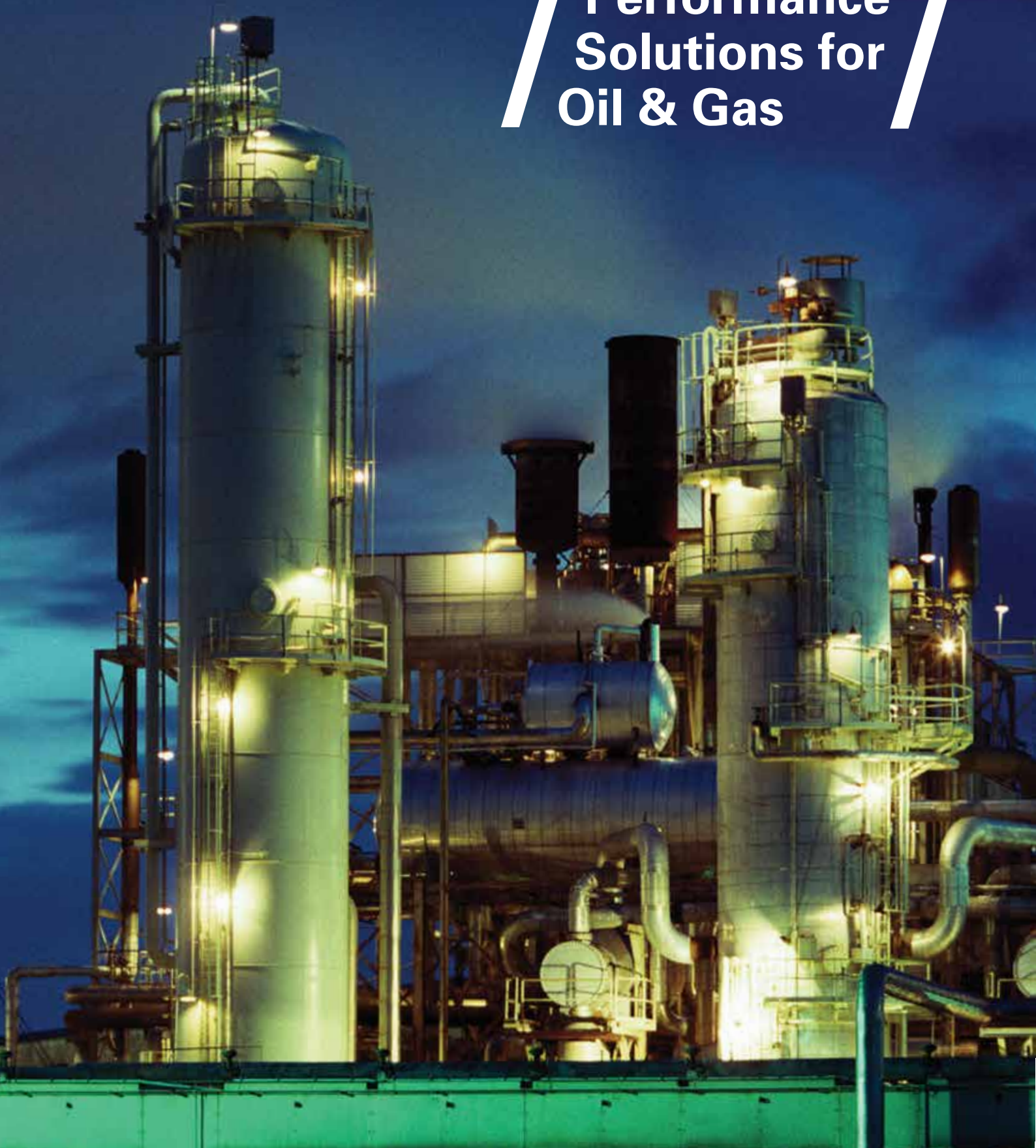


**Performance  
Solutions for  
Oil & Gas**





**/ 90% /**

90% of the top 50 oil & gas companies implement Tyco solutions to help protect what matters most – people, production and the environment.

## A Key Industry with Complex Demands

The oil & gas industry accounts for over half of the world's energy consumption. With valuable oil & gas reserves concentrated in increasingly remote areas and companies seeking improvements in performance and efficiency, a complete safety plan is more important than ever.

These diverse settings demand best-in-class fire protection products and comprehensive solutions for all types of facilities, including: offshore and land based drilling, pipeline transmission, refining and chemical processing, bulk storage and transportation. Solutions must be easy to implement and be ahead of the curve.

Tyco supports your objectives by:

- // Ensuring regulatory safety standards are met or exceeded
- // Ensuring health and safety of employees and the environment
- // Mitigating risk factors
- // Maximizing plant and asset utilization
- // Maximizing staff efficiency and effectiveness
- // Adhering to corporate sustainability policies

Tyco serves industrial customers

with over 100 years of experience in fire protection product design, manufacturing and consulting. Tyco has developed many industry firsts:

- // Automatic sprinkler system
- // Commercial cooking fire protection system
- // Sustainable gas clean agent system
- // Self-educing foam nozzle

Tyco is committed to providing high-value products and innovative services that exceed the expectations of our customers.

With more than 200 Tyco personnel serving as active members on over 600 councils, professional committees and oversight boards around the world, no other company offers fire protection solutions with as much expertise.

As a global company, Tyco is dedicated to complying with EH&S laws and regulations wherever we operate around the world. We seek to conserve energy, water and raw materials while recycling and reducing waste. Our EH&S policy is the basis for our commitment to environment, health and safety programs.

**CHEM GUARD**

**Simplex**

**FLAME Vision™**

**THORN SECURITY**

**HYGOOD**

**SABO FOAM**





# /200/

WILLIAMS FIRE & HAZARD CONTROL has been credited with over 200 successful responses spanning the globe since 1980

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## WILLIAMS FIRE & HAZARD CONTROL

The WILLIAMS FIRE & HAZARD CONTROL team has developed tactics and equipment that assure the greatest margin of safety for internal fire response brigades. The WILLIAMS team leverages experience in hundreds of land and marine-based incidents when assessing facility-specific risk profiles.

In advance of any event, our team will work with you onsite to assess and diagnose the challenges and exposures unique to your facility, prescribing solutions tailored to meet your potential threats. The team will define necessary portable and systems-based fire protection and author incident-specific fire response plans— including onsite personnel and localized municipal or mutual-aid programs.

With over 200 successful responses spanning more than 30 years, the WILLIAMS team is expert at extinguishing fires safely and building equipment that exceeds all challenges faced.

### Services

- // Site analysis/risk assessment
- // Scenario-centric response pre-planning
- // Portable large volume fire protection
- // Equipment manufacture
- // Fire suppression systems engineering
- // Flammable liquids fire response training
- // Active response support
- // Tier 1: offsite consultation
- // Tier 2: onsite consultation & logistical support
- // Tier 3: full scale fire response including men and material

### Response Expertise

- // Storage tank fires
- // Marine vessel fires
- // Pipeline emergencies
- // Tire fires
- // Transportation emergencies
- // Toxic & flammable vapor control
- // Chemical fires
- // Subterranean fires
- // Loading dock/terminals
- // Pump rental



## Performance Products

Oil & gas customers don't just need to comply with regulations at their facilities; they demand high performance at every step. This is why 90% of the top 50 oil and gas companies implement Tyco solutions.



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## Foam Concentrates, Dry Chemicals & Equipment

Through our ANSUL, CHEMGUARD, SABO, SKUM, TOTAL and WILLIAMS FIRE & HAZARD CONTROL brands, Tyco manufactures a wide variety of foam, dry chemicals and related hardware. Our specialist team will work with you to provide site assessment, engineering design, fabrication and training, as well as field start up services and maintenance programs.

### Foam Agents

Tyco offers a full range of AFFF and AR-AFFF foams, high-expansion foam concentrates, protein foams and fluoroprotein foam concentrates. Our product lineup features THUNDERSTORM 1% X 3% AR-AFFF foams, used by WILLIAMS FIRE & HAZARD CONTROL when responding to the world's largest industrial fires.

### Dry Chemicals

ANSUL Purple-K dry chemical is extremely effective against Class B fires. ANSUL Purple-K has shown to be at least 4-5 times as effective in extinguisher applications as carbon dioxide, and more than twice as effective as sodium bicarbonate-based extinguishers. WILLIAMS PKW is a highly specialized, silicon-based version of Purple-K and is extremely effective against pressurized fires. Its deep purple color also ensures that firefighters are able to stay on target.

### Foam Monitors

Tyco offers a comprehensive line of manual and remote control monitors, with the WILLIAMS Ambassador 2X6 and Battler 2X10 large volume delivery guns (capable of discharge rates of up to 10,000 GPM).



## Foam Concentrates, Dry Chemicals & Equipment

### Nozzles

Tyco offers hand-line and monitor nozzles and educators intelligently designed from performance data gained responding to real industrial fires.

// The WILLIAMS HYDRO-FOAM RANGER series of nozzles feature self-proportioning technology, eliminating pressure requirements and inherent pressure drops when using jet pumps or inline educators

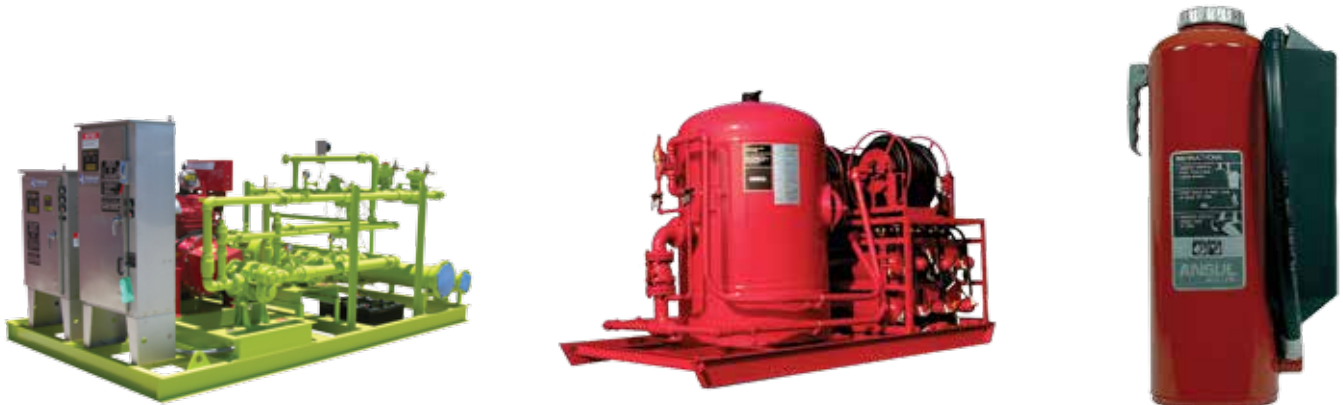
// WILLIAMS HYDRO-CHEM systems use water/foam streams to propel dry chemical approximately 3-4 times farther than that of conventional dry chemical equipment

### Quick Attack Units

Initial response efforts and the rapid deployment of mobile units often serve as the key to confinement, extinguishment and life safety when addressing flammable liquid fires. ANSUL, SKUM and WILLIAMS units provide high-volume storage, high-capacity flow, and are extremely mobile.

### Transportable Pumps

Water is essential to fighting fire – and our pumps ensure water is always available. For decades, the WILLIAMS brand 4,000 GPM and 6,000 GPM Dependapower pumps have been workhorses in delivering a powerful response to industrial fires. Pumps may be configured as a trailer package, a skid mount or fixed as a permanent pump asset in your facility. Further, the WILLIAMS submersible pump series can access natural or man-made water basins as potential auxiliary water resources to sustain fire response or to boost the efficiency of centrifugal pumps.



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## Foam Concentrates, Dry Chemicals & Equipment

### Foam Proportioning

Tyco designs, engineers and manufactures a broad line of proportioning devices including line, ratio-flow controllers, ultra-wide and in-line balanced pressure units. Rugged, high quality and proven, these devices accurately and dependably proportion foam and water in a variety of applications.

For fire protection in large facilities, Tyco also designs and manufactures pump skids – both balanced pressure and in-line balanced pressure. These pump skids can be built to customer specifications and are designed to deliver large quantities of foam concentrate.

### Large Dry Chemical Systems

Tyco offers powerful ANSUL dry chemical suppression systems that use proven technology to fight the toughest flammable liquid and gas fires. Manual systems are especially effective in areas where hand portable and wheeled extinguishers may not provide sufficient capacity. Further, customized piped systems are also available for those seeking the ultimate automatic, high-tech dry chemical solution. Piped systems provide automatic fixed nozzle capabilities that include detection and alarm, electric or pneumatic actuation and shutdown of any necessary equipment.

### Portable & Wheeled Extinguishers

ANSUL RED LINE and TOTAL extinguishers are built to meet the demanding challenges found within high-risk industries. Each extinguisher features a tough, polyester powder-coated carbon steel shell designed to resist impact, vibration and corrosion. A key feature is the separate pressure cartridge, which can easily be removed for replacement – minimizing downtime. The result is an extinguisher that provides the maximum agent flow to quickly extinguish most fires before they become too large to handle.





## Clean Agent and Water Suppression Systems

### Clean Agents

The ANSUL brand INERGEN system utilizes a non-corrosive gas that does not support combustion or generate harmful by-products. INERGEN contains only three naturally occurring gases that have no impact on the ozone or the environment. By lowering the oxygen content below the level that supports combustion, INERGEN puts out the fire and maintains a life-safe, breathable atmosphere.

The ANSUL brand SAPPHIRE suppression system is an effective, environmentally friendly alternative for clean agent applications. This product allows direct contact with sensitive electronics while extinguishing a fire without damage to equipment. SAPPHIRE fixed-nozzle fire suppression Systems use 3M™ Novec™ 1230 fire protection fluid for total flooding applications.

### Water Sprinkler Systems

Tyco is a leader in the development of advanced water-based fire suppression systems. With a complete line of valves and valve systems, including alarm and dry pipe, special application deluge, single and double-interlock pre-action, pressure regulating and pressure relief valves, Tyco can recommend a solution for any application. Our open and closed-directional spray nozzles and high-velocity nozzles are specifically designed for use in special hazard applications. For corrosive environments, alternative materials of construction such as stainless steel, SMO or titanium are utilized to extend the life of a sprinkler.

### Water Mist Systems

Tyco's intermediate and high pressure water mist systems utilize the newest and most unique nozzles developed and approved for fire protection. As an alternative to gaseous, foam and heavy-density sprinkler systems, mist systems mitigate cleanup and water damage. In addition to cylinder systems, Tyco supplies both total flooding and wet pipe water mist pump sets, when the requirement of water demand for the protection of the installation precludes the use of cylinders.



## Flame and Gas Detection

SIMPLEX and THORN fire detection systems can be used for both offshore and onshore facilities. Patented detector technologies provide customers with immediate alerts to fire situations while ensuring false alarms do not occur.

### Alarm Panels

Fast network communications between panels means that even the largest of facilities can be monitored for fires. Events can be viewed at any panel on-site or on optional graphics workstations. In addition to users monitoring the system on-site, systems can also be remotely monitored, allowing unmanned facilities to alert a central control room of any events.

Tyco's fire detection systems also include specialist detectors for high-risk areas such as explosion-proof (flameproof) and intrinsically safe equipment.

### Flame Detection

FLAMEVISION Triple IR and infrared-array based flame detectors accurately pinpoint the source of a fire. The FLAMEVISION FV300 detector utilizes 256 infrared sensors, which identify flame and non-flame sources. The system works with CCTV to automatically identify multiple flame incidents and locations on video.

### Gas Detection

SCOTT personal use multi-gas monitors are designed to monitor potentially hazardous levels of combustible gases, oxygen enrichment or depletion, carbon monoxide and hydrogen sulfide. The multi-gas monitors have a simple and intuitive design, enabling operators to focus on the situation rather than equipment.

Additionally, the SCOTT FREEDOM range of fixed gas detectors are built for harsh environments and incorporate modularity, common components and a common user interface to simplify maintenance and reduce training costs.



## Respiratory Protection

### Self-Contained Breathing Apparatus

With an unmatched record of superior performance and dependability, SCOTT Air-Pak Self-Contained Breathing Apparatus units have earned the confidence and respect of countless industrial SCBA users. The unique dual-redundant pressure reducer, coupled with the innovative and patented SCOTT Vibralert end-of-service indicator, provides dependable, peace-of-mind protection even in the most demanding industrial applications.

### Facepieces

The key to SCOTT advanced facepieces is top-down convertibility. Each facepiece requires only a single fit test. This provides a full-facepiece solution for all applications, while minimizing inventory costs and training time.

### Air Purifying

SCOTT's twin cartridge solution supports half-mask and full-facepiece air purifying respirators, while our 40mm cartridge solution supports APR and PAPR applications. This provides a flexible air purifying solution with full-cartridge selection and breakthrough technology to support your varying needs.



**/ 4500 /**

Every year, Tyco Fire Protection Products trains more than 4,500 people worldwide, with live training in our state-of-the-art facilities, off-site at customer locations, online, or through webinars

# Training

Tyco offers a wide range of training services for end-users, distributors, contractors, engineers and others. Many of our programs offer continuing education units upon completion of training programs.

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## Our Comprehensive Training Programs

### **WILLIAMS FIRE & HAZARD CONTROL XTREME School**

The XTREME Industrial Fire & Hazard training event is a unique opportunity for Industrial and Municipal firefighters to learn about industrial-related fire scenarios involving flammable liquids and gases. Classroom, field demonstrations and live-fire exercises illustrate:

- // Fire dynamics
- // Incident logistics
- // Response tactics
- // Thin-skinned and pooling fires
- // Fuels-in-depth
- // 3-dimensional fire scenarios

Working shoulder-to-shoulder with the industry's leading industrial response personnel in hands-on field exercises (including live-fire extinguishment) attendees gain firsthand knowledge on assessment and response.

Lessons include fire behavior, field hydraulics, foam chemistry and proportioning, HYDRO-FOAM and HYDRO-CHEM tactics, incident assessment and response calculations, large-volume strategies, asset management and logistics.

### **Classroom Training**

Tyco offers several valuable training programs throughout the year at our state of the art facility in Cranston, Rhode Island, USA, designed to meet the learning needs of a broad array of audiences: engineers, designers, installers, contractors, home builders and authorities having jurisdiction. These sessions include classroom learning in a 50-seat auditorium, hands-on training in a specialized valve room and sprinkler demos in fire test cells.

### **TechXchange Webinars**

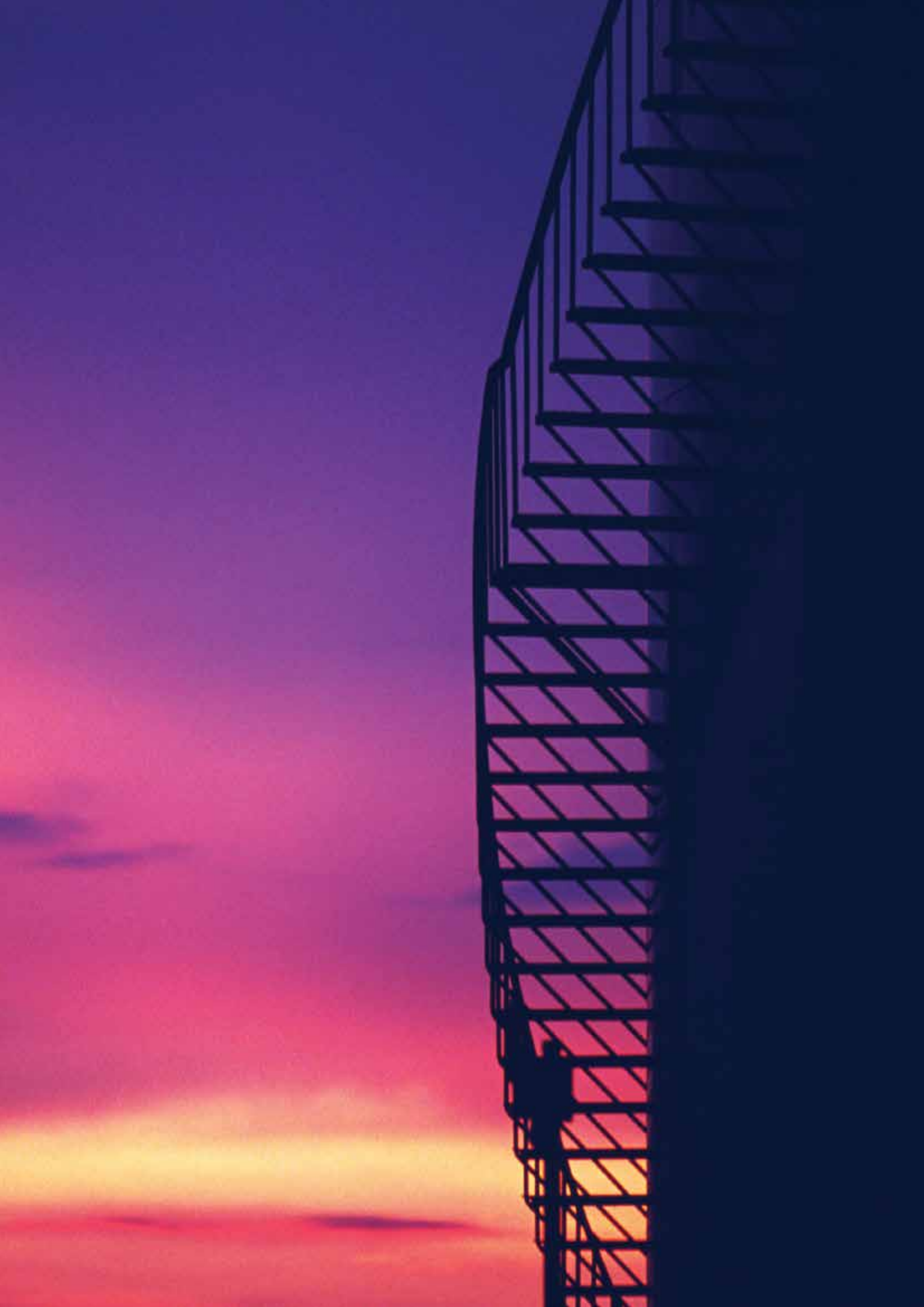
Our scheduled online training programs are built for customers who want to balance the value of interacting with industry experts with the cost of travel. Choose from dozens of educational topics which are available in multiple languages.

### **TechXchange E-Learning Courses**

E-Learning programs are professionally narrated with visuals, animations and interactive practice questions. Watch, interact and learn when the time is right.

### **Live Training – ANSUL Fire School**

Founded in 1948, ANSUL Fire School is located on a 350-acre campus in Marinette, Wisconsin, USA. Created to teach people how to use dry chemical fire extinguishers, the school has since evolved and expanded to train more than 50,000 people. The basic three day program includes a mixture of classroom and field instruction in proper techniques of fighting 25 different types of flammable liquid and gas fires, simulating actual hazards found in the industry.



## Contact Us

Don't leave vital infrastructure and facilities to chance. Choose Tyco to protect the people and places that matter to your business. With the right services and products to meet any need, the right solution is always readily available.

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### Make the Smarter Decision Today

When it comes to hazard containment and risk mitigation techniques for the oil & gas industry, Tyco is unrivaled, given our global footprint, product range and emergency response capabilities. Tyco is ready to increase your business' safety at every level, while ensuring that solutions benefit productivity and reduce costs.

With products and services driven by cutting-edge technology and innovation, you never have to worry about falling behind when it comes to lowering risk and increasing benefit in the event of the unpredictable. That's the power of implementing intelligent solutions to the oil & gas industry's inevitable challenges.

Contact a Tyco representative today to begin exploring a smarter approach to protecting your facilities, people and production. We're always eager to answer any questions and provide customized, unparalleled insight specifically tailored for your business.

Visit our website to learn more about Tyco and our full line of products and services: [www.tyco.com](http://www.tyco.com)

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