



Overview

The Ethiopian Electric Power Corporation (EEP) is the sole power utility in Ethiopia responsible for the power generation, transmission, distribution and sales of electrical energy to consumers all over the country.

The electricity demand of Ethiopia is very strong and has been doubled for the past 10 years. In the next five years, the demand of Ethiopian national electricity will increase 28%-32% per year. To cope with this important power demand forecast, EEP is currently increasing its generation capacity from 2,000 MW (2010) to 10,000 MW (2015/2017). EEP generation development plan foresees a generation capacity of 25,000 MW by 2025 and 29,000 MW by 2030. This significant generation capacity increase is carried out along the development of an extensive transmission network and distribution network all over the country. A number of major transmission lines and substations have been built and a number of major towns' distribution networks are either under reinforcement/construction, committed or planned for development in the near term. The distribution network uses 23kV voltage level which lags seriously behind the growth of electricity demand of urban network and sorely needs to be retrofitted. The objectives of retrofit are to improve reliability and quality of power supply and to enable the system to connect new customers and meet their electrical energy requirements.

Existing Problems

Nowadays the 15kV MV distribution networks of 7 towns, Mekele, Bahir Dar, Dessie, Nazareth, Dire Dawa, Jimma and Awassa, are obsolete and contain much outdated equipment. The existing power grid structure can't meet the requirements of customers, such as unreasonable network structure and lack of control system to monitor the distribution network. The blind operation of distribution network resulted in delayed outage restoration time and lack of accurate outage information updating during outage restoration processes.



Under the Distribution Rehabilitation Project financed by the World Bank, EEP plans to rehabilitate distribution network to improve the current distribution network. The upgrading work scope includes reinforcement of MV network, replacement of most primary equipment, establishment of new communication system, distribution control center and trouble call center. The new SCADA & DMS distribution system is expected to improve operational efficiencies, the quality and reliability of electricity supply, such as,

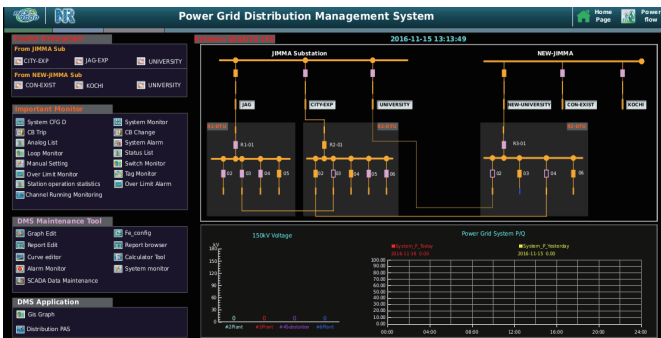
- Enhancing operational efficiency and reliability
- Reducing energy losses and network operational costs
- Providing SCADA automation to distribution networks
- Improving SAIDI, CAIDI through faster outage restoration
- Improving customer service

NR Solution

In 2015, NR won the tender to deliver a cost effective SCADA/DMS solution for 7 towns to improve business processes and overall efficiency. A unified platform was provided to accommodate future network and control system functional growth.

The scope of work includes design, supply, installation, training and commissioning of all the software and hardware system. NR's PCS-9000 SCADA/DMS features open architecture and has capability to integrate GIS and other applications through a standards-based Enterprise Service Bus(ESB). The whole PCS-9000 SCADA/DMS system comprises the following systems: SCADA, DMS, OMS, Trouble Call system, planning and so on.

The Trouble Call subsystem is based on the unified platform of SCADA/DMS, making it easier to share data, diagrams and real-time information with SCADA. Geographic Map background enables visualized operation of SCADA and Trouble Call functions.



Client benefits and Summary

The PCS-9000 DMS will put into use in 2017. It provides full integration solution for every step of operation, from real time monitoring to network analysis and optimization. It also provides interoperability and functional expansionary across its full range of lifecycle. NR's long-term commitment to DMS solution will enhance EEP's competitive strength and profitability in the future.

The use of PCS-9000 DMS will bring clients with following advantages,

- Situational awareness with real-time data, advanced network applications and combined trouble call system
- Intelligence management and control of power system
- Increased operational efficiencies with a unified platform environment for SCADA, Network Applications, Outage Management and Workflow Management.
- Safe and efficient day-to-day operation
- Resolving customer complaints on loss of power supply or defective power supply in time

