

Shell Pearl GTL Project

State-of-the-art surveillance for world's largest GTL plant in Qatar

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Toni Partipilo

Sales & Proposals Manager
Page Europa



Integrated security and surveillance technology specialist, Synectics, has developed a bespoke CCTV solution to protect the world's largest 'Gas to Liquids' (GTL) plant in Ras Laffan Industrial City, Qatar.

About Pearl GTL

The \$18 – 19 billion Pearl GTL Project, located in Ras Laffan Industrial City, is a joint development between Qatar Petroleum and Shell. It spans 2.5 square kilometres – roughly the size of New York's Central Park. Around 52,000 personnel from over 50 countries helped construct the plant, which is dedicated to converting natural gas into valuable cleaner-burning liquid

fuels and products such as GTL gasoil, naphtha, kerosene, normal paraffins and base oils. Securing this world-class energy project was of vital importance.

For Page Europa, the telecommunications project contractor with responsibility for security system specification, there were several core challenges for the CCTV system provider to meet.

Scale

The sheer size of the Pearl GTL Project presented a significant challenge. Page Europa needed a fully digital CCTV solution that would not only protect the plant area, consisting of office complexes and the vast perimeter fence (measuring 1620 m x 2100 m), but also onshore

process areas and the unmanned offshore platforms. High end H.264 IP encoding capability was a key requirement to enable this level of functionality for such a large site.

Integration

While two separate CCTV systems were required, one to cover the plant and the other to monitor process areas, these systems needed to be integrated to allow full access (with appropriate clearance levels) to all cameras, at any time, from any of the CCTV operator stations. Additionally, all cameras needed to be fully integrated with the site Access Control System (ACS) and Intruder Detection System (IDS).

Resilience

The plant's location meant that technology had to withstand temperatures of -10°C to +50°C (83°C taking into account solar radiation) and varying light conditions. Ensuring maximum coverage of key process areas also meant that surveillance equipment needed to be able to operate in potentially hazardous conditions. Because it was emergency, safety and production critical, the specified system could not drop below 99.99% availability or have a possible single point of failure.

Low Power / Network Impact

Onshore camera stations needed to operate at 230Vac, offshore at 24Vac. The digital CCTV system would be fully dependent on the capability of the Telecoms LAN for transporting video streams without losing maximum resolution, real time viewing, recording and storage capabilities.

Because of its extensive experience of providing CCTV solutions for large scale projects in the Oil and Gas industry, and of working on previous projects in Ras Laffan, it was Synectics that Page Europa turned to for a solution that would fulfil the complex brief.

Mr Toni Partipilo, Sales & Proposals Manager from Page Europa, explained: "Very few organisations have the range and quality of products, combined with system integration capabilities and expertise to develop an industrial solution for a project of this scale. That's why we were keen to work with Synectics to provide security CCTV system at Pearl GTL plant."

The Solution

The solution developed by Synectics enables over 300 COEX™ camera stations, protecting onshore / offshore critical process areas and equipment, as well as key locations such as site access points, office buildings, warehouse space and the entire perimeter fence, to be viewed and controlled from any of the nine specified control centre workstations. Any camera station can also be viewed on the 42" wall display monitor connected to the Synergy XPro Video Management System and controlled using Synergy EX250 CCTV control keyboards.

All cameras, a combination of fixed and PTZ COEX™ MECH/4, pressurised dome and COEX™ FECH/3 (for hazardous areas), are connected using single fibre operation to a Synectics e100 video encoder within marshalling cabinets. These enable footage to be streamed via the LAN system to the central PSN servers where all footage is recorded. The H.264 encoding technology provides high quality CCTV footage whilst utilising the minimum amount of network storage (PSN). This in conjunction with a multicasting network solution, ensures valuable bandwidth is available for other essential site security solutions.

Certified to ATEX Standards and designed to withstand the harshest industrial and hazardous conditions, the CCTV camera stations utilise a range of technologies to ensure that plant and security protection is both effective and efficient. Day / night capability, up to 18x optical zoom, IR enhancement technology, autofocus, adaptive noise reduction

PROJECT DETAILS

Client

Page Europa / Shell

Location

Ras Laffan, Qatar

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(to eliminate streaking), and low light technology all ensure that the clearest picture is possible whatever the conditions.

Pearl GTL CCTV solution developed by Synectics is fully integrated with the third party ACS and IDS systems, a critical component for such a maximum security site. Any incident detected by these systems generates an audio and visual alarm on the control monitors. This alarm automatically triggers a switch in the recording profile which increases the resolution and bit rate allowing real-time recording for mission-critical incidents which is then logged in a separate Incident Locker for later retrieval and review.

Synectics designs integrated end-to-end surveillance control systems for the world's most demanding security environments. We excel at complex projects that require innovative, tailored solutions with high reliability and flexibility, specifically for casinos, oil and gas, marine, public space, banking, transport and critical infrastructure applications. Synectics' Systems division is part of Synectics plc, a global leader in advanced surveillance, security and integration technologies and services.



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