Fuel balance control in oil field service company

Challenge

Calfrac Well Services Ltd. (CWS), Canada, is one of the world's largest oil field service companies. The fleet of its representative office in Russia consists not only of specialized machinery, such as hydraulic fracturing equipment or coiled tubing units but also of trucks.

The company searched for a solution that would help cope with the problem of fuel frauds committed by drivers. After a monitoring system had been installed, the number of fuel thefts decreased. However, the issue with fuel was still unresolved.

- Fill-ups had to be tracked for a fleet of 500 vehicles, and each of them needed a refill about once a day. The issue of regular underfill was of extreme importance.
- The company had its fuel reservoirs at remote locations where there was no fueling control at all.
- Some drivers tried to get around the monitoring system. They would damage the wiring in the sensors, screw antennas out of monitoring hardware, and even disconnect the sensors through software. When this occurred, the company bore losses both due to the fuel stealing and the necessity to send a specialist to the site to fix the damage.

Solution

Montrans has developed a solution that allows comparison of the fuel amount both supplied during a fill-up and that got into the fuel tank. In addition, the system helps quickly detect unauthorized interference with the equipment operation.

- Montrans fuel consumption controllers (FCCs) were installed on remotely located reservoirs and refueling trucks. Fuel distribution became personalized from that moment on.
- Montrans FCCs are connected to an electromagnetic valve, which will not open or let the fuel supply start until the driver puts a fuel card, pre-recorded in the controller, to the RFID reader.
- The card number and the amount of fuel supplied are sent to the server. The volume of the fuel that was distributed into the fuel tank, according to the data from the fuel level sensors, is put down next to the fuel supplied.
- The absence of telematics data from a unit is also displayed in the diagram. Usually, it indicates that there is interference with the fuel level sensor operation. The customer can immediately send an engineer to the site to fix the problem.
- Reports from the application can be exported to Excel.
- Information about Gazprom Neft and oil-pumping station fuel cards has been integrated into the system. As the customer gives fuel cards for a driver, and not for a vehicle, the information had to be integrated from 1C based on trip tickets so that it would become clear which driver refills which vehicle.
- Apart from the Montrans web application that deals with the comparison of the amount of the fuel filled vs. fuel supplied, and helps detect unauthorized interference with the equipment, the solution also uses the Omnicomm platform, which ensures transport monitoring.

Results

The customer has noted a tremendous reduction in fuel consumption since the implementation of the solution.

Fuel costs reduced by 40%

Dishonest drivers know that their actions will not go unnoticed and prefer not to risk and steal fuel during a fill-up.

Equipment under control

Unauthorized interference with the sensor operation can be quickly detected and acted upon.

Comprehensive approach

Now, the telematics solution monitors fuel both in vehicles and in fuel reservoirs and refueling trucks.

Company profile

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