in western Victoria), taking an active role in assisting with ISO 9000 accreditation and preparation of company standards and procedures.

In 1996 Dean returned to ICI Australia to further his career with hazard studies and other risk management activities. The latter includes presenting training courses, Preliminary and Final Hazard Analyses, Quantified Risk Assessments, Failure Modes and Effects Analyses, Fire Safety Studies, Construction and Demolition Safety Studies, Transport Studies, Hazard Audits and HAZOP studies.

VENUE
Engineers Australia Auditorium,
G/F, 8 Thomas Street
Chatswood NSW 2067

DATE & TIME
Tuesday 27 June 2017
6:00 pm for a 6.30 pm start

Light refreshments will be served prior to the presentation.
Sponsored by

TICKETS (incl. GST)
EA Members & Students: Free
Non-members: $30

REGISTRATIONS CLOSE
COB Tue 23 June 2017

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