



Case Study

UL Helps Al-Rakeb Achieve Their Goals Through Remote Inspection Service

Al-Rakeb Co.



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Introduction

Remote areas, such as desert regions, pose a distinct challenge to companies seeking to work there while depending on fuel for their vehicles and machinery when such resources are traditionally hard to come by. Looking to help solve that challenge in the Middle East's deserts, Al-Rakeb Co., a Kuwaiti manufacturer of medium and heavy steel products and systems, such as tanks and steel frames for port harbors, developed a new, innovative solution.

Al-Rakeb Co. designed the Al-Rakeb Mobile Filling Station to operate in remote locations to service vehicles and equipment without access conventional gas stations. It can fuel cars, trucks, gasoline vehicles, diesel vehicles, construction or mining machinery, boats, and yachts. With minor modifications, the station can fuel helicopters and light aircraft, too.

As a transportable product, mobile fuel stations can be moved to virtually any location. It allows consumers to store up to two types of fuel by having two separate tanks with a capacity of 20,000 liters (about 5,250 gallons) each, separated by a bypass flange. When opened, the flange allows a total capacity of 40,000 liters (about 10,500 gallons).

UL's expertise in the HazLoc industry was a valuable asset for our team and helped us understand how to access new global markets.

- Saad Salem Al-Qattan, CEO of Al-Rakeb Co.



*Al-Rakeb Factory
Credit: Al-Rakeb Co.*



Starting point of the project with UL

Al-Rakeb Co. approached the Kuwait National Guard (KNG) and presented the mobile fuel stations to the national defense institution. KNG expressed interest and requested a thorough third-party investigation before making any decisions about purchasing the product.

The Kuwaiti company began to establish their trust in UL, the global safety science leader, through working on the initial project in which they obtained certification against UL 142, the Standard for Safety for Steel Aboveground Tanks for Flammable and Combustible Liquids, for their above-ground, flammable liquid tank. Al-Rakeb Co. relied on UL's Energy and Industrial Automation group to review all electrical equipment and wiring methods used to build its mobile fuel stations.

Hazardous locations and remote inspection challenges

During the project discovery phase, the option for product certification was completely discarded. To certify the Al-Rakeb Mobile Filling Station, the original equipment manufacturers of all the product components would have to pass on their proprietary test reports to UL for evaluation. The main difficulty was that Al-Rakeb Co. would have been responsible for procuring all proprietary reports for UL to review and in the hazardous locations (HazLoc) industry, components usually have multiple certifications for different markets. The required logistics, time and resources presented significant obstacles against the certification.

“We had internal discussions and opted for a letter report without certification, providing a safety-related engineering service,” said Robert Deadman, senior staff engineer, UL’s Energy and Industrial Automation group. “Al-Rakeb Co. agreed with that decision.”

The letter report would cover a wide range of activities that included:

- Identification of design documents
- Identification of the applicable standards used
- Verification of the electrical equipment covered
- Inspection report for wiring methods
- Results of the inspection

Once UL’s engineering team and Al-Rakeb Co. collaborated to identify the design documents and applicable standards, the next step was the desk review portion. A desk review’s objectives focus on validating all the components in the product and helping assure

the components are used correctly according to their technical documentations and instructions.

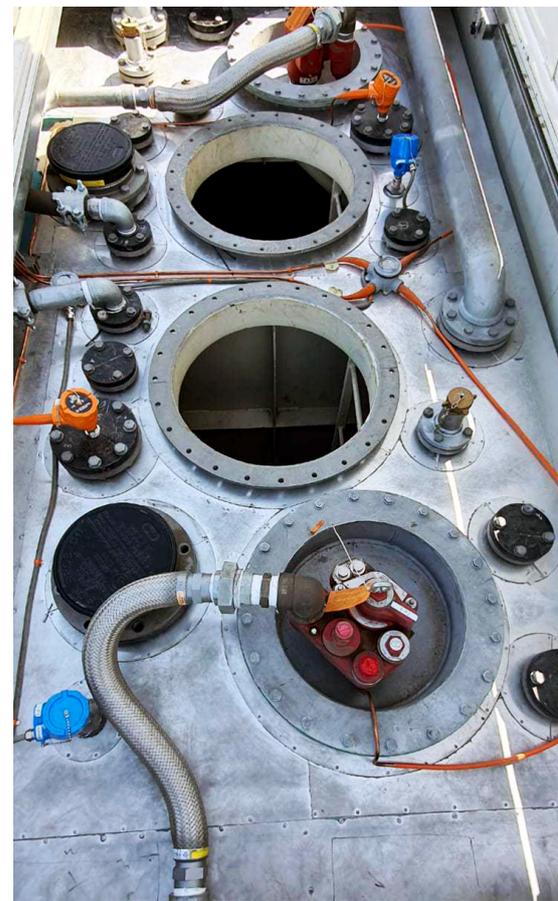
The next step was the review of the electrical equipment and inspection of the wiring methods used in the mobile fuel stations. Due to the COVID-19 pandemic, the inspections needed to take place remotely. Deadman oversaw the remote inspection of all electrical equipment, wiring methods and interconnections following guidelines in the International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx) OD 024. UL’s engineering team reviewed the integrated equipment based on IEC 60079-14, the International Standard for Electrical Apparatus for Explosive Gas Atmospheres.

UL’s specialists faced the challenge of conducting a remote inspection for a brand-new product while helping Al-Rakeb Co. learn more about market differences and nuances in the HazLoc industry. To balance these demands successfully, UL’s engineering team exchanged as much knowledge as possible with the Al-Rakeb Co. teams through bi-weekly online meetings during the desk review phase and in daily online meetings during the inspection phase.

“UL’s expertise in the HazLoc industry was a valuable asset for our team and helped us understand how to access new global markets,” said Saad Salem Al-Qattan, founder and CEO of Al-Rakeb Co.

In July 2021, UL issued a letter

report to Al-Rakeb Co. regarding the remote inspections results, based only in a review of all the electrical equipment and wiring methods used in the construction of the mobile fuel station. UL’s letter report to Al-Rakeb Co. demonstrates the product was reviewed and inspected for hazardous locations as specified in Al-Rakeb’s area classification drawing.



Al-Rakeb Mobile Filling Station
Credit: Al-Rakeb Co.



Mobile fuel stations go to market

The Kuwait Fire Force accepted the letter report, and the Al-Rakeb Mobile Filling station went to market in Kuwait. Al-Rakeb Co. is the first and only organization situated in the Middle East region whose mobile fuel station received a letter report from UL. "This project was vital for our mission to deliver quality, safe products to our customers," Al-Qattan said. "We are glad to be part of the development of our national manufacturing."

As soon as the letter report was issued, the Kuwait National Guard acquired four Al-Rakeb Mobile Filling Stations. Al-Rakeb Co. has also received multiple orders from major companies in the oil and gas industry located in the Gulf Cooperation Council (GCC).

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- Saad Salem Al-Qattan, CEO of Al-Rakeb Co.



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