



Fire Protection is the study and practice of mitigating and preventing the unwanted effects of potentially destructive fires. It is conformed by every strategy implemented to prevent, mitigate, and control the fire hazard.

Fire protection is an essential feature in business continuity and risk management, which touches diverse risk management elements.

- Management
- Hazard & Risk Assessment
- Control Risks
- Emergency Management
- Learn from Experience



Standpipe with differential valve and firefighting hose connections

WHEN IS IT PERFORMED?

There are several moments when fire protection services are needed:

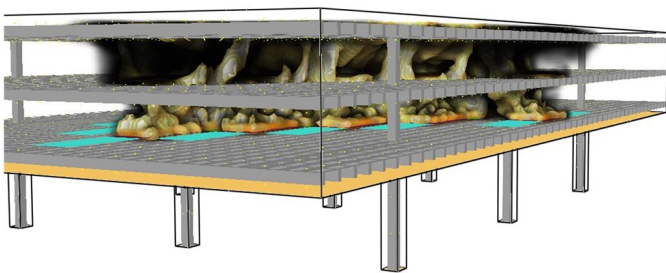
- In a Project to
 - Identify fire hazards, features and modifications required to reduce the associated fire risk
 - Design fire protection systems and necessary measures to adequately control de fire risk
- When considering a change. Any change has the potential to introduce new hazards or modify the design intention of an implemented fire protection feature. For that reason, any change requires to implement a Management of Change (MOC) process. A fire safety review is performed during the MOC process to identify newly introduced hazards or if the evaluated changes impact the fire safety philosophy of the facility requiring modifying the existing fire protection system ensuring an effective fire risk control
- During Operations to ensure that the fire protection philosophy and design systems are adequate to control the fire risk. Additionally, as time passes the performance of the system decays, a review of the system ensures that the system performance is adequate to control the risk
- After an incident to evaluate if prevention measures were adequate and verify that the system performed as expected

HOW IS IT DONE?

There are diverse Fire Protection activities and tasks; each one has a particular intension and needs. A certified fire protection specialist leads the services and can have diverse formats.

The most common fire protection services include:

- Fire Hazard Identification (HAZID)
- Fire Hazard Analysis (FHA)
- Fire hazard surveys and reviews
- Develop and review fire safety management
- Development and review of fire safety philosophy and strategy
- Develop and review fire safety procedures and safe work practices
- Develop and review ignition control strategies
- Electrical hazardous area classification
- Fire Risk Assessment (FRA)
- Fire, explosion and smoke modeling

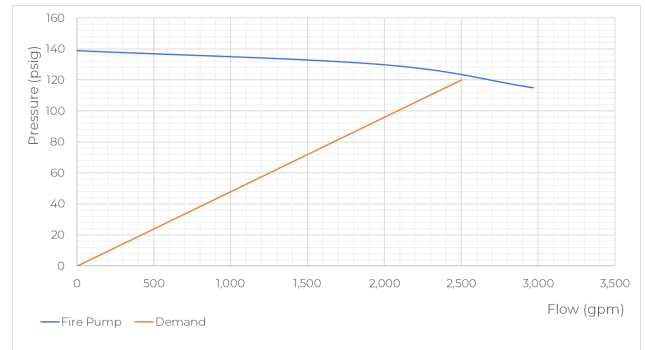


Fire Dynamic Simulation (FDS) Modeling

HOW IS IT DOCUMENTED?

The fire protection services are documented in diverse formats, depending on the service. The most typical deliverable is a technical report and diagrams when needed.

Every service indicated above has a particular deliverable format, which is described in the proposal stage.



Hydraulic Analysis - demand vs supply graph

- Escape and Evacuation Analysis
- Fire protection system design
 - Firewater systems
 - Foam suppression systems
 - Hydraulic calculations
 - Clean gas systems
- Fire safety performance-based design (PBD)
- Passive fire protection review and specification
- Passive fire protection optimization analysis
- Local regulation, code and standards compliance review (NFPA, IFC, API)
- Fire protection systems reliability analysis
- fire protection systems Failure Mode & Effect Analysis (FMEA)
- Operational assessment of fire protection systems
- Field hydraulic flow test
- Fire protection systems maintenance plan
- Emergency response and business continuity plans
- Fire safety training
- Fire safety audit

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