ANALYSIS OF ARC
IN A VACUUM CHAMBER WITH AN AMF

ABSTRACT Vacuum circuit breaker chambers (VCBC) are subject of a continuous study to optimize parameters of circuit breakers. The aim is to reduce the size and to increase the breaking ability in the whole range of rated voltages. In optimization attention is paid to reach a uniform distribution of the magnetic field over the contact plate surface. The influence of slits in the contact plates, and the rotation angle between contacts upon the magnetic field distribution (MFD) was analyzed. Field tests of different contact sets were made, using a dismountable vacuum chamber. The tests were conducted at short circuit currents up to 15 kA. A high speed video camera was used to monitor the arc developed between contacts.

Key words: Vacuum circuit breaker (VCB), vacuum chamber (VCBC), short circuit tests (SCT), axial magnetic field (AMF)