



## Radar Level Gauge Upgrade Without Storage Tank Downtime

When a large petroleum-based tank storage facility in Southern California wanted to upgrade their mechanical level gauging and reporting capabilities, they turned to the company they have trusted for years, L&J Technologies. Forty-eight tanks in the facility were utilizing older float and tape gauges with transmitters as their sole level measurement devices. The older devices were requiring more maintenance which could require downtime for individual tanks. During initial discussions, the project manager voiced concern about the length of downtime during each tank's upgrade, and the need to limit it as much as possible. After reviewing the tank drawings and specifications, L&J Technologies suggested a complete setup from the tank

to the control room to improve both the reliability and accuracy of both the level gauging and reporting from the tanks while leaving the float and tape gauges with transmitters in place as a redundant system without the need for any downtime. The complete setup from the tank to the control room consisted of the evo 2600 Radar Level Gauge with an evo 2600SW Stilling Well Adapter along with the MCG 1350M Ground Level Display on all forty-eight tanks, a single MCG 3210 Field Interface Card Rack, and the MCG 3900 Inventory Management System.

The evo 2600 and evo 2600SW Stilling Well Adapter makes for an ideal level gauge for anyone who wants to replace their float and tape gauge. However, in this application, it was installed into the



Location: **Southern California**

Products: **evo 2600 Radar Level Gauge**  
**evo 2600SW Stilling Well Adapter**  
**MCG 1350M Ground Level Display**  
**MCG 3210 Field Interface Card Rack**  
**MCG 3900 WINGauge Inventory Management System**

Project Size: **Forty-Eight Storage Tanks**

**Benefits:**

- Improved Reliability
- No Downtime During Installation
- Future Expandability
- Retained Older Float and Tape System as a Redundant Level Gauge System



Photo of MCG 3210 Field Interface Card Rack.



Photo of MCG 3900 WINGauge Inventory Management System.

tanks while they were in service by modifying an existing manhole cover on each tank. This still well application allowed the radar to be installed at almost any point throughout the tank regardless of the location of the manhole. The contractor removed the manhole cover and added a 1.5" NPT process connection to fit the evo 2600SW configuration. This manhole modification made it possible to utilize the existing float and tape gauges with transmitters as a redundant level gauge solution since the infrastructure was still intact.

The addition of the MCG 1350M Ground Level Display made it unnecessary to climb the tanks to access the difficult locations to perform any programming or calibrations. They were able to use their existing MCG 2150 Remote Calibrator which could be used to program and calibrate the new radar level gauges as well as their current transmitters without any hard wired connections or ever removing the housing, saving them time and money.

To accommodate the future expansion of the system the MCG 3210 Field Interface

Card Rack and the MCG 3900 WINGauge Inventory Management System were installed. The MCG 3210 allowed the MCG 3900 to communicate with the field devices using the L&J Tankway communication protocol, as well as regulate the device power, signal, and voltage levels protecting the control room equipment from receiving any misapplied power or surges. The MCG 3900 provided the operators instant real-time tank gauging, as well as live and historical display of product levels.

The Regional Engineer and Project Manager were extremely happy with the immediate reliability improvement over the float and tape system without any interruption to the tank operations as well as now having a redundant level gauging system. The success of the system has led the Regional Engineer to start expanding the upgrade to another eighty-five storage tanks with the evo 2600 Radar Level Gauges with evo 2600SW Stilling Well Adapter, and MCG 1350M Ground Level Displays utilizing the existing MCG 3210 Field Interface Card Rack and the MCG 3900 WINGauge Inventory Management System.

### System Layout

