

HYDROGEN SKILLS ACADEMY

Hydrasun Hydrogen Safety Training Engineering

The Hydrasun Hydrogen Safety Training course is designed for Engineers already working, or those considering the transition to working in the Hydrogen sector. With more novel and innovative applications for hydrogen anticipated, we need to ensure that we firstly identify, and then manage the risks associated in working with Hydrogen safely. A fundamental understanding of hydrogen's physical properties and key behaviours will be key to safely designing, developing and deploying it as a net zero energy vector.

This course will provide engineering level knowledge in the design of Hydrogen systems and applications. On successful completion, the delegate will be awarded a Hydrasun certificate of attendance.

COURSE DURATION

- 1 days

PRE-REQUISITE

- None

CERTIFICATION

- Hydrasun certificate of attendance

TRAINER

- Our trainers and assessors have been certified by external accreditation bodies

COST

- Price on application – maximum 6 delegates per course

COURSE DETAILS

Hydrasun & Hydrogen

- Hydrogen – A brief history
- Hydrogen properties & characteristics
- Current hydrogen technology and associated applications

Technical Challenges for Hydrogen Systems & Facilities

Hazard Identification & Hydrogen Safety Considerations

- Functional safety
- HAZID & HAZOP
- Failure Mode & Effect Analysis (FMEA)
- Safety Instrumented System (SIS)
- Safety Integrity Level (SIL)
- Layer of Protection Analysis (LOPA)
- Leak & flame detection inc. thermal imaging
- Hydrogen flame characteristics
- General hydrogen storage considerations inc. ventilation requirements
- Gas detection, purging & gas handling
- Principles of deflagration to detonation
- Fire safety / emergency response & emergency shutdown systems

Material Selection & Compatibility

- Material effects & system layout and design for Hydrogen systems (HF in design)
- Hydrogen component specification & selection
- Hydrogen embrittlement

Understand the Behaviour of Hydrogen in Different Phases

- Liquid hydrogen
- Comparison with other fuels (comparison with natural gas)

Regulations That Relate to the Use of Hydrogen & When They Apply

- Pressure Equipment Directive (PED)
- Pressure Systems Safety Regulations (PSSR)
- Explosive Atmospheres (ATEX)
- Dangerous Substances Explosive Atmosphere Regulations (DSEAR)
- Low Voltage Directive (LVD)
- Electromagnetic Compatibility (EMC)
- Hazardous Area Classification (HAC)
- Control of Major Accident Hazards (COMAH)

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