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ENCORP

Pick Your Power℠

Virtual Power Plant™

VPP is technology neutral and can be used with all types of generation and storage assets.

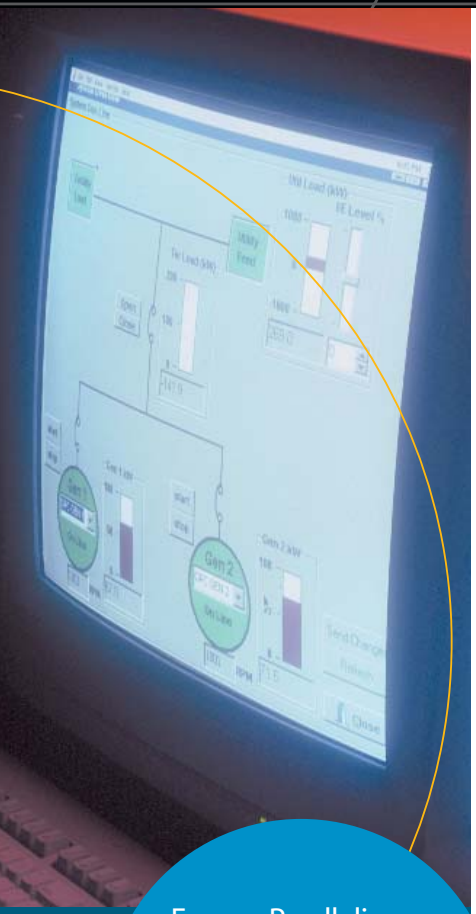
Features

- Starts and stops pre-defined groups of remote generators with one-button-dispatching
- Virtual Site Aggregation – able to group physical site resources into user-defined site groups known as Virtual Power Plants.
    - Virtual sites may be created based on physical proximity, power generation methods, aggregate capacity, or other criteria such as cost of power generation
    - Virtual sites may be dispatched from a user action (one-but ton-dispatching) or by pre-scheduling it from the VPP interface
- Uses an ODBC complaint database that records all events and commands issued by the VPP
- Dispatch Scheduling –
    - Virtual sites may be setup to automatically dispatch at certain times or in response to specific events
    - Able to automatically synchronize all distributed energy resources so that scheduled events occur simultaneously

Benefits

- Power is easily and quickly dispatched
- Different virtual sites may be created and dispatched according to different economic criteria
- Vast power generation capacities can be rapidly designed, built, and deployed
- The distributed nature of the energy resources results in lower capital cost, thus less financial and political risk.
- Competitive energy generation in $/kWh vs. traditional central power plus T&D delivery
- Integration of fossil-fueled resources with renewable energy technologies
- Complement existing GT&D in the short term while allowing the best mix of central and distributed resources in the long term
- Increased grid stability and power reliability

Virtual Power Plant™



Encorp Paralleling equipment provides generator control, monitoring, protection and energy metering capabilities.

Virtual Power Plant Components

Dispatch Center

Dispatch Workstation (DWS) – a Windows® NT based PC running Virtual Power Plant™ software. Used for dispatching remote sites via dial-up modem or LAN/WAN

Encorp's Virtual Power Plant runs on the Dispatch Workstation, starts and stops remote generator sets (gensets), allows users to organize groups of gensets or groups of sites for one-button-dispatching, and includes an industry standard database for recording all events occurring between the VPP and its distributed network.

Communications Processor Module

Encorp's Virtual Power Plant (VPP) Server runs on the Communications Processing Module (CPM). The VPP Server enables communication with the VPP software that contains all site-specific information.

The VPP Server manages generator sets (gensets) and other devices present at a site—this includes communication with all of the I/O servers for data collection and dispatch commands. The VPP sends all communications with the CPM through the VPP Server.

How does this work? The VPP contacts the CPM and it requests information on all the physical sites. The VPP then obtains all of the data on the devices contained at the sites. The VPP server is ready to gather data from all of the nodes when it starts running. Encorp performs the initial configuration of the VPP Server.

Remote Generation Sites

Encorp Power™ hardware – Encorp Power™ paralleling equipment provides generator control, monitoring, protection and energy metering capabilities.

Virtual Power Plant Advantages

VPP is technology neutral, use with all types of generation and storage assets:

- Diesel and natural gas gensets
- Micro-turbines
- Steam and combustion turbines
- Wind-diesel hybrid systems
- Renewable energy: wind, solar/photovoltaics, biomass, micro-hydro
- Fuel Cells
- Energy storage: batteries, flywheels, capacitors, compressed air and hydraulic energy storage

Use in a variety of applications: Distributed Generation, Village Power, Cogeneration, Peak Shaving, Baseload, and more.

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