ESSENTIAL ELEMENTS FOR SAFE OPERATIONS
CHEMICAL PLANT SOLUTION
What is a Chemical Plant and What Concerns Need to be Addressed?

Chemical Plants are complex facilities where chemical compounds are created and stored. Often, given the large amounts of chemicals kept in these plants, these facilities pose hazards for both working staff inside and people or animals living nearby. If mishandled, accidents can be deadly.

Ensuring the safety of all aspects within the plant – from property safety to staff safety and production safety – is the top priority for all chemical plants. However, due to the high-risk nature of these unique facilities, traditional security methods like manual inspections might not be as safe or efficient as they once were.

The Hikvision Chemical Plant Solution

Whether it’s a single- or multi-site operation, Hikvision answers these concerns by offering an all-encompassing solution that focuses on four critical components. This solution not only improves property safety with its top-notch security solution, but also helps improve operational safety and efficiency through adapting Artificial Intelligence-powered functionality. All together, Hikvision’s solution aims to build a more secure chemical plant.
Personnel Management
Effective Protection and Efficient Management

PPE stands for Personal Protective Equipment – protective wear that ensures worker safety. Hikvision now offers intelligently detection of helmets or other PPE.

For example, the embedded Hard hat detection can notify relevant personnel if a worker is found not wearing one where required. This helps to improve the safety level without requiring extra manpower to oversee.

Access Management for Plants and Workshops

Entering and Exiting During Rush Hours
Workers usually wear gloves and/or carry merchandise, making it difficult to use authentication methods that require physical contact. Additionally, clocking in and out is time-consuming with large numbers of workers. If a card-based authentication is used, there is also the problem of fake attendance records.

Face recognition terminals now make access authentication accurate, efficient, hygienic, and impossible to counterfeit.

Quick and Easy Movement Throughout the Warehouse
In the warehouse areas, forklifts and other equipment constantly pass from one zone to another. Face recognition technologies offer a smooth and convenient way to access various areas, for example, through a roller shutter door, without having to have workers get down from the forklift.

MinMoe
Face Recognition Terminal
DS-KIT671TM-3XF

DeepMind NVR
iDS-9632NXI-18
DS-2CD7546G0-IZ(H)SY
Hikvision's employee attendance function can be seamlessly integrated with third-party OA or Time Attendance Systems, vastly improving the efficiency of employee management.
Vehicle regulation and management is especially important at chemical plants because vehicles often carry hazardous or toxic materials that require special training licenses and extreme caution. Driving over the speed limit or illegal parking in prohibited areas could have disastrous consequences.

With Hikvision’s specially-design traffic management products, managing drivers and vehicles within the plant immediately becomes safer, easier, and more efficient.

On-Site Driving Regulations and Management

Entrance & Exit Control

Hikvision offers convenient and efficient entrance & exit control for industrial parks with or without a security booth at the gate. Pre-registered vehicles can pass efficiently via automatic license plate recognition. Visitor vehicles can also conveniently log in at a security booth or remotely using a video intercom device.

Registered Vehicles

- Plate recognition (ANPR Solution)
- Auto-open barrier
- Plate recognition
- Open barrier

Visiting Vehicles

- Security guards check in the control room
- Registers in the toll manually
- Auto-open barrier
- Records the vehicle information
- Plate recognition
- Open barrier
Site Management

Reliably Record and Safely Store All Operations

Perimeter Protection

When dealing with large areas that suffer from low illumination, using a thermal camera can provide clear video – even in zero-light environments. For areas that require higher-level security protection, the combination of radar and dome camera brings both accurate radar and clear visuals together. The link between the two – radar accuracy and dome camera clarity – allows you to easily track any suspicious movements.

Intelligent and Efficient Patrol

Phase 1

On-site Patrols

The traditional on-site patrol methods suffer from several downsides:
- More manpower required
- Low efficiency as all the sites are checked manually
- Potentially dangerous for security to patrol areas with hazardous materials

Phase 2

Remote Patrols

In chemical plants where a production workshop can be too hazardous or simply unfit for in-person inspections, remote patrolling offers a safer and more efficient alternative. Security or production managers can visually check all sites using high-definition cameras based on patrol schedules. Users will enjoy the many benefits that come with remote patrols in their existing security system.

If an event is captured during a patrol, a security guard receives notification and can respond immediately with the necessary protocols.
Workflow for the patrol and improvement process

1. On-site Random Security Patrol
2. On-site Scheduled Security Patrol

Reports for security manager and production manager

- Comprehensive reports include all patrol tasks and process for security manager.
- Reports detail each task for the production manager, who is responsible for resolving problems.

Artificial Intelligence Patrols add intelligence on top of remote methods – now security staff and managers do not have to manually check all video footage. The AI patrol will identify a problem when a captured image triggers pre-set rules. In the past, a security guard had to check images for all patrol locations. However, with AI patrol, only those that have an issue will be sent to security, vastly reducing labor cost. Security can then resolve that specific problem. AI patrols reduce manpower and offer a more intelligent way to quickly respond to any problem.
Temperature Tracking and Warning System

Of all the events that could take place in a chemical plant, fire hazards are the most serious and deadly – and perhaps the most preventable. This is why the ability to foresee such events is particularly important in production and storage areas.

Hikvision’s Thermal Cameras provide continuous tracking and monitoring of temperatures in targeted locations. Alerts or warnings will be sent to relevant personnel upon the detection of abnormal temperature. Utilizing thermal technology helps to effectively detect fire or explosions in the early stages.

Processing Monitoring

In chemical plants, process monitoring is crucial to be able to see and respond to accidents or any property losses timely. However, conventional security devices are unfit for these environments. Hikvision’s anti-corrosion cameras and explosion-proof cameras are specially-designed for these challenging scenarios. With a full portfolio of both indoor and outdoor models, you can easily monitor different areas or processes with ensured device robustness and great imaging capability. For example, an indoor explosion-proof camera can be used to monitor the liquid level of oil tanks.
Command Center

Intuitive and Comprehensive Dashboard

With a 3D image of your chemical plant at the center of the dashboard, you will see all operational data and activity in one place. Whether you’re looking for statistics on operations, security, or employee performance, this dashboard has it all!

AR Command Center

This AR command center is an efficient tool for you to quickly access real-time video feed for different areas – simply click on the tag to switch view window.

24 MP 270° Panoramic and PTZ Camera
DS-2DP2427ZIXS-DE/440/T2