



LIQUID LEAK DETECTION SYSTEMS

Case Study

TTK FUEL LEAK DETECTION SYSTEM IN CITY CENTRE MIRDIF, UAE



PROJECT BACKGROUND

City Centre Mirdif is a shopping mall in the residential area of Mirdif, in Dubai, United Arab Emirates.

It opened on 26 March 2010 and has a gross leasable area of 196,000 m² and houses 465 retail stores.

PROJECT REQUIREMENTS

In this hyper-scale shopping mall, several diesel-powered engine-generators provide emergency power in the event of a loss of station service power.

PROJECT OVERVIEW

Project City Centre Mirdif

Location Dubai, UAE

Application Leak detection in shopping mall

Project Type New project

Project followed by TTK Middle East

Contract Scope TTK assures engineering, material delivery, installation, testing & commissioning, start-up & handover of the leak detection system

Completion Date November 2022

Technology FG-ALS4-OD four zones monitoring unit;
FG-OD addressable oil sensing cable



City Centre Mirdif

However, if any fuel/diesel leaks go undetected in generator rooms and prevent generators from working, the shopping mall would still be forced to close. That's why the end user requested TTK to supply a reliable liquid leak detection system to monitor the generators and their auxiliary equipment (day tank, pipes) 24/7, to ensure an uninterrupted functionality of the whole system.

AREAS TO BE PROTECTED

The scope of fuel leak detection work for the Mirdif shopping mall is to protect seven day tanks which fuel generators located in different generator rooms.

TTK's SOLUTION

For this project, TTK ME recommended its fuel leak detection system, using FG-ALS4-OD leak detection control panels and FG-OD fuel sensing cables in different lengths.

Sense cable

- Insensitive to water (as are all TTK oil sensors), the FG-OD cables detect the presence of liquid hydrocarbon at any point along their length. They were installed in the generator rooms, near leak sources in this project.
- Technical advantages of TTK's hydrocarbon sensing cable:
 - Detects quickly, even small quantities of hydrocarbon liquid, allowing to give very early alarm and gain precious time for operators to react in the event of a leak.
 - Reusable, allowing onsite testing and significantly reducing equipment cost.
 - Every individual cable is addressable and independent, allowing the detection and location of multiple leaks in the same circuit.

Monitoring panel

- To monitor all sensing cables, a multiple-zone alarm & locating panel (reference name FG-ALS4-OD) was installed in the generator rooms.
- Equipped with a touch screen, relays and RS485 Modbus serial link interface, the panel works as a stand-alone system and monitors up to four independent zones and pinpoints the location of leaks.
- In the event of liquid leak or default on the sense cables for each zone, the responses from the FG-ALS4-OD alarm & locating unit:
 - An audible alarm is triggered and a relay is activated.
 - The touch screen of the panel displays the zone, the location of the leak (on the cable) and details of the fault (the type of fault leak or cable break).
 - Report to the DCS/SCADA/Safeguarding system via a JBUS/MODBUS protocol.

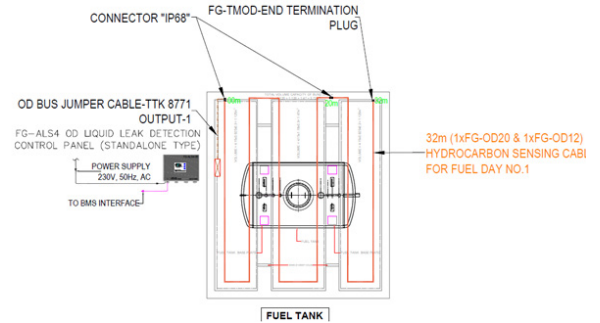


Addressable Oil Sensing Cable:
FG-OD (connector IP68)

Embedded microcontroller
inside FG-OD sensing
cable



Four Zones Alarm & Locating System Unit
for Hydrocarbon Leak Detection (FG-ALS4-OD) installed on site



Schema of installation of TTK oil fuel leak detection
monitoring panel for day tank



TTK oil fuel sensing cables (FG-OD) installed under
a day tank

