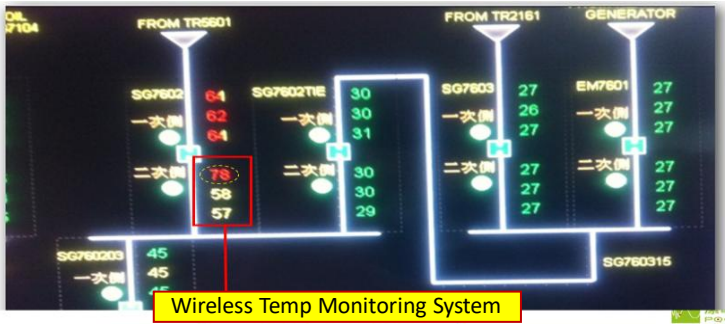
PQSense

Wireless Temperature Monitoring Case Study

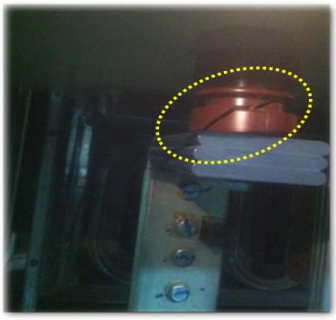
Insulator Fracture and Abnormal Temperature Rise

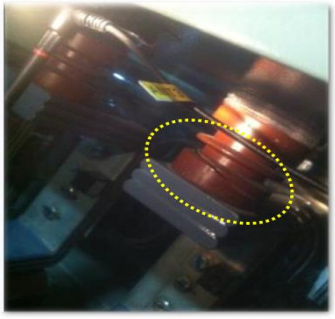
Event： **Wireless Temperature System Alarm**：Main switchgear secondary R-phase temperature is higher than others.

1. Wireless temp monitoring system alert: High temp on 12kV GCB secondary R-phase, 20-degree phase difference!

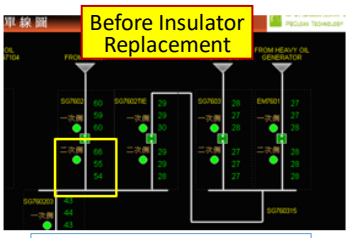


2. Emergency shutdown and inspection of high-temperature area revealed fractured insulator support causing elevated temp in secondary R-phase.



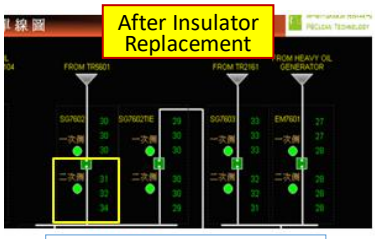


3. After load reduction, secondary R-phase still exhibits a temperature difference of over ten degrees compared to the other two phases.



R: 66°C / S: 55°C / T:54°C

4. After replacing the faulty insulator, the temperature difference between phases returned to normal.



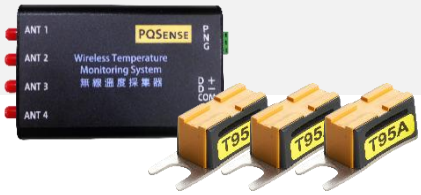
R: 31°C / S: 32°C / T:34°C

Conclusion：

In this case, a fractured insulator supporting the copper busbar caused insulation degradation and elevated contact temperatures. Without the real-time alarms from the wireless temperature monitoring system, timely detection of the abnormal temperature rise was at risk, potentially leading to severe consequences. The wireless temperature monitoring equipment ensures immediate monitoring and effective warnings, aiding in preventing accidents and eliminating hazards.

Wireless Temperature Monitoring System

Battery-free wireless temperature sensors provide long-term, safe monitoring, eliminating battery-related risks in high-temperature



environments, and aiding power temperature monitoring and anomaly detection.