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Condition Monitoring System (CMS) for Power Equipment Based on IoT Technology

Condition Monitoring aims to detect abnormality as it happens during the operation of power equipment and systems, diagnosing the type and causes for the abnormal condition and identifying the location of the possible failure based on a wireless sensing network. SWER system monitoring is the most cost-effective choice for a distribution system of microgrids. However, due to the principle of SWER, the issue of voltage imbalance and instability has remained a serious issue for the past 20 years and fault detection is difficult due to the high impedance of the network.

Competitive advantage

- Unique, remote monitoring solution
- State-of the art, contactless sensing and wireless network based on IoT technology

Impact

- The ability to monitor a system remotely provides an economical solution to detect and identify the location of abnormalities
- This contactless sensing and wireless network collects data to present various features of a running equipment or system, with which performance, status and potential risks of the equipment or system can be identified

Successful applications

- Condition monitoring technology has been applied to a 100km SWER system that monitors the distribution system of a microgrid in a remote area. It is based on IoT technology and has proved to be able to communicate independently, without the support of the 3G/4G network
- Successfully tested in monitoring the condition of a specific component (bearing) of rotating machinery. The test has proved that the method can accurately identify the location and type of an abnormal condition in the machinery

Capabilities and facilities

- Remote SWER system monitoring for Microgrids
- Power Equipment Condition Monitoring based on contactless sensing and wireless network

More Information

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