ABSTRACT In this article an overview of works related to DC electric traction as well as stray current protection systems were described. Differences between first and second metro lines were shown. An overview of stray current monitoring system structure was shown, step-by-step upgrades from registration to monitoring system on the entire line were described. Evaluation criteria of the connection arrangement in the protection system was shown. Expansion of the metro system was accompanied by the mentioned modernizations of the stray current monitoring system, data acquisition and storage was upgraded. Signaling system of undesirable states in the return circuit captured by the monitoring system was described. The article describes modifications of the system on both metro lines and its adaptations to the changing conditions.

Keywords: stray current, metro stray current monitoring systems