

Press release

Collaborative venture with MDN Main-Donau Netzgesellschaft mbH, Nuremberg, and Friedrich-Alexander-University Erlangen-Nürnberg

BAUR produces diagnostic testing cable test vans for research purposes

Sulz, May 2015 – Mains operator MDN Main-Donau Netzgesellschaft mbH, Nuremberg, the Faculty of Electrical Energy Systems of the Friedrich-Alexander-University Erlangen-Nürnberg and BAUR GmbH have signed a cooperation agreement to develop a measurement system for the dielectric diagnostic testing of 20 kV medium-voltage cables for condition assessment purposes. The comprehensive field measurements require the upgrading of a cable test van, which is being carried out by BAUR GmbH – partly with BAUR devices, and partly with devices custom-developed by the University Erlangen-Nürnberg itself.

In order to calculate when a cable needs replacing, it is important to know the status and the thus derived remaining service life of the cable. The scientists have allowed the paper-insulated ground cables to age artificially over a period of years in order to derive the physical ageing models which make it possible to determine the condition and the anticipated remaining service life of cable systems still in operation.

Based on the laboratory tests mainly conducted in 2013, the research team of the University Erlangen-Nürnberg, under the leadership of Dr. Weindl, developed a measurement procedure that will now be used and verified by 2018 within this partnership which forms part of the collaborative venture between N-ERGIE Aktiengesellschaft and Energie Campus Nürnberg (EnCN). This will involve a large-scale field study of diagnostic measurements conducted on various cables in the network area, which will then be compared with the measurement results from the laboratory. Around 250 medium-voltage cable sections will be tested in and around Nuremberg. The results will allow conclusions to be drawn on the condition and thus the remaining service life of the cables. A custom-developed cable test van, upgraded and kitted out by BAUR GmbH will be used to conduct these measurements.

The data collected by the innovative measurement and diagnostics procedures will eventually be used to develop a comprehensive and resource-selective database system, which will in turn be used to predict the anticipated remaining service life and probability of the next failure of various operational assets. A network operator is only able to determine when a cable needs to be replaced when the condition of that cable is known. The developed measurement and analysis procedure will enable this and thus guarantee or even improve security of supply.



The research cable test van is specially developed for the diagnostic testing of medium-voltage cables. From left to right: Torsten Berth (BAUR GmbH), Stefan Link (MDN Main-Donau-Netzgesellschaft mbH) and PD Dr.-Ing. habil. Christian Weindl (University Erlangen-Nürnberg) at the handover of the cable test van.

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