

# Vapor recovery hose monitoring



## Oil and Gas Case Study 202-1

### Application

Vapor recovery is required at petroleum transport loading facilities to prevent fumes from escaping into the atmosphere when gas or diesel is loaded from storage tanks to delivery trucks. To facilitate recovery, hoses from the recovery system are connected to the trucks to capture fumes while the truck is loading.

Requirements for vapor control are part of federal air quality regulations. As a result, vapor recovery systems have been in place on petroleum loading docks for years, particularly at refining and pipeline operations. Some states now require loading dock operators to provide a method of verifying vapor control. Under these new regulations, it is the operator's responsibility to not only provide a recovery system at its facility, but also to insure that the system is properly and consistently used by the truck drivers during loading.

### Challenge

Some drivers, not wanting to take the time to hook-up a vapor hose to their trucks, vented vapors directly into the atmosphere. The state's verification regulations stem from the frequent non-use of the vapor recovery systems by delivery truck drivers.

In order to show compliance, operators need a reliable, trouble-free method of monitoring vapor hose use. The ideal vapor recover system is capable of preventing misuse by shutting down loading that is not complying with state regulations. Additionally, operators need a verification solution that is durable enough to withstand harsh operating condition while still delivering a high degree of accuracy.

### Project parameters

User	Refineries
Location	Utah, USA
Media	Air and petroleum vapors
Flow Range	Variable flow rates

Pressure Range	1 to 2 inches H <sub>2</sub> O [2.5 to 5 mbar]
Temperature Range	20° to 100°F [-6.6° to +38°C]

### Solution

FCI's FLT93S FlexSwitch® has the ideal thermal operating characteristics for this type of application -- rugged, no moving parts operation, low flow sensitivity and fast response. Mounted in the hard piping of the vapor recovery system, the FLT93S detects the flow of vapors forced from the truck as loading beings. If the vapor hose has been connected properly, loading is allowed to continue. However, if the vapor hose hasn't been connected, no flow is detected by the FLT93S and the loading process is shut down. Two FLT93S switches are needed for each loading bay so that double-trailer rigs can load simultaneously.

Finding reliable and accurate technology to monitor industrial emissions in the field is more important than ever. The FLT93S has proven itself to loading dock operators as an effective and trouble-free piece of equipment that solves their vapor recovery hook-up hose verification process.

### FCI flow switch specifications

Model	FLT93S FlexSwitch®
Media	Air/gas
Flow Range	0.25 to 120 SFPS [0.08 to 37 NMPS]
Pressure Range	to 3500 psig [241 bar(g)]
Temperature Range	-100° to +850°F [-73° to +454°C]

### Your local FCI representative:



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**FCI is ISO 9001 certified/conformance to AS9000**