



## Guest Commentary

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# Managing Underground Bulk Fuel Storage System

**To improve operating margins, reduce risk of regulatory fines because of leakage and to prevent theft or loss, operators of bulk fuel inventory storage systems must look beyond the basic requirements.**

To reduce the risk of regulatory fines and improve operating margins, a business must apply controls around day-to-day management of the underground storage system.

Think of your automobile as a bulk fuel storage system. Car dashboards present data such as the engine temperature, oil pressure, fuel level and current mileage per gallon. Driver use this data to make fill-up and maintenance decisions. Although your budget may require you to average 20 mpg, your environmental spirit may desire 25 mpg. To meet this more stringent requirement, you might adjust your tire pressure, purchase higher quality fuel or change your engine oil brand. When analyzing your fuel level, you might have a requirement to fill up before you go below a quarter of a tank; however you may want to allow your level to fall close to empty to fill up tomorrow if you knew the street prices were going to fall 10¢.

To remain in compliance with the U.S. Environmental Protection Agency underground storage tank requirements, fuel island operators must provide data to assure the tanks are being monitored and have evidence of little to no leakage. One of the methods to adhere to the requirements is the daily collection of sales and purchases to calculate a theoretical daily inventory balance to be compared with the actual measured ending balance on hand. This method is known as inventory control.

If you analyze the inventory control requirements carefully, you will notice some leakage or loss is allowed during a period of time.

Recently, a fuel island operator had a small leakage resulting in a daily loss ranging from 15 to 30 gal per day equating to a gross monthly loss of fuel of 600 gal. The state inventory control variance requirement based on throughput of sales would have allowed that amount to pass the monthly reporting for compliance. The operator did not have a more stringent business requirement in place and thus was losing 600 gal of fuel per month.

In another example, an improperly calibrated fuel terminal was dispensing 200 gal less than what was indicated on the Bill of Lading for more than two months. The fuel island operator was using inventory control for reporting environmental compliance, and as part of the requirement, was relying on the automatic tank gauge to provide the purchased gallons. Instead of using 8,800 gal from the supply terminal bill of lading, the operator used 8,600 gallons (the amount measured by the tank gauge) in the inventory control variance calculation, and thus the issue went undetected for months.

For inventory management, your business requirements may focus on minimizing run-outs and purchasing fuel at the least cost. The purchase costs can be reduced through a number of



ways such as load shifting and having a multiple supply options. Load shifting is a concept where you delay or accelerate a delivery time around an anticipated price movement in the market. Similar to the example with your own automobile, a dispatcher may elect to defer filling up a bulk inventory tank today knowing prices are falling and the delivery can wait until tomorrow.

To achieve business and compliance, your bulk fuel management system should allow you to analyze your data against multiple sets of requirements and alert you when they will not be met, even if they conflict with each other. With the proper business processes in place, an organization can take full advantage of this information to mitigate further loss of inventory, minimize procurement costs and reduce risk of regulatory fines for non-compliance due to unreported leakage. ■

*Scott Cilento is responsible for the Fuel Management System product line life-cycle ranging from requirements definition through customer support.*