



Control Systems International®



The new **Hong Kong Airport** is located on the island of Chep Lap Kok, most of which was built through a massive land reclamation effort.

The airport handles 35 million passengers annually with an ultimate design capacity of 87 million passengers and 9 million tons of cargo.

This mammoth airport requires a fuel automation system that can move, store, dispense and account for more than 2.5 million gallons of jet fuel each day. It requires a business system that can monitor and account for 12 suppliers, servicing more than 50 airlines.

Because of its power, adaptability, reliability and functionality, the Hong Kong Airport Authority chose the **FUEL-FACS+** supply chain automation and information system, developed by **Control Systems International, Inc. (CSI)**, to monitor and control the complex fueling system at one of the world's largest airports.

## Project Profile: Hong Kong Airport

### Airport Fuel Flies with FUEL-FACS+®



The FUEL-FACS+ system manages more than 2,000 I/O points distributed throughout 51 panels from the system's nerve center in the tank farm control room. A TCP/IP network linking the controllers to the system's operator workstations is designed with redundancy so that any single network link failure will not interrupt monitoring, control and data transfer.

Using real-time, color-graphic screens, operators can supervise the movement of fuel from the Sha Chau Island jetty, where tankers off-load jet fuel into twin undersea pipelines. FUEL-FACS+ operates the pumps and valves that move the fuel seven and a half miles to the airport and into 12 storage tanks, which have a total capacity of 37 million gallons. To initiate a receipt, the operator simply selects a pipeline and a receiving tank. FUEL-FACS+ then automatically positions all the valves, turns on the pumps and starts the batch receipt.

FUEL-FACS+ also controls delivery of jet fuel from the storage tanks through a hydrant system buried beneath the tarmac. The hydrant system feeds fueling take-off points adjacent to terminal-side aircraft parking stands and loading racks for trucks that serve remote stands.

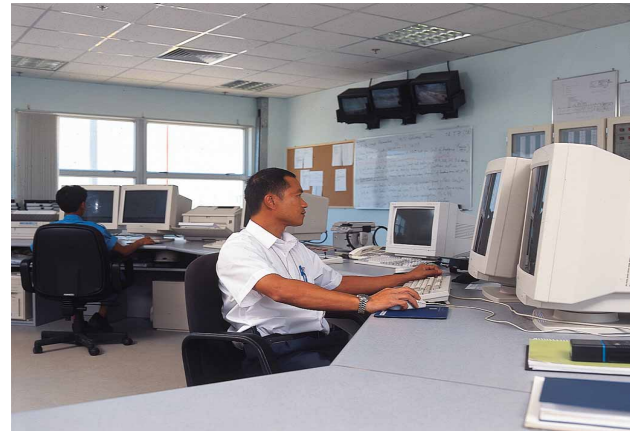
To deliver fuel to the planes, FUEL-FACS+ monitors pressure and flow within the hydrant system in order to meet demand while simultaneously optimizing pump utilization.



## Hong Kong Airport Tank Farm

FUEL-FACS+ also provides control and data monitoring functions for leak detection, security, control of back-up power generation, fire protection and drainage management. These functions are all accessible via fully redundant operator workstations.

FUEL-FACS+ includes sophisticated logic that can deliver fuel to the right plane at the right time and can account for each airline's usage. The system also provides central alarm and event reporting so that unexpected problems do not turn into delayed flights.



## Operator Workstation at Hong Kong Airport

CSI supplied FUEL-FACS+ on a turnkey basis, including procurement and integration of third-party packages. During the installation and commissioning phase of the project, CSI managed technicians from more than 50 contractors to meet the fast-track schedule for the airport opening.

FUEL-FACS+ provides Hong Kong's state-of-the-art-airport with a reliable, functional and adaptable solution to meet its massive fuel distribution and accounting requirements. In the future, as the Hong Kong Airport expands to facilitate more passengers, planes, and fuel needs, FUEL-FACS+, will by design, easily expand and adapt to fulfill those needs.



## Jet Fuel Unloading Jetty at Sha Chau Island



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