

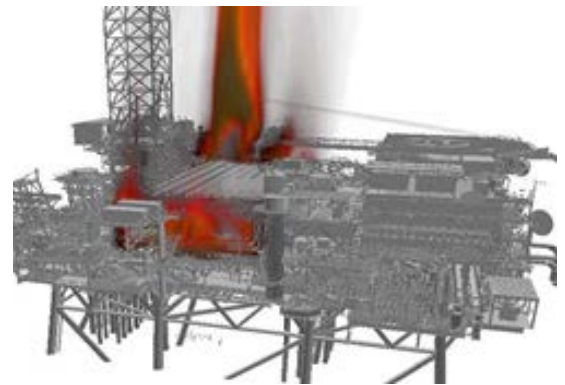
Understanding Hazards & Risks

MMI's experienced staff integrate with other safety, risk, and security professionals, to fully service the client's risk identification and reduction needs, providing more than just a single discipline service. Health, safety, environment and security services include:

- Safety case preparation & thorough reviews (SCR, COMAH, Seveso II, etc.)
- Quantitative Risk Assessment (QRA)
- Safety Management System (SMS) development & auditing
- Safety Critical Element (SCE) identification
- Emergency Systems Survivability Analysis (ESSA)
- Escape, Temporary Refuge, Evacuation & Rescue Analysis (ETRERA)
- Failure Modes Effect & Causality Analysis (FMECA)
- Security vulnerability assessments
- Environmental assessments

Risk management tools & techniques used include:

- ATEX
- BowTie
- ENVID
- Fault Tree+
- HAZCON
- HAZDEM
- HAZOP
- HAZID
- HIRA
- LOPA
- RAM
- SIL



Fire & Smoke Modelling in KFX

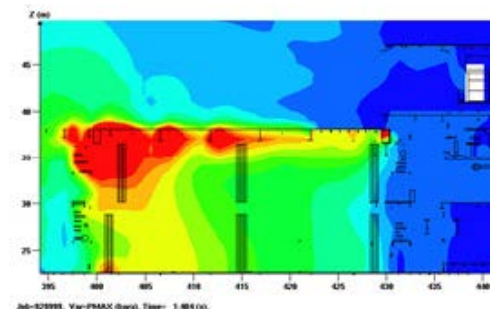
Quantification of the Hazards

Accurate modelling using industry validated tools and methodology allows hazards to be clearly quantified so their impact can be accurately determined. Hazard Modelling undertaken by MMI includes:

- Gas dispersion & explosion
- Jet & hydrocarbon fires
- Design Accident Load (DAL) development
- Smoke dispersion & TR ingress
- Seismic hazard
- LNG, CNG, CO₂, H₂ & H₂S release

Hazard Response Analysis

- Fire load response analysis
- Blast response analysis
- Seismic response analysis
- Extreme environmental load pushover analysis
- Ship impact & dropped object assessment
- Flow assurance & erosion modelling
- Fire & gas detector layouts



Explosion Overpressure Modelling in FLACS