

terminal automation



Petrola says its Elefsis refinery is now the country's most efficient

The right choice

INSTALLATION Terminal automation system supplier FMA Systems recently upgraded the automation and instrumentation systems at the Petrola oil refinery in Greece.

FMA Systems, the UK-based terminal automation supplier, has completed a number of major upgrades to the automated loading and instrumentation system at the Petrola oil refinery and distribution terminal at Elefsis, near Athens. The project marks the latest stage in a 15-year partnership between the two companies, which began in 1988 when the loading site was first built.

FMA's relationship with Petrola began when the oil company – part of the privately owned Latsis group that had merged with Hellenic Petroleum (ELPE) – was developing a new truck loading site at Elefsis. The project was based on a similar terminal in the Middle East and involved the construction of a series of top-loading, single product bays.

Such was the complexity of the project that negotiations, planning and design took two years before building work began in 1990. The site comprised a series of tanks for gasoline, diesel and aviation fuel, and was designed to operate under any circumstances, including computer and programmable logic controller (PLC) failure, with the inclusion of a manual control panel for the pumps and valves.

Design for life

The loading system was designed to be simple: trucks would arrive at the administration office and would be given a loading card once the consignment was paid for which would allow them to pass through security gates to the chosen loading bay, where product was loaded under

supervision. Once the load was complete, the driver would proceed to the customs office to collect a bill of lading, before leaving the facility.

FMA also provided and installed the commercial software and automation ranging from order entry, various entry gates, all loading, pump control and tank valve control.

Sales manager Barry Smith describes the complexity of the system, "Because the design was for one product per bay, and the trucks required more than one product per delivery, they had to go to the first bay for one grade, and were then directed back around using a call-up board to the next bay. This meant it required quite complex software to manage everything."

Smith explains that over time it became difficult to source spares, whilst support contracts from computer suppliers became expensive. "At the same time, Petrola's Management Information Systems (MIS) department became involved in the commercial aspects of the operation, and they decided they needed to be part of this integrated computer system," says Smith.

Working with Petrola, FMA Systems decided its latest computer-based terminal automation system, *taOpen*, would satisfy the requirements of the upgrade, an exercise that would mean modifying the existing software on Petrola's business system and installing 3D process graphics.

How it helped

The introduction of a new automation system coincided with Petrola's decision to convert from

top-loading to bottom-loading, as part of an European initiative that makes vehicle loading safer, reduces air emissions and saves time and money.

Smith says, "Top loading meant that each truck would have to visit one arm at a time, and it was taking about half an hour to fill each vehicle. With the introduction of bottom-loading, Petrola can load using five arms at a time, so the loading time was reduced to about 10 minutes."

FMA engineered the instrumentation side of the new bottom loading system, which went into operation in 2000, and subsequently the automation for a new vapour recovery unit and diesel marking and additive injection operations.

"The Petrola project was probably the most complex system that we have supplied, and we have worked well in close partnership with Petrola personnel to provide a system that meets their requirements," says Smith. "They come to us for help, support and advice, and we are experienced enough and flexible enough to be able to provide it."

The Petrola contract also includes a high degree of support in which FMA employees visit the site every quarter.

Petrola's head of truck loading, Tony Mavrogiannakis, a chemical engineer with important flow measurement expertise, particularly in the area of liquid terminals and electronics, says the introduction of FMA's *taOpen* had meant his terminal is "the most efficient and reliable terminal in Greece".

What's it all about

taOpen is a flexible and comprehensive computer-based bulk distribution system with a Windows interface that is designed to be easy to use. It enables all functions to be run either on a single workstation or on distributed processors.

Capable of interfacing with major supply chain management systems such as SAP™, J D Edwards™ and Sun Systems™, *taOpen* has been installed at depots world wide ranging from the Dominican Republic to Indonesia, and across Europe, Africa and the Middle East.

Depending on the customer's requirements, *taOpen* can be configured to provide any or all of the following functions:

- supervision of vehicle loading and unloading operations;
- vehicle and pedestrian access control;
- internet-ready communications to other supervisory systems;
- stock management;
- two-and three-dimensional graphics;
- tank level gauging; and
- vehicle bunkering.

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