RMS ENERGY
NETA

DATA CENTER GRID INTEGRATION

At RMS Energy, we specialize in delivering comprehensive power system consulting services tailored for data centers to ensure reliability, efficiency, and sustainability in their operations. With a team of experienced professionals and cutting-edge technology, we provide unparalleled expertise in power system planning, engineering, and strategic studies, enabling data centers to meet the demands of modern digital infrastructure.

- SYSTEM PLANNING & ANALYSIS
- RENEWABLE ENERGY INTEGRATION
- BACKUP GENERATOR INTERCONNECTION & RELIABILITY ENHANCEMENT
- STRATEGIC & ECONOMIC STUDIES FOR OPTIMIZED ENERGY USE
- REGULATORY & COMPLIANCE SUPPORT

OUR SERVICES

TAILORED SOLUTIONS EMPOWERING SEAMLESS DATA CENTER INTEGRATION

Data Center Challenges

POWER SYSTEM CHALLENGES

- Large power demands.
- Voltage regulation challenges stemming from large load fluctuations.
- High reliability requirements from Data Centers.

MODELING GAPS

- Limited Phasor and EMT models.
- Limited available load composition and load profile data.
- Absence of universally accepted standards for modeling data center loads.
- Control functions of UPSs leading to disconnection from grid.

RELIABILITY & RESILIENCE OBSTACLES

- Need for Tier 4 fault tolerances and power supply reliability for data centers.
- Lack of universal fault ride-through standards for data center loads.
- Grid stability issue with dynamic large loads, like data centers.

OPERATIONAL CHALLENGES

- Managing reactive power demands for large data centers.
- Voltage regulation issues and large power demand fluctuations.
- Frequent Mode Switching and transitioning between grid-connected, islanded, and backup systems.

RMS Energy Offerings

MODEL DEVELOPMENT

- Develop accurate steady-state and dynamic models for transmission planning studies and interconnection applications.
- Develop accurate EMT models to evaluate and address power quality issues such as flicker and harmonic.
- Develop and update data center load composition as per industry inputs.
- Analyze the impact of data center models on overall grid performance and stability.

INTERCONNECTION SUPPORT

- Evaluate data center impacts on grid reliability and stability.
- Develop solutions to meet FRT requirements for large data center loads.
- Design strategies using STATCOM, BESS, etc., for dynamic voltage regulation and power quality improvements.
- Facilitate discussions between utilities, OEMs, developers, and EPCs to align on interconnection standards and requirements.

DESIGN STUDIES & BTM SOLUTIONS

- Transition solutions between grid-connected and islanded modes.
- GFM solutions to provide inertia, voltage, and frequency support.
- Backup power strategies and reliable generator solutions to ensure uninterrupted operations for data center loads.

WHY CHOOSE RMS ENERGY?

EXPERTISE | CUSTOMER FOCUS | INNOVATION | RELIABILITY | SAFETY

RMS ENERGY

Connect with us to learn more about how we can support your power system needs and help you achieve your energy goals.

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