



<http://d2.cigre.org>
/

CONSEIL INTERNATIONAL DES GRANDS RESEAUX ELECTRIQUES
INTERNATIONAL COUNCIL ON LARGE ELECTRIC SYSTEMS

STUDY COMMITTEE D2
INFORMATION SYSTEMS AND TELECOMMUNICATION

2017 Colloquium
September 20 to 22, 2017
Moscow – RUSSIA

Preferential Subject N° - PS1

Strategies and benefits of control centralized and distributed in distribution feeders with distributed generation.

Eng. Alejandro Razo Miranda
Comisión Federal de Electricidad
México.

alejandro.razo@gmail.com
alejandro.razo01@cfe.gob.mx

The presence of the distributed generation in the distribution feeders is a very important aspect to be taken into account in the operation, planning, construction or modification of the electrical distribution system, for the operation it is necessary to perform analysis of load flows in real time with the actual conditions of the electrical system, for the planning it is necessary to perform load flows with different conditions in demand of the feeder and capacity of generation to understand how will affect the installation of the distributed generation to the voltage or the loadability of the conductors, the presence of distributed generation changes the coordination of electrical protections in the feeder, the operation of the feeders can cause headaches to the electricity distribution company, however in this work will be presented the techniques and strategies used centralized and distributed control that doing use of remote control equipment such as reclosers and switches can solve this problem and make this situation a benefit for the electric power distribution company.

The use of specialized techniques in centralized control with response to demand with real-time load flows and state estimation, allows to obtain benefits in terms of voltage regulation, loadability and reduction of technical losses, being able to control, the power factor of the distributed generation and making changes of automatic topologies transferring load from one feeder to another in seconds.

The use of specialized techniques in the distributed control and the use of standards such as the IEC61850 in the distribution feeders that allows the communication between teams offers the possibility of having closed ring topologies in distribution circuits or performing islanding of distributed generation when there are faults In the electric power service to customers, which provides an improvement in reliability indices such as SAIDI, SAIFI and CAIDI.

On the other hand for electric power companies it is very important to take into account the safety aspects for personnel working in low, medium and high voltage lines, however, most authors of strategies and algorithms for restoring the energy service Never take this aspect into account and this work also tries to show that aspect with the presentation of success cases of the above mentioned strategies taking into account the safety of the worker.

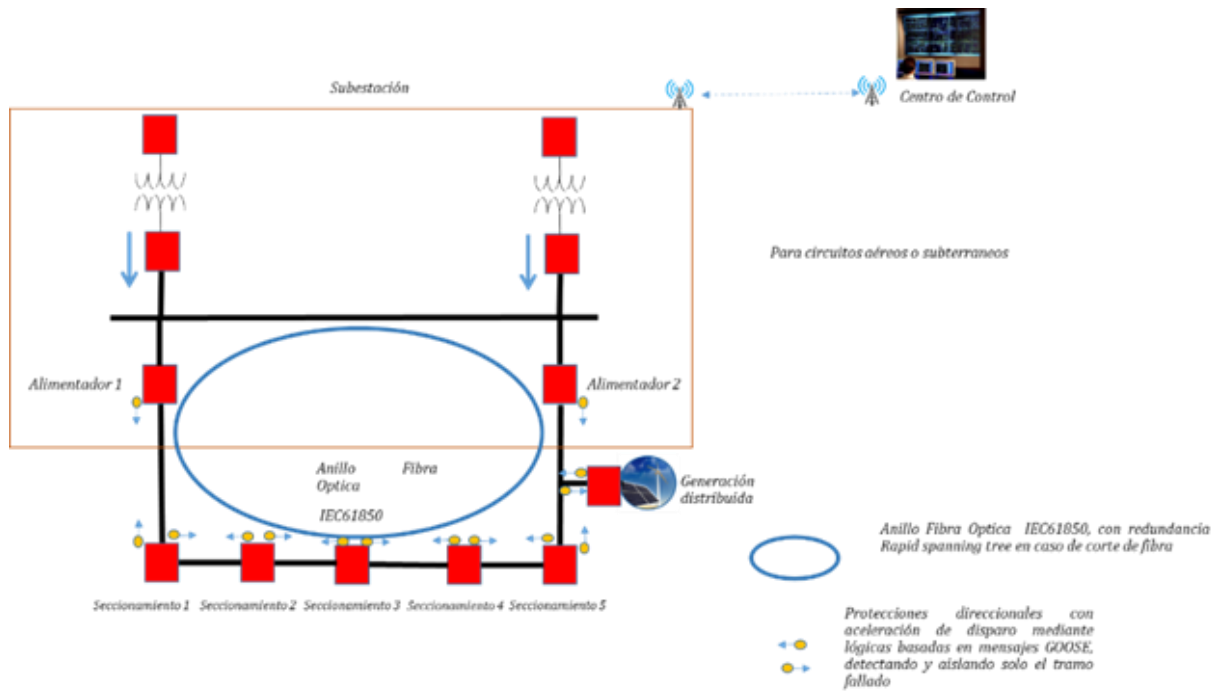


STUDY COMMITTEE D2
INFORMATION SYSTEMS AND TELECOMMUNICATION

<http://d2.cigre.org>
/

2017 Colloquium
September 20 to 22, 2017
Moscow – RUSSIA

Likewise, there will be a case of success in Mexico of automatism of distribution circuits for the restoration of electrical energy and response to the demand making use of centralized control.



Cancún, Quintana Roo, 4 de mayo de 2016