

Installation Guidelines of Overhead Contact Line for Shinkansen High-speed Operation

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For high-speed operations of Shinkansen railways, the current collection performance is one of the most important subjects. The installation accuracy of overhead contact line has a considerable influence on the contact force fluctuation between overhead contact line and pantograph. However, there is no concrete installation guideline of the overhead contact line to specify the acceptable range of the installation errors. This paper proposes the procedure for establishing the installation guidelines, which are derived from the results of the dynamic simulation based on the actual installation state. We herewith present the installation guidelines for Shinkansen operations at 300 or 320km/h established according to this procedure. We have demonstrated the indicators of the installation error and the guideline ranges respectively. It is hopeful that the installation guidelines will contribute to the improvement of the performance, the reliability, the safety and the maintenance efficiency of the overhead contact line.