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Supply of Digital Fault Recorders Red Eléctrica del Sur S.A.

Arequipa – Perú

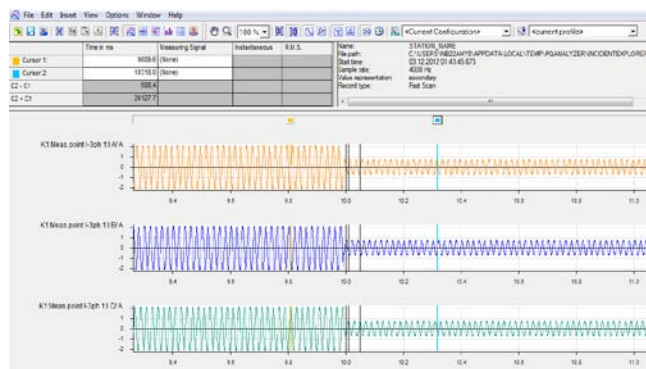
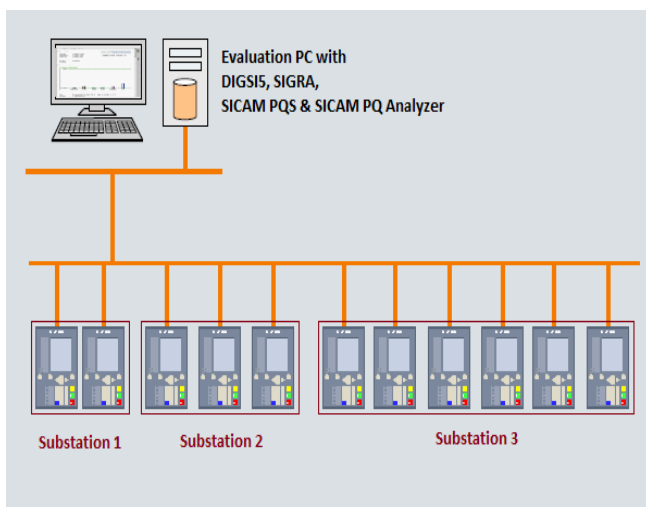


Imagen referencial

The compliance with a new regulatory standard of the system operator **COES** – Comité de Operación del Sistema Interconectado Nacional del Perú - which requires the implementation of Digital Fault Recorders in all transmission lines with voltages above 100 kV, in order to perform a comprehensive analysis of the faults that occur in the Peruvian electricity system – **SEIN**- has given origin to this project.

Siemens participation includes the supply, training and supervision of commissioning of Digital Fault Recorders for the transmission lines in 220 kV of Red Eléctrica del Sur - **REDESUR**, the electricity transmission company who serves the energy transmission among the cities of Arequipa, Moquegua, Tacna and Puno in southern Peru.

Substations within the scope of the project are:

- Socabaya Substation
- Moquegua Substation
- Los Héroes Substation
- Puno Substation

"All fault recorders on the market have similar technical characteristics. However, the SICAM PQS software grants remote management benefits, fundamental for the selection of the solution offered by Siemens"

Eng. Javier Jacobo; Management Coordinator of Operations and Maintenance - REDESUR

Answers for infrastructure & cities.



Challenges for REDESUR

Customer's foundation to install a Fault Register System is based on the need to be aligned to the "Technical Procedure 40", demanded by the regulatory entity **COES**, which refers to equipment capable to record up to 6 kHz in both system events: transient type (faults) and dynamic type (power oscillations).

Customer Objective

REDESUR's objective has been to implement a continuous management system that allows an automatic storage of oscillographic records on a server, and able to send notification messages via e-Mail in case of a failure event in **REDESUR's** electrical system. In such a way improves the efficiency in its operations, obtaining as much information as possible from its energy network in order to analyze the power system phenomena, such as distortions of the network, voltages and currents faults values, among others. With the highest quality standards is to be aligned with the requirements of the **COES**.

Siemens Solution

Thanks to the comprehensive Siemens' proposal, **REDESUR** has decided to innovate technologically.

The solution is composed by fault recorders **SIPROTEC 7KE85** belonging to the new platform **SIPROTEC 5**, altogether with the software **SICAM PQS**, specially designed to centrally archive and evaluate all the power quality information gathered in field, open also to receive information from equipment of other suppliers, providing in a clear and simple way information of the global quality condition of the system.

The scope of supply has included:

- 11 **SIPROTEC 7KE85** including the software license for configuration, operation and management **DIGSI5**, **SIGRA**, **SICAM PQS** and **SICAM PQ Analyzer**.
- Training **REDESUR** engineers at **SIEMENS POWER ACADEMY** in Nuremberg and participation in FAT Testing in Berlin.
- Supervision of assembly, configuration and commissioning of equipment.
- Training for operators and technical staff of the company in the substation.

Devices are installed and in operation in altitudes up to 4000 m a.s.l.

Benefits for REDESUR

By virtue of the implemented solution, **REDESUR** nowadays possesses the following advantages:

- Oscillographic records storage up to 15 GB in each of the installed devices.
- Centralized management of oscillographic records for transmission lines with geographical distance of 527 km.
- Oscillographic records with a sampling rate of up to 16 kHz.
- Access to information of fault records due to the gradual and controlled registration.
- Sending automated information via e-mail upon the occurrence of an event in the system.
- Increased availability of the transmission system supported by the data analysis and effective coordination of corrective actions.

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