KAFCO Optimizes Fuel Consumption Using Emerson’s™ Rosemount™ Non-Contacting Radar

RESULTS
• Pumps prevented from running dry
• Improved control of fuel flooding
• Reduced maintenance
• Overfills avoided
• Increased site safety

APPLICATION
Level measurement and control of jet fuel

CUSTOMER
Kuwait Aviation Fuelling Company (KAFCO), Kuwait

CHALLENGE
KAFCO, established in 1963, specializes in fueling operations for the aviation industry. KAFCO delivers more than 600 million liters of Jet A-1 fuel annually and its customers range from commercial carriers to the military. The 140,000 sq. meter depot at Kuwait International Airport hosts six storage tanks with a total capacity of 50 million liters.

The underground tanks are emptied and refilled frequently and correct analysis of the level is crucial to ensure safe operation. Overfilling the tanks would create a major safety hazard due to the explosion risk, and fuel leaking into the soil could lead to extensive environmental issues. Furthermore, an overfill situation would also lead to costly product losses.

The process is faced with both turbulence and condensation, making measurement accuracy and reliability a challenge. The previous solution using floating capacitance level transmitters posed a risk because the devices did not detect level properly and the alarm system was inadequate. Part of the problem was that the probes were getting bent from the force of filling and emptying of the tanks, resulting in insufficient accuracy of stock levels. KAFCO needed a solution that provided reliable level measurement and would detect possible overfills in time.

“Instrumentation required enhancement to conform to the latest design and technology”
Hamad Jaber Al Rashidi
Electrical & Instrument Engineer

The site houses five underground fuel tanks for jet fuel.
SOLUTION
Rosemount 5401 Non-Contacting Radar Transmitters were installed in KAFCO’s underground tanks. The Rosemount 5401 provided many benefits. A higher degree of control was achieved which prevented pumps from running dry, resulting in optimized fuel consumption. The non-contacting radar technology is not affected by coating or dirty and corrosive conditions, leading to reduced maintenance. Furthermore, with non-contacting technology there is no risk of bent probes. The Rosemount 5401 also helped KAFCO to make the site and the surrounding environment more secure due to enhanced overfill prevention detection.

Replacing the old floating capacitance level transmitters with Rosemount 5401 enabled KAFCO to avoid potential product losses and potential fines for environmental damage.

RESOURCES
Rosemount 5400 Non-Contacting Radar
EmersonProcess.com/Rosemount/Level/Non-Contacting-Radar/5400-Series

Emerson Process Management Oil & Gas Industry
EmersonProcess.com/Industries/Oil-Gas