



CONFIDENTIAL CLIENT




17.6MW COLOCATION DATA CENTER PROJECT

 Commissioning
& Qualification


 Building
Commissioning

 Asset Management
& Reliability


 Quality, Compliance,
& Regulatory

 Human
Performance

 Process &
Manufacturing Technology

 Program & Project
Management

 Automation &
Information Technology

 The Chemistry of Full-
Scale Operations™

 Data
Centers

WHEN YOU NEED TO MEET A HIGHER STANDARD™

PROJECT OVERVIEW

Greenfield build of a single story, 169,000 square feet, 17.6MW Data Center with a design reliability of 99.999%. CAI provided third party commissioning services for the Client/Facility Owner.

OBJECTIVE

Build and bring into operation a new Data Center colocation facility within the assigned project schedule.

SERVICES PROVIDED

- Design Review involving review and comments on the Client's Basis of Design (BoD), Commissioning Plan, Owner Project Requirements (OPR), vendor drawings, and Client specifications
- Factory Witness Testing for all Electrical and Mechanical equipment
- Site quality checks of vendor installations
- Functional Performance Tests (FPT) of all electrical and mechanical equipment (This included development of equipment specific test scripts and test process management)
- Integrated Systems Tests (IST) of all electrical and mechanical equipment
- Initiated and tracked all commissioning issues through resolution
- Final system turnover of all systems including verification of all construction documentation, vendor O&M manuals, Commissioning test reports, Description of Operation documents, and training manuals


EQUIPMENT


- Four Data Center colocation rooms with associated infrastructure
- Main Distribution Frames
- Reserve UPS
- Multiple self-contained, diesel-powered backup generators
- Building Automation System (BAS)
- Roof-top Air Handling Units integrating systems for space humidity control, temperature control, and pressure control
- Dx Chillers
- Utility Substation switchgear and transfer switches
- Medium and Low Voltage Switchboards

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EQUIPMENT CONTINUED

- Automatic and Static Transfer Switches
- Uninterruptible Power Sources (UPS) – battery backup
- Electrical Protective Relaying system
- Fire System Pre-action systems
- Site Generator Fuel Supply and Monitoring systems

VALUE DELIVERED

All commissioning was conducted allowing the Client to populate all data colocation rooms as scheduled. The project commissioning was conducted completely on computer tablets and uploaded through the Client's automated commissioning management system. All testing issues were also documented and tracked completely on project database systems.

Several single points of failure were identified through the review of system drawings and Sequences of Operation (SoO) and were documented during the FPT phase. These potential failures were corrected through later design changes and retested satisfactorily.

The integration of trending space environments to validate proper operation of Air Handling Units and controls from the BAS provided extremely helpful data to allow control system modifications. This ensured the systems operated as designed and specified by the Client. This also allowed the Client to successfully operate these systems starting Day one instead of requiring months of tweaking of control system values to finally arrive at a fully functional system and control scheme.