static paralleling

THE CASE

Hospital application - Paris - FRANCE

The 4 backup generators power plant allows a common bus paralleling and a mains paralleling using both GENSYS 2.0 and MASTER 2.0.

Because of the important need of a reliable power supply on this site, the installation includes features such as:

- Medium voltage and low voltage paralleling on separate bus.
- Automatic start/stop sequence depending on load.
- Backup mode
- Security inhibition

More than all these options, it is also essential to reduce the blackout delays after a mains failure. In a normal application, the start and synchronization delay of the 4 generators before allowing the power to supply the plant can reach 1 to 2 minutes, which is not acceptable on a hospital application .

In order to provide an adapted solution and to allow the power plant to deliver its full power within a short delay, CRE Technology has proposed a feature integrated as standard in all its GENSYS 2.0 range: static paralleling.

STATIC PARALLELING EXAMPLES :

1. Farm in Saudi Arabia
2. Data center in France
3. Hospital application in France

OUR SOLUTION

Static paralleling aims at getting all the generators of the power plant synchronized and ready to provide full power within a short delay (less than 10s). The method to achieve this function is a startup synchronization with a common excitation ramp when all engines are closed on busbar and running at nominal speed..

Commissioning validation test:

During the commissioning of this hospital, static paralleling synchronization was performed within a 7s delay during several tests, providing that this reliable feature fits all sites requiring a maximum power safety.

More than the rapidity of the synchronization, static paralleling can provide the magnetization of step up transformers which allows the use of smaller power cable sections.

It represents a significant economy on medium voltage applications, even on single generator applications with transformers.

For the same reasons, the MASTER 2.0 also provides this option of transformers magnetization on black start operation.