Remote Monitoring and Maintenance of Sudanese High Voltage Complete Equipment

Article Overview

Sudanese high-voltage equipment can be effectively monitored and maintained remotely using digital platforms, predictive diagnostics, drone inspections, and specialized workforce training.

Siemens Remote Monitoring and Maintenance Services

Siemens has established long-term agreements with the Sudanese Thermal Power Generating Company (STPGC) to provide service, maintenance, and O&M advisory for the Port Sudan (337 MW) and Garri (502 MW) power plants . These services include:

o 24/7 Remote Expert Center monitoring of control systems using Siemens' SPPA-T3000 platform.
o Power Diagnostics(TM) for data-driven analysis to detect abnormal operating conditions before they impact operations.
o Technical support and training for local technicians, including classroom and hands-on sessions in Sudan and at Siemens' Berlin facility.
o Maintenance of gas turbines and high-voltage control systems, ensuring operational reliability and performance.

High-Voltage Equipment Services

Siemens Energy provides tailored high-voltage product services for switchgear, circuit breakers, and transformers . Key features include:

o Condition-based and predictive maintenance to minimize downtime and extend equipment lifespan.
o AI-powered diagnostics to detect insulation breakdown, SF6 gas leaks, mechanical wear, and environmental impacts.
o SF6-free retrofits and eco-friendly upgrades to comply with environmental regulations.
o Smart Spares Consulting to ensure critical parts are available when needed, reducing operational interruptions.

Remote Monitoring Platforms

Hitachi Energy's Asset Health for Switchgear (AHS) enables utilities to monitor high-voltage switchgear remotely . This platform provides:

o A single interface to view asset health and performance.

o Predictive analytics to schedule maintenance proactively.
o Collaboration tools for maintenance teams to reduce unnecessary downtime and optimize asset availability.

Drone-Based Inspections

Drones equipped with AI, thermal imaging, and high-resolution cameras can inspect power lines, substations, and high-voltage equipment . Benefits include:

o Rapid assessment of insulators, conductors, vibration dampers, and corrosion.
o Detection of overheating, loose connections, or wildlife intrusions.
o Real-time data transmission for inventory and maintenance planning.
o Enhanced worker safety by reducing the need for manual inspections in hazardous areas.

Workforce Training

Specialized training programs, such as the Smart Grid & Utility Worker Safety course, equip personnel with skills for remote operations, high-voltage risk assessment, and digital substation management . Training includes:

o Simulation drills and sensor-based hazard detection.
o Remote operations practice and emergency response scenarios.
o Certification upon completion, ensuring personnel are qualified to operate and maintain high-voltage systems safely.

Summary

Effective remote monitoring and maintenance of Sudanese high-voltage equipment combines digital monitoring platforms, predictive diagnostics, drone inspections, and skilled workforce training. Siemens and Hitachi Energy provide advanced solutions for real-time monitoring, condition-based maintenance, and operational advisory, while drones and specialized training enhance safety, efficiency, and reliability of high-voltage infrastructure in Sudan.

Ensure uninterrupted performance of your high-voltage equipment with our comprehensive spare parts solutions - backed by expert

Abstract The expansion of photovoltaic systems emphasizes the crucial requirement for effective operations and

However, for equipment that does use high-voltage battery systems, there are important safety considerations for equipment

A team of experts will provide advisory and technical support for the operations and daily maintenance performed by

In this concise ebook, you"ll gain an understanding of predictive maintenance as a strategy for protecting high-voltage assets and

Therefore, this paper designs a remote real-time online monitoring system for high voltage equipment based on smart grid. This

Diagnostics, Maintenance & Repairs The Prysmian ongoing maintenance service can provide continuous monitoring of your cable

One of the most effective ways to assess the insulation condition of high voltage equipment, particularly high voltage

This training course equips participants with the specialised skills needed to protect workers operating in smart utility environments

What Are the Maintenance Inspections for Electrical Equipment in High-Voltage Power Distribution

By combining cloud computing with Internet of Things (IoT) technologies, this study fills a need in the literature by

To tackle the challenges outlined above, this paper uses intelligent methods to develop a state monitoring system for

An online monitoring system for high-voltage equipment at a substation that could help system operators have a better

North Central Electric Maintaining high voltage cables requires a strategic approach that combines preventive

This paper obtained the switching impulse flashover characteristic of live working complex gap on extra high voltage

Abstract The online monitoring of a high voltage apparatus is a crucial aspect for a predictive maintenance

program.

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