

CASE STUDY



PROJECT: Retrofilling for fire safety | Sharjah, UAE

ESTER TYPE: MIDEL 7131 synthetic ester

PURPOSE: Fire safety for distribution transformers

[OVERVIEW]

Sharjah Electricity and Water Authority (SEWA) states that its aim is meeting customer satisfaction through delivery of reliable services of electricity and water and piped natural gas at an excellent level of safety and quality standards in line with the most advanced technologies.

In the Emirate of Sharjah, the authority had a number of distribution transformers that had been identified as high risk because they were mineral oil filled, located in public places and run at high temperatures.

The mineral oil within these transformers represented a fire hazard because of its low fire point of 170°C. If there had been an electrical fault in one of these transformers that ruptured the tank, it could have caused a major fire incident (mineral oil transformer fires are notoriously hard to extinguish, and can cause major damage to property and put lives at risk).



CASE STUDY



[SITUATION]

The MIDEL technical team was consulted to discuss the possibility of using MIDEL 7131 in these high risk transformers, in order to significantly reduce the fire hazard. The meetings were well received and a distribution transformer located within a Gold Souk was chosen to use as a pilot project. This particular unit was very heavily loaded and the temperature gauge showed maximum temperatures of 118°C had been reached in service.

MIDEL provided the customer with a comprehensive guide to refilling mineral oil with MIDEL 7131. This included step-by-step instructions for a successful outcome. The content of this guide was discussed with the customer at length to ensure it was fully understood. Guidance was also provided on pre-refill testing to assess the condition of the transformer; this was mainly based on the furan results.

[RESULT]

The MIDEL team attended the retrofit to advise the customer's engineers and ensure that it proceeded to plan. In order to minimise disruption to customers within the Gold Souk work commenced near midnight, with the aim of completing before the start of business the following morning - the plan was successful. The retrofit was completed and the transformer was energised by 08:00 in the morning, ready for the opening of the market.

Following the retrofit, samples of the oil in the transformer were analysed by MIDEL technicians; results showed that the fire point of the oil in the transformer was substantially higher, which significantly increased the fire safety of the installation.

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The use of MIDEL ester fluids in this project supports the following UN Sustainable Development Goals:

