



CONFIDENTIAL CLIENT




SAN ANTONIO, TEXAS | USA
1 YEAR + 4 MONTHS | \$2.6MM

CONSTRUCCION & Cx SOLUTIONS FOR GREENFIELD DATA CENTER COMPLEX

 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

CAI was engaged by the General Contractor (GC) to develop the installation and commissioning schedule, provide oversight of all commissioning deliverables, and coordinate all MEP contractor and vendor work activities.

SOLUTIONS PROVIDED

CAI provided a team of five experienced and qualified personnel to integrate into the GC's staff to:

- Coordinate MEP equipment installation and commissioning activities to meet key event milestones
- Develop the schedule and coordinate all activities performed for all startup activities and commissioning testing
- Provide direct oversight of all Level 1 through Level 3 commissioning activities, including:
 - Pre-energization testing and Quality Assurance (QA) inspections
 - Energization procedural review/approval and direct oversight
 - Level 3 startup testing coordination and validation
 - Issue identification, tracking and resolution
- Author and approve Methods of Procedure (MOP) for MEP tests and repairs performed by GC personnel, sub-contractor personnel and owner vendor personnel
- Facilitate team and equipment readiness for Functional Performance Testing (FPT/L4) and Integrated System Testing (IST/L5)
- Coordinate the corrective actions for all MEP equipment repairs and subsequent retests
- Interface with the Owner, Architect/Engineer and GC teams in design changes, Requests for Information (RFI) and issue resolution
- Mentor several new vendor Project Managers to optimize their team's performance

CONTINUED ON BACK

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CHALLENGES SOLVED

Based on the scope and complexity of the problem, the GC was understaffed in personnel experienced with Data Center MEP construction and commissioning management. At the point CAI was brought on, the project was several months behind and continually losing days against the delivery schedule. Each lost operational day represents ~11 million in lost revenue for the owner¹ and potential liquidated damage costs against the Data Center GC.

VALUE DELIVERED

The CAI team, in close coordination with the GC's staff, arrested avoidable schedule slippage by:

- Developing effective workflows to optimize the delivery timeline in the face of multiple equipment malfunctions and vendor non-performance
- Effectively communicating across the team to maximize personnel availability and readiness as well as equipment readiness
- Fulfilling the Energization Marshall role on the GC staff enabling the GC to absorb the loss of a senior MEP manager without detrimental project impact
- Maintaining equipment deficiency & inspection records, corrective action and reinspection records; the detailed records and ability to effectively explain the history of equipment problems and resultant vendor actions enabled the client to avoid over \$133,000 in vendor re-work charges
- Performing Root Cause Analysis to identify, correct, and avoid future recurrence of two personnel-related reportable safety incidents
- Providing Superintendent support on the GC's team for Electrical and Mechanical testing activities

¹Cost estimate is based on the reported 95 minute average outage duration at a cost of \$740,357 per outage Bill Kleyman, "New Study: Cost of Data Center Outages - 2016" February 8, 2016, Data Center Frontier <https://datacenterfrontier.com/cost-of-data-center-outages/>