SE Digital Power™

GE has developed a new comprehensive power solution for mission critical applications. SE Digital Power **is the first system of its kind** in the industry.

This system has been engineered to provide the high-end applications market with a through-going concept for critical power. This solution offers state-of-the-art technology combined with efficient tools for design.

SE Digital Power features integrated, **redundant UPS modules**, short circuit withstands of 80 kA/1-sec, **hot swappable components** with highest operator safety, **early smoke detection**, and oustanding **power quality metering**.

This reliable power solution is for Mission Critical Applications requiring a **24x7 operation**.

The vision for critical power solutions

In co-operation with key customers and utilizing GE cutting edge Power – protection, quality, management and security product portfolio the vision for the future was:

- **Easy** - One supplier for total solution
- **Modular standardisation for all parts** - High flexibility, investment protection
- **Total project accountability** – From design to operation – single point of contact and reference
- **Type tested** – Reliable power solution, safe reconfiguration and modification
- **Monitoring** - Total system management, excellent predictability
- **Maintenance** -Single point of contact, optimised life cycle cost
- **Fast** - Reduced project cycle time, process reliability for decentralised structures

GE imagination at work

SE Digital Power™

The integrated power solution

Power reliability to protect critical processes – cost efficient and flexible enough to follow changing requirements over the life cycle of the system. Not a phantasm, just combining a state-of-the-art products from a world-class company with a highly professional support and service organisation. The result is the first system of it's kind in the industry.

Cost efficient reducing project capital costs through reduced project cycle time, installation efforts and optimisation of product application.

Reduction in lifetime costs through Remote Monitoring and Diagnostics designed to maximise reliability, and predictability, avoiding unplanned downtime of critical processes reducing operating and consequential losses and high repair costs.

GE POWER CONTROLS
International Sales
Nieuwevaart 51
B-9000 Gent - Belgium
Tel. + 32 9 265 21 11
Fax + 32 9 265 28 90
E-mail:gepcbel@gepc.ge.com

GE imagination at work

680873
Ref. E/5311/E/EX 5.0 Ed.04/07

GE Consumer & Industrial
Power Protection

WORLDWIDE PARTNER

New
SE Digital Power™

The integrated power solution

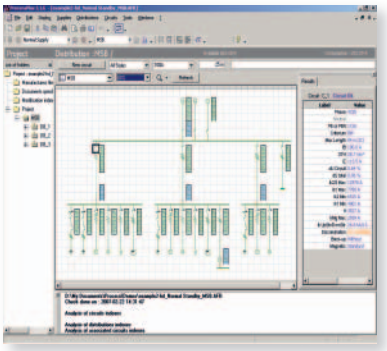
GE imagination at work

The new way:

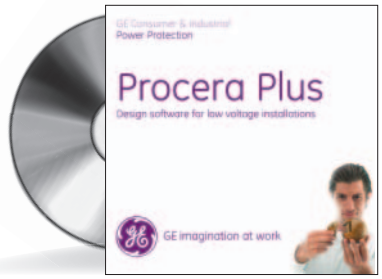
Complex projects for critical power can be split into six very specific phases

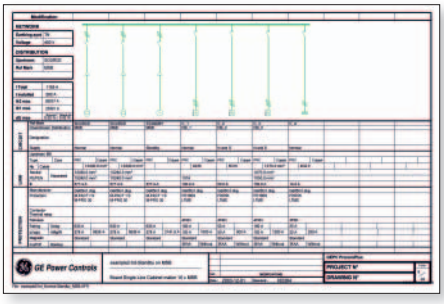
1. Calcule & Dimension

The sizing and calculation of the entire electrical system occurs in this stage. Procera Plus is a highly efficient software tool that supports the engineer during this critical phase of dimensioning and calculation. A very comfortable interactive control algorithm constantly verifies selectivity in the entire system, every time a single component is added to the single line diagram. A fully documented and optimised electrical system is the result of this step.



Procera Plus: efficient tool for systems up to 6300 A and 6 sources, earth systems TN, TT, IT; with or w/o N, ACB, MCB, MCCB, Fuses, thermal motor protection, back up protection.





Comprehensive output of Procera Plus, full list of project documents

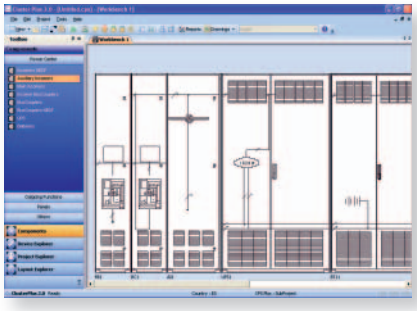
2. Configure & Design

Dimensions and configuration are essential for ensuring space is utilised fully and configured to facilitate easier installation and future expansion and mainenance

ClusterPlus is the tool for phase two, a comprehensive design suite to effectively configure and design the equipment, starting from incoming main feeders and switch gears over integrated UPS to sensing and monitoring components. The output of this phase is a set of documents – general arrangement, floor layout plans, bus bar layout in AutoCAD format

The systems constantly check that design rules are respected, not matching or not compatible components are automatically refused.

ClusterPlus: Complete project documentation: Front view of 3 feeder cabinets

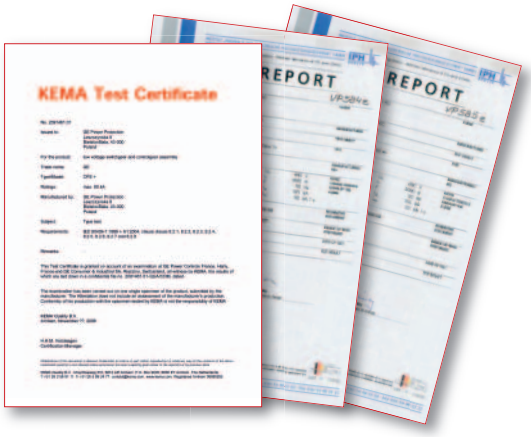


understand and respect

3. Build & Test

In this phase is the build-up of the individually designed system, type tested according to EN/IEC 60439-1 in the factory, completed with a rigorous real-life testing procedure. SE Digital Power features a comprehensive switchboard system offering hot swappable replaceable components with highest operator safety; integrated, redundant UPS modules with no single point of failure and EMI Class A for the entire system.
Main bus bars up to 4000 A with a short-circuit withstand of 80 kA/1-sec and total UPS capacity of up to 4000 kVA allow to design reliable power systems for a wide range of applications.
To reach highest reliability, options such as early smoke detection and comprehensive power quality metering is linked to an outstanding monitoring & diagnostics system, creating a reliable power solution for Mission Critical Applications.

Integrated wrap-around module for UPS providing operator safety and reduced MTTR.



4. Install & Commission

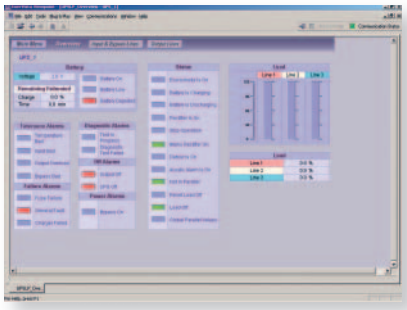
Saving money, time, space is probably the most appropriate statement for phase 4. SE Digital Power comes split in single cabinets, as all components are bus bar based, no cabling between modules, no cable trays required. All sensing and monitoring components are mounted in a specific cabinet, and the entire system is pre-wired. One just needs to connect the plugs on top of the cabinets – real plug-and-play for RM&D.

SE Digital Power™ the process!

5. Operate & Monitor

Reliability is based on predictability – no surprises, no unplanned interruptions, total system monitoring. In standard installations, the power quality element (UPS) has an acceptable level of monitoring and diagnostics to the rest of the electrical infrastructure, "classic surveillance" is the often used term, this is both inefficient and un-reliable and inappropriate for a critical system: Electrical systems typically do not crash surprisingly in a second – usually there are pre-warning indications: a deterioration of components, a change of the load characteristics, a variation of ambient parameters, etc. VIEWPOINT is the RM&D part of SE Digital Power, a software suite, combined with high performance sensing equipment for power quality or early smoke detection. Analog and digital signals of multiple sources are managed on the same communication network as intelligent trip units and UPS via Modbus.

Laser based early smoke detection system with 0.005%/m smoke sensitivity to monitor every single compartment



Comfortable MMI allows easy integration of multiple signal- and data sources into the RM&D system

6. Service & Maintain

The most expensive part of a critical power system is a failure of the power supply to the critical process. Saving 5% with the purchase order and lose x100% because of an unreliable system is not an option. Reliability and availability can only be reached and maintained over the years with an appropriate service concept. Permanent diagnostics and expert analysis are the prerequisites for professional work to be done. SE Digital Power RM&D solution is combined with an individually defined service package for the customer. The system provides data tothe expert in the service department who will analyse the structure to detect possible reliability risks or performance bottlenecks. He will discuss his findings periodically with the customer in order to initiate timely actions.