

Battery Room Monitoring

Industry: Oil and Gas
Products: YTMX580 (Multi-input Temperature Transmitter)
 YTA510 (Temperature Transmitter)
 YFGW410 (Field Wireless Management Station)
 YFGW510 (Field Wireless Access Point)
 SSS7100 (Field Wireless Device OPC Server)



Introduction

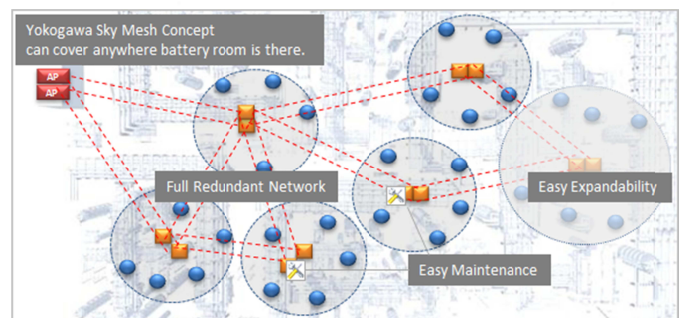
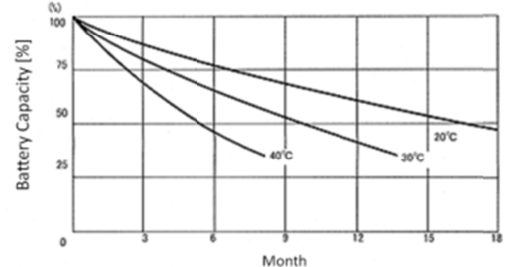
A battery room is used to storage batteries for emergency power management in the plant. Each substation has battery room and the storage batteries are lead-acid batteries which must be maintained within specified operating temperature limits. Temperature management is important to ensure a long service life of the batteries especially for the plant in desert climates.



Benefits

- Improved maintenance efficiency of storage batteries
- Minimized installation cost, a single hop up to 5km minimized wireless infrastructures (extra repeaters)
- Reduced system maintenance effort, battery life of 10 years with 30sec updates can be realized
- Improved system availability, the gateway redundancy with one second switch over time can be realized
- Improved future installation flexibility and usability, Backbone routers with Sky Mesh Method minimize infrastructure while maintaining high network reliability with low communication error rate

Reference: Lead Storage Battery
 - Temperature Characteristic -



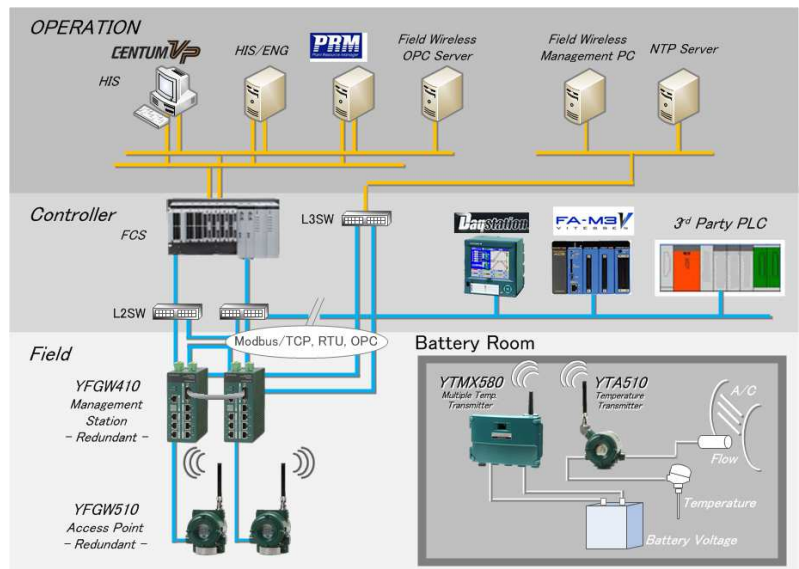
Requirements

- To gather temperature and A/C measurements of each battery room and to monitor them in central control room
- All wireless transmitters to have redundant paths
- Host interface must be compatible with existing 3rd party DCS
- Minimize cost by reduced wireless infrastructure

Solution

Redundant gateways and access points were installed in a central control room. The wireless network has the availability to communicate with 24 battery rooms, over an area approximately 2 km². In each battery room, an RTD sensor was installed for temperature monitoring and a mechanical flow switch was installed for A/C monitoring.

Field and network redundancy ensured high availability of data. An OPC server with an open interface allowed for connecting to 3rd party DCS without any additional software.



Conclusion

Battery rooms are now under wireless monitoring. The redundant wireless system provides reliable network communication over 2 km² area and cost savings were realized at over 75%. The emergency power monitoring system ensures that power is always available during a site safety event.