Different concept of on-line partial discharge monitoring system in industries

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Partial discharge measurement is one of the most effective insulation diagnostics, but the necessary of exporters for analyzing measurement results limites its popularization. Moreover, the finical cost and time cost would also be relatively high for industries due to the large amount of equipments. Therefore, only very important equipment has the chance to be monitored by on-line partial discharge measurement, and others still risk insulation breakdown.

In order to enhance the power reliability of industries by on-line partial discharge measurement, a different concept is proposed, and the main idea is quickly excluding “safe equipment” and then diagnosing suspected others. A typical industry may have dozens of equipment, and only a few of them have defects. Therefore, detail on-line partial discharge measurement on all equipment would consume much resources, and shows no cost-effective. Hence, the goal of the different concept is to pay most attention on the equipment with suspected partial discharge phenomena rather than whole equipment.

Based on decades field experience, the equipment without suspected partial discharge signals can be excluded by quickly scanning, which only monitors the partial discharge level and the time continuity of the signals. Any partial discharge signals showing time continuity would be considered as existence of partial discharge phenomenon, and the detail on-line partial discharge measurement would be carried out.

In such way, the cost of on-line partial discharge measurement could be lower down. Moreover, a simple on-line partial discharge monitoring system can also be achieved for industries by monitoring the trend of partial discharge level.