Development of New Inspection Method for Evaluation of Earthing Systems for Lightning Protection

Gaku MORITA Daiki SATO
Hiroki TANAKA Koji MICHISHITA

This paper describes a new inspection equipment and a new circuit structure used for evaluation of lightning protection performance of the earthing system in railway substations. The new inspection equipment consists of an impulse generator and a measurement unit, and allows the inspector to measure the earth resistance, the high frequency earth impedance and the voltage difference of an earthing system without advanced knowledge. The new measurement circuit for the inspection of the earthing system only requires existing infrastructures, i.e. an independent earthing for a remote terminal unit, an earthing system of adjacent substation and an overhead contact line. Therefore, the proposed circuit requires no temporary earth rods for measurement.