CUSTOMER CASE STUDY

Elecsys Helps US Railroad Monitor Fuel Tank Levels

Application of SentraLink, RediGate, and the Elecsys Connect IIoT Platform

A major Class 1 railroad in the United States runs a network of thousands of track miles from the US Midwest through nearly a dozen states and Mexico. Their routes provide efficient north/south rail route to essential ports and industrial cities south of the border. Like most Class 1 railroads, the line refuels their locomotives from large, strategically located diesel storage tanks.

The railroad's fuel procurement division wanted a cost-effective way to monitor fuel tank levels and receive timely alerts when the tank levels became low. The previous tank monitoring system was not working as they had hoped, and they needed a reliable solution. Various tanks used an assortment of sensors from different manufacturers, which presented a challenge when designing a comprehensive system. The new solution needed to be flexible to handle data from the multiple sensor types.

Elecsys International met the challenge by installing remote monitoring devices at each fuel tank to capture fuel levels and fuel temperature (when available). The solution included:

- The RediGate industrial network gateway to read Modbus protocol-based devices (PLCs or sensors)
- SentraLink DR to read 4–20 mA sensors
- Cellular modems to report fuel level data from the gateways to the Elecsys Connect IIoT platform.

Managers and local technicians can now watch fuel levels by logging in to Elecsys Connect to see the current tank level readings and historical trends, and to set alarm levels. Elecsys Connect also sends "low level" notifications by e-mail or text message and notifications when the levels return to normal.

The new system offers other advantages. For example, the fuel procurement division:

- Can independently verify the amount of fuel delivered to ensure they are correctly invoiced.
- See current fuel levels and long-term usages trends to strategically plan their fuel purchases.

Overall, the Elecsys system gives the railroad's fuel procurement group the means to manage their fuel situation much more efficiently and cost-effectively.