

TTK DIESEL LEAK DETECTION SYSTEM AT A MAJOR RAIL REFUELING STATION, USA



PROJECT BACKGROUND

An American leading rail operator manages a vital Refueling Facility - a rail yard and key refueling point for trains traversing the Northern United States transcontinental route.

With daily throughput reaching up to 250,000 gallons of diesel fuel, the facility plays a crucial role in the company's logistics and operational continuity.

PROJECT OVERVIEW

Project The largest freight railway in the United States (*)

*: Due to client confidentiality, the client name has been removed from this project study.

Location The United States

Application Fuel leak detection of mobile rail tank cars

Project Type New project

Project followed by TTK USA Inc.

Contract Scope TTK design and supply of the fuel leak detection system

Completion Date May 2025

Technology FG-NET-LL Digital Monitoring Unit;
FG-ODC12-UV addressable oil sense cables with UV braids



CHALLENGE

The client faced two critical needs:

- **Preventing product loss** due to undetected diesel leaks from rail tank cars.

- **Proactive environmental protection** to mitigate the risk of soil and groundwater contamination.

Given the facility's scale—nearly a mile-long storage and refueling area—traditional diesel fuel leak monitoring methods were insufficient for rapid detection and precise localization.

TTK's SOLUTION

TTK partnered with the client's engineering firm to design and deploy a tailored diesel fuel leak detection system for the rail yard. The solution focused on delivering:

- Immediate diesel fuel leak detection along the full length of the storage area.
- Accurate pinpointing of diesel fuel leak location within minutes, minimizing response time and potential environmental impact.

Key Technologies Deployed

- FG-ODC12 Sense Cables with Pre-installed UV Braid:

These high-sensitivity, robust sense cables are engineered for harsh outdoor environments. The UV braid ensures long-term durability and performance under direct sunlight and variable weather conditions.

- FG-NET-LL Digital Control Panel for Continuous Monitoring:

The system provides real-time alerts, allowing facility managers to respond instantly to any detected diesel leak.

Results

- Enhanced Operational Safety:

The facility now benefits from rapid, accurate leak detection, reducing the risk of fuel loss and costly cleanups.

- Environmental Protection:

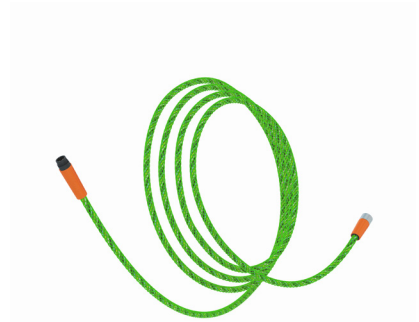
Early detection allows for swift containment, minimizing environmental impact and demonstrating the client's commitment to responsible operations.

- Custom Engineering:

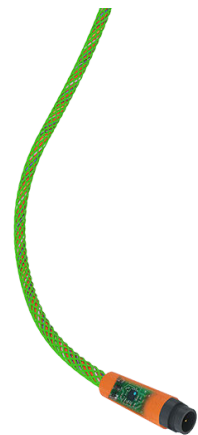
The use of FG-ODC12 sense cables with UV protection ensures system reliability and longevity, even in challenging outdoor conditions.

Conclusion

Through close collaboration and advanced sensing technology, TTK delivered a leak detection solution that meets the demanding requirements of a major rail refueling facility, supporting both operational efficiency and environmental responsibility.



Addressable High-Sensitivity
Oil Sense Cable: FG-ODC



Oil Sense Cable FG-ODC with
microchip embedded



FG-NET-LL monitoring control panel
for Hydrocarbon Leak Detection

