

INSTALLATION OF CLUSTER GROUNDING IN MEDIUM VOLTAGE NETWORK MAINTENANCE

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ABSTRACT

The maintenance of 20 kV Medium Voltage Distribution Networks (MVDN) requires the implementation of strict work safety procedures to prevent the risks of induced voltage, residual voltage, and back-feeding voltage that may still occur even after the network has been de-energized. The observation results showed that all installation stages were carried out in accordance with the Standard Operating Procedures (SOP), including verifying that the network was de-energized using a voltage detector, installing the grounding rod, connecting the grounding cable, attaching the phase clamps to the conductors, inspecting all connections, and measuring the grounding resistance before maintenance work began. The measurement results indicated that the grounding resistance at Jalan Utama Penebal decreased from 12.84 Ω to 4.32 Ω after the installation of the Grounding Cluster. The implementation of the Grounding Cluster provides a low-impedance path for fault current dissipation, thereby minimizing the risk of electric shock to maintenance personnel and creating a safer working environment. Therefore, the installation of the Grounding Cluster has proven to be an effective solution for enhancing work safety while improving the reliability of medium-voltage distribution network maintenance.

Keywords: Grounding Cluster, Medium Voltage Distribution Network, Grounding Resistance, Work Safety, Network Maintenance.