

CASE STUDY



PROJECT: Insurance drives retrofilling | Canada

ESTER TYPE: MIDEL eN 1204 natural ester (rapeseed/canola)

PURPOSE: Rapid retrofilling to save building costs

[OVERVIEW]

A major energy distribution company in Quebec was advised by its insurance company to review the electrical substation at one of its urban locations.

Two mineral oil transformers, rated 25kV and 6.9kV, were installed in close proximity to the building housing the ancillary substation equipment, including critical switchgear. The insurance company told the client that modifications would be necessary in order to make the substation compliant with the latest building and fire safety standards.



CASE STUDY

[SITUATION]

An engineering consultant assessed the site and submitted two potential courses of action: the first option (and the most expensive) comprised constructing a fire wall between the building and the transformers. This action would, however, create connectivity problems between the transformers and the other elements of the substation. The second option proposed to replace the mineral oil in both transformers with another type of insulating fluid with less flammable characteristics - a process called retrofilling.

The customer decided to replace the mineral oil with MIDELE eN 1204, one of the MIDELE range of ester transformer fluids and especially suitable for low temperature applications (it has a pour point of -31°C, making it a better choice for cooler climates). Choosing this option avoided the high costs of modifying the existing building and the disruption of major construction work on the site.

The transformer retrofilling was carried out over two consecutive days, minimizing the duration of the necessary electrical shutdown. The existing mineral oil was drained and transported to MDL Énergie's workshop for recycling. Then the transformers' coils and tanks were rinsed with MIDELE fluid. After removing the rinsing fluid, the transformers were filled with MIDELE eN 1204. The qualified MIDELE Service Partner team deployed a filtration unit in order to perform the fluid transfer at a best-practice temperature of around 70°C.

[RESULT]

The retrofilling was completed safely in just two days compared to the weeks of construction work necessary to build a fire wall. Production losses were thus kept to a minimum, a major benefit for the customer, and the transformers are now fully firesafe thanks to the special attributes of MIDELE ester transformer fluids.

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MDL Énergie, a MIDELE Service Partner specializing in the maintenance, repair and modernization of medium and high voltage equipment, was commissioned to replace the mineral oil with MIDELE eN 1204 natural ester at the site.

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

