

**Development of Deterioration Monitor for Surge Arresters of  
Shinkansen Feeding Circuit**

Hiroki TANAKA   Kohji AJIKI   Hiroaki MORIMOTO  
Masataka AKAGI   Tsurugi YOSHII

Currently, there are the following two methods to evaluate the degradation of feeder surge arresters at Shinkansen substations. One method is to count the number of lightning strokes by surge current counter device. However, some of surge current counter devices may count small discharge current of arrester due to switching surge voltage in changeover sections, which does not affect the degradation of the arrester. The other method is to measure the leakage current at normal status. However, this may not be a reliable method because the leakage current is strongly affected by harmonics of feeding voltage. We have developed a jig with functions of suppressing unwanted counting of small surge current and providing accurate measurements of leakage current of the target arrester. This paper describes various field measurement results, the principle of the developed jig and a new extracting method of resistor-part current of arrester from the entire measured leakage current.