

Fire and Gas System Engineering Masterclass

Develop a Framework for Functional Safety of Fire and Gas Systems through IEC 61511/ISA 84 and ISA TR84.00.07

27th – 29th September 2021

E - Learning Course

Major Benefits of Attending

By end of this course, delegates will be able to: -

- **Understand** the scope of fire and gas engineering for process facilities and the myriad standards, regulations, and requirements
- **Review** the fire and gas system design methods and guidelines that are currently available including their strengths and limitations
- **Identify** and **Define** the fire and gas zones along with the hazards contained in those zones.
- **Discuss** quantitative consequences analysis and how it is employed in performance-based fire and gas system engineering
- **Analyze** the impact on overall risk of the consequence scenario and the beneficial effect of fire and gas systems using consequence integration and event tree analysis
- **Apply** statistical analysis, industry databases and data integration techniques to assess the likelihood of fire and gas system relevant events
- **Assess** the tolerability of the risk posed by a process facility before and after application of fire and gas detection and suppression systems using risk integration techniques
- **Define** the strengths and limitations of the technology options for fire and gas detection sensors
- **Apply** fire detection coverage mapping and gas detection coverage using a system performance assessment tool
- **Determine** the impact of the probability of failure on demand of fire and gas system equipment on the overall risk profile of a process facility
- **Determine** the impact of mitigating the magnitude of consequences of fire and gas release events on the overall process plant risk and the difference between prevention and mitigation

Course Methodology

This 3-day e-Learning Course will be conducted via ZOOM - Webinar / Video Conferencing. Delegates are required to have a working Webcam and Headset with Microphone. For a smooth conferencing, delegates should have an Internet Speed of at least 8Mbps Download and 1.5Mbps Upload Speed.

Why you Should Attend?

Fire and gas detection and suppression system design techniques that are currently in use are often considered to be unsatisfactory due to their nature of being rule of thumb and experience-oriented without any real ability to quantify risk. This has resulted in systems that are either overdesigned or under-designed. Only after the ISA TR 84.00.07, was a comprehensive framework for performance-based fire and gas design established.

This course describes various fire and gas detectors, such as flame, smoke, heat, gas, and the typical actions taken by fire and gas systems. Also described are current system architectures: hard-wired, addressable, and redundant and others; the integration of fire and gas into overall control systems; regulations and codes. To SIL (assign an IEC61508 Safety Integrity Level) or not to SIL will also be addressed.

This course provides attendees a comprehensive understanding of all aspects of Fire and Gas Detection Technology; from performance-based design (fire and gas mapping) through to practical maintenance requirements, including:

- Role & Action of Fire & Gas Detection
- Fire Systems personnel / end users and Fire Responders
- Performance Requirements
- Design Considerations
- Legislative Requirements
- Industry Code of Practice
- Strengths, limitations of use and characteristics of various detector technologies:
- Considerations for Fire and Gas Hazards and applying hazard grades
- Analysis of local hazards and subsequent detector locations

Who Should Attend?

This workshop is suitable for and is designed to attract and be of benefit to a range of people who work in Fire and gas system. Typically but not exclusively this course will be of benefit to:

Technical Disciplines -

- Process Safety Engineer
- Process Engineer
- Instrument/ Automation/ Control Engineer/ Technician
- Maintenance / Instrumentation Technician
- Technical Safety Engineer
- Project Engineer
- Engineering/Operations Management
- Electrical/ Instrumentation System Inspector
- Operator
- Risk Engineer

Typical Companies/ professional/ regulatory bodies that attend FGP –

- Regulator
- Oil and Gas E&P
- Insurance/ Risk Assessors
- EPC / FEED Contractors
- Energy Companies
- Fire and Gas Detection Manufacturers
- Safety Consultancy
- Fire and Gas Detection System Integrators

Organized by:



For more details, contact hello@fdb.sg