

CASE STUDY



PROJECT: Fire Safety for Eurovision | Azerbaijan

ESTER TYPE: MIDEL 7131 synthetic ester

PURPOSE: Deliver a fire safe solution underground.

[OVERVIEW]

In 2011 the country of Azerbaijan won the right to host the Eurovision song contest for the contest's following year in 2012. In needing a new area in order to host the event, the utility Azerenergy began construction of the Baku Crystal Hall, under very tight time conditions in order to ensure the completion for the following spring of 2012.

Azerenergy is the largest electrical power producer in the Republic of Azerbaijan. It also maintains the largest distribution network in the country

The new area was designed to the highest standards, using modern building materials and methods to hold a capacity crowd of 25,000 spectators. The design was innovative, giving a crystalline appearance by the use of a shell membrane facade and it was also equipped with a total of 64,400 LED lamps to provide controllable lighting for any type of event.



CASE STUDY



[SITUATION]

A key part of the infrastructure for this new arena was a new electrical substation, which was built underground. The contract to build this substation was won by ABB. One critical element of the project was the specific need for a fire safe power transformer.

After examining all the available solutions, the decision was taken to use a MIDEL 7131 filled unit, in order to provide the necessary fire safe solution. The transformer itself was designed and built by ABB Oy based in Vaasa, Finland, who have a long history of using MIDEL 7131 for a wide variety of projects.

[RESULT]

The underground substation was successfully delivered on schedule and the area was completed in April 2012, with the first event being the Eurovision Song Contest in May 2012.

Underground, or subterranean, transformers and substations face a unique set of challenges during installation and operation. Deploying transformers underground presents an ideal solution for energy provision where the availability of surface land is restricted, such as in densely populated urban areas. However, in such cases the need for fire and environmental risk mitigation becomes a critical issue.

MIDEL ester fluids present the ideal solution for transformers in subterranean projects. With a high fire point of >300°C and proven biodegradability, MIDEL transformer fluids have been used in underground installations worldwide. In using MIDEL 7131 in the construction of this underground substation, ABB and Azerenergy benefited from much reduced fire risk alongside mitigated risk for critical power infrastructure.

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

