DISTRIBUTION TRANSFORMER MONITORING USING IOT

Distribution transformers form an integral part of our electrical power grid. We propose a an Iot based solution for remote monitoring and data analytics of vital parameters of a distribution transformer in real time. Using various sensors, measurement of oil and winding temperaure,ambient temperature,LT current, LT voltage,pressure, dissolved hydrogen in transformer oil is done.If and when the system quantity crosses a predefined threshold, an alarm is automatically generated for operator intervention and SMS is sent to concerned field engineer. Online moisture and gas analysis of about 9 gases like CH3, C2H2, CO,CO2,NO2,O2 is performed using spectroscopy to detect various possible faults.All the acquired sensor data is sent to the cloud and is analysed to make informed decisions pertaining to tap changing/overloading/tripping. The transformer hum and vibration is recorded by a microphone and the audio signal is analysed using signal processing techniques to determine any abnormality in transformer behaviour.The entire network is visualized using an interactive graphical interface in the control center.

