**A.8.6.**

## Results on after-layng test of 275 kV XLPE cable line

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In 2002, Chubu Electric Power Co., Inc. constructed the 275 kV XLPE cable line, Kawagoe Nishi-Nagoya Line, which connected between Kawagoe thermal power station and Nishi-Nagoya substation. An after-laying test by the AC voltage on site was carried out for the XLPE cable line. The test conditions were decided considering recent results of partial discharges from various defects. The applied test voltage was 207 kV, which was 1.3 times of the operation voltage. Test time was 20 hours. The test voltage was separately applied to each phase. By the withstand voltage test and partial discharge measurement, the normal performance was confirmed for five out of six phases of the line. Five hours after the voltage application, partial discharge was detected by the sensors in the remaining phase of the line. The location of the partial discharge was determined at the joint from the time difference of the partial discharge pulse reaching the sensors on both sides of the partial discharge area. The withstand voltage test and partial discharge measurement were carried out again after the repair of the cable span. That phase of the line was found to be sound. In order to identify the defect, the joint was brought to the factory. A closed void of about the thickness 0.1 mm was discovered in the insulator adjoining to the semi conductive layer of XLPE cable.