



# Emergency Fuel Shut Off System Automation Improves Operations at Guam International Airport

FuelsManager 10 SCADA Functionality Powers Detailed Graphics of Critical EFSO Data



Supreme Group, a global fuel storage service provider, has been managing the fuel farm at the Won Pat International Airport in Guam for the past six years. During that time, the company has been working with Varec on preexisting fuel inventory management solutions, as well as new upgrades

FuelsManager®, Varec's inventory control HMI (human machine interface) software platform, was integrated with the fuel farm's PLC (programmable logic controller) to help Supreme Group's operators monitor and manage inventory levels transmitted from Varec gauges on the storage tanks. The PLC also provided basic alerts within FuelsManager when an EFSO (emergency fuel shut off) occurred.

## SITUATION

Wanting to improve data communications and automation as it relates to fuel management across the airport, the Operations Manager for Supreme Group had several ideas. He first wanted to tackle the EFSO system. The current system was rudimentary and Supreme Group wanted something more advanced to help minimize downtime across the airport whenever an EFSO occurred. They also wanted to provide the control tower with EFSO data, by specific location, in real time. This detailed information would also be valuable for the fuel farm to help ensure both sides could work together quickly to resolve alarms when they occurred. Supreme Group reached out to Varec to develop a solution that would achieve these goals.

## SOLUTION

Varec has provided the Guam Airport with a variety of hardware and software systems to support inventory control needs at the fuel farm for many years. When presented with the request for a solution to upgrade the EFSO system, Varec's sales and systems engineers suggested the company's latest update for FuelsManager, version 10, along with PLC updates.

FuelsManager 10 is browser-based and includes feature enhancements to both the Inventory Management and SCADA applications. With its user-friendly interface, FuelsManager 10 supports standard internet protocols and security to help reduce the IT footprint for faster deployment. It also includes a powerful custom module editor that allows systems engineers to more easily configure data points that support a variety of automation needs.

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Varec began work on the project in May 2019. The project included the installation of FuelsManager 10 at the control tower and upgrading the PLC to support a more robust EFSO system, then integrating the two. The EFSO enhancements also included custom SCADA graphics not previously available prior to the upgrade.

## RESULTS

With the new SCADA graphics, operators in the control tower are now able to see specifically where an EFSO is occurring, in real time. The graphic shows where all of the EFSO switches are located across the airport. Whenever a switch is initiated, that specific location will illuminate on the graphic. As FuelsManager 10 is browser-based, the fuel farm is able to remotely view the new EFSO system on a monitor in the fuel farm control room. With both areas of the airport on the same network, all of the operators were able to view real-time information when an EFSO occurs.

Airport operators and managers have been very happy with the new system. Having access to detailed critical data, such as EFSO alerts, has been very helpful in managing day-to-day operations. During a recent visit by the airport's regulatory agency, Supreme Group was congratulated on the upgrades made to the control room and EFSO system.

*"It was important that both the fuel farm and control tower had access to the same EFSO data, in real time, in order for everyone to make informed and timely business decisions, based on the most accurate information. Varec did a great job getting our new EFSO system up and running quickly."*

**Darrel Dela Paz - Supreme Group**

## FUTURE ENHANCEMENTS

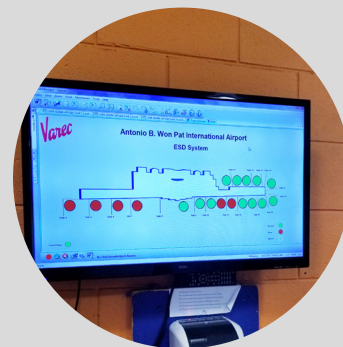
Supreme Group and Varec will be partnering on additional upgrades and technology enhancements over the next few years. In 2020, the second phase of technology upgrades will include a new PLC system to power more data communication and automation throughout the fuel farm. Once in place, the new PLC will automatically isolate and shut off the area where an EFSO has occurred. This new automation will enable operators to resolve EFSO issues safely, while the rest of the airport's fuel operations continue to function without interruption.

Leak detection is another area of concern for Supreme Group. The current leak detection system, which functions in isolation, is also slated for an upgrade in phase two of the project. In this case, the company will be looking to integrate leak detection with the new PLC, enabling these alerts to be viewed and managed within FuelsManager.

The third phase of upgrades will be to update the fuel farm from legacy FuelsManager to version 10, and integration with the new PLC. When this is complete, the control tower will be able to view the fuel farm's inventory data via a remote web browser. In return, fuel farm operators will also be able to monitor status remotely. This is an important feature for the operators, especially during off hours. Hydrant automation will also be included during the third phase. This upgrade will provide automation for pumps and valves as well as monitoring for pressure and flow.



New EFSO System in the Airport Control Tower Running on FuelsManager 10



Remote Monitor of the New EFSO System in the Fuel Farm Control Room