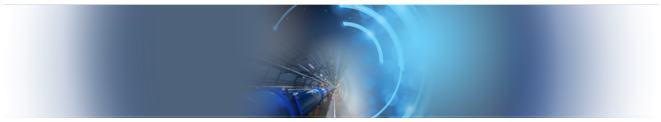

Contribution ID: **60** Type: **Talk**

Risk Assessment tailored to cryogenics - LINDE approach

Thursday, 22 September 2016 16:45 (40 minutes)

The following Risk Assessment Tools will be presented:

HAZID –Hazard Identification Study

Application: if the process contains new applications or provides new challenges (e.g. plant location)

Purpose: Identify hazards such as fire/explosion, toxic impact, occupational hazards etc. and assess adequate preventive / mitigation measures

HAZOP –Hazard and Operability Study

Application: for all Projects

Purpose: Detailed review of design reflected in the PID to ensure that adequate safeguards are available for all possible process upsets or maloperations.

HAZAN –Hazard Analysis

Application: for all PFHE (plate-fin heat exchangers), CWHE (coil wound heat exchangers) and straight tube sheet heat exchangers

Purpose: detailed analysis of the impact of process upset conditions and start-up / shut down scenarios on the lifetime of the heat exchangers –including definition of additional safeguards, if required.

TQR –Technology Qualification Review

Application: for applications which are new in any manner (process, equipment)

Purpose: Structured analysis of the level of novelty and the technical risk (quantified with risk matrix) including –if required - definition of additional measures to reduce the technical risk to low prior to realisation of the project.

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Session Classification: Risk assessment

Track Classification: Cryogenic Safety