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# Oil and Gas Firefighting System Design Review Training Course

28 February – 4 March 2027
Kuala Lumpur

# Oil and Gas Firefighting System Design Review Training Course

**Ref:** 2221_82211 **Date:** 28 February – 4 March 2027 **Location:** Kuala Lumpur **Fees:** 4900 GBP

Oil and Gas Firefighting System Design Review is a 1-week training course for fire protection, safety and facilities engineers who check whether firewater, deluge, foam and passive protection will perform in a hydrocarbon fire, and who produce a firefighting system design review report. Ageing assets, brownfield tie-ins and stricter insurer surveys are exposing gaps between original design intent and site reality. Jupiter Prime Training delivers this course on Oil and Gas Firefighting System Design Review.

## Why Oil and Gas Firefighting System Design Review Matters Now

Three pressures are reshaping fire protection on hydrocarbon sites. Brownfield expansions add process modules without always resizing firewater pumps, rings or monitors, so original demand calculations quietly fall short. Insurers and loss-prevention engineers now ask for evidence that each fire zone is covered, not just a drawing stamp. A site that reviews its systems well contains a pool or jet fire to one area; one that does not risks escalation across the plant. The course rests on Fire and Explosion Hazard Assessment FEHA practice and recognised fire protection codes, described in general terms.

## Who Gains Most from Oil and Gas Firefighting System Design Review

- Fire protection engineers responsible for firewater, deluge and foam system sizing
- Process safety engineers who set fire scenarios and protection philosophy for each unit
- Facilities and project engineers who integrate fire systems into new modules and tie-ins
- Asset integrity engineers who track fireproofing condition and system test records
- Operations safety engineers who own fire pre-plans and emergency response interfaces

Engineering teams preparing a brownfield modification or an insurer survey gain most when fire, process and facilities engineers attend together.

## Oil and Gas Firefighting System Design Review Capabilities

Participants move from fire scenario to pump curve.

- Assess pool, jet and spray fire scenarios to set protection zones — protection philosophy
- Calculate firewater demand for the largest credible fire zone — pump and ring sizing
- Specify deluge, sprinkler and water spray densities for vessels and structures — design acceptance
- Design foam application for tanks, bunds and loading areas — terminal and storage owners
- Weigh passive fire protection against active systems for steelwork and supports — asset integrity
- Build a review findings register ranked by escalation risk — engineering authority

## Key Oil and Gas Firefighting System Design Review Terms

- Fire zone — an area of a plant treated as one fire case, protected by its own deluge and firewater allocation.
- Firewater demand — the total flow needed to fight the largest credible fire plus cooling of exposed equipment nearby.
- Deluge system — open-nozzle piping that sprays water over a whole area when a detection signal opens its valve.
- Foam concentrate proportioning — mixing foam liquid into water at a set ratio to form a blanket over burning fuel.
- Passive fire protection PFP — coatings or boards that slow steel heating so structures keep load during a fire.
- Escalation — the spread of a fire from its first location to adjacent equipment, causing a larger event.

## Oil and Gas Firefighting System Design Review Day by Day

### Day 1: Fire Scenarios on Hydrocarbon Plants

- Pool, Jet and Flash Fire Characteristics — Choosing Credible Fire Cases
- Fire and Explosion Hazard Assessment Inputs — Defining Protection Zones
- Fire Protection Philosophy Documents — Active Versus Passive Balance
- Heat Flux and Escalation Criteria — Spacing and Exposure Decisions
- Fire and Gas Detection Cause and Effect — Triggering Protection Correctly

### Day 2: Firewater Demand and Supply Networks

- Largest Single Fire Demand Calculation — Sizing Total Firewater Flow
- Firewater Pump Duty, Standby and Driver Choice — Supply Reliability
- Firewater Ring Main Hydraulics and Isolation — Pressure at Remote Points
- Storage Tank and Reservoir Capacity — Duration of Fire Fighting
- Hydrants, Monitors and Hose Reels — Manual Coverage Gaps

### Day 3: Water-Based and Foam Systems

- Deluge Valve Sets and Nozzle Layouts — Density Over Vessels and Pumps
- Sprinkler and Water Mist Systems — Buildings and Enclosed Modules
- Foam Concentrate Types and Proportioning — Tank and Bund Fires
- Rim Seal and Subsurface Foam Injection — Floating Roof Tank Protection
- Loading Rack and Jetty Foam Coverage — Terminal Fire Response

### Day 4: Passive Protection and Design Assurance

- Fireproofing Coatings and Cementitious Systems — Steel Support Endurance
- Fire Walls, Barriers and Blast Interfaces — Module Separation
- Hydraulic Calculation Checking Methods — Verifying Contractor Submittals
- Flow Testing and Performance Records — Proving Installed Capacity
- Impairment and Bypass Control — Managing Systems Out of Service

## Day 5: Practising the Firefighting System Design Review Report

- Fire Zone Mapping of a Case Plant — Applying Day 1 Scenarios
- Firewater Demand Recheck After Expansion — Applying Day 2 Calculations
- Deluge and Foam Coverage Audit — Applying Day 3 Systems
- Fireproofing Condition Findings — Applying Day 4 Passive Criteria
- Firefighting System Design Review Report — Engineering Authority Sign-Off

## Applying Oil and Gas Firefighting System Design Review After the Course

- Recheck the largest fire zone demand on a current unit against the installed pump curve.
- Walk one deluge zone with drawings in hand, noting coverage gaps.

## Oil and Gas Firefighting System Design Review Questions FAQ

### What is oil and gas firefighting system design review, and why does it matter now?

It is the structured check that fire protection on a plant matches its real fire hazards. It matters now because expansions and ageing assets often outgrow the original firewater and deluge design.

### Which roles gain most from oil and gas firefighting system design review training?

Fire protection, process safety, facilities, integrity and operations safety engineers gain most.

### How does oil and gas firefighting system design review differ from a fire hydraulics software course?

A software course teaches one modelling tool; this course judges the whole protection design. You check scenarios, demand, deluge, foam and fireproofing against hazards.

### What do you bring back from oil and gas firefighting system design review training?

You bring back a design review report for a case plant, with zone maps, a demand recheck and ranked findings.

## Oil and Gas Firefighting System Design Review: The Way Forward

The firefighting system design review report first informs whether firewater supply and deluge coverage are adequate for the current plant layout. Engineering authorities, asset owners and insurer liaison engineers use it to prioritise upgrades. After the first use, revisit the fire scenarios themselves, because a new module or changed inventory can shift which fire is truly the largest.