

# Commissioning Specialists for Mission-Critical Facilities



[dataquestcx.com](http://dataquestcx.com)

## SERVICE PROFILE

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# Why DataQuest CX?

## **Veteran Discipline. Global Experience. Documented Certainty.**

We blend the precision of engineering with the discipline of field validation—bridging the gap between design intent and operational reality.

Our team has commissioned mission-critical capacity across North America, delivering confidence to owners, developers, and EPC partners alike.

### **Core Strengths**

- Full-spectrum commissioning (LO-L6, IST)
- Mechanical, electrical, Building Management System (BMS), Electrical Power Monitoring System (EPMS), Fire and Life Safety (FLS), and security system integration
- Data-driven reporting and traceability for every phase
- Proven expertise in hyperscale and enterprise deployments

### **Turnkey Pre-Commissioning Services**

Our expertise goes beyond data center commissioning; we belong to a family of companies that provide pre-commissioning expertise that supports cleaning activities for a flawless start-up.

DATAQUESTCX + FOURQUEST ENERGY

# Mission-Critical Data Center Commissioning

A Strategic Partnership Built on Precision, Performance, and Trust



## Where Pre-Commissioning Excellence Meets Commissioning Certainty

In data center development, the margin for error is zero. Every day of delay costs upward of \$100,000 in lost revenue. Every compromised system threatens uptime and warranties worth millions. Success requires a unified approach connecting system cleanliness to operational readiness.

DataQuestCX and FourQuest Energy deliver this approach: pre-commissioning services that eliminate contamination risks, followed by commissioning validation that proves every system performs exactly as designed.

## The Partnership That De-Risks Your Timeline

DataQuestCX provides end-to-end commissioning assurance from advisory through Level 6 Integrated Systems Testing, delivering measurable certainty in

power, cooling, and controls—validating that design intent becomes operational reality.

FourQuest Energy systematically removes operational threats before they impact timelines. Our properly engineered solutions eliminate contamination, preserve warranties, and protect commissioning schedules.

## Saa Dene FourQuest LP partnership successfully initiates and maintains meaningful Indigenous and local community partnerships

Saa Dene FourQuest LP, our partnership with Chief Jim Boucher of Fort McKay First Nation, delivers responsible energy development throughout Canada with proven Indigenous engagement, leadership, and community development.

# Integrated Services for Data Center Projects

## How We Work Together to Save You Time and Money

### SAA Dene FourQuest

- Focus on pre commissioning services
- For Power Plants: Steam blowing and chemical cleaning of steam systems, air blowing of general lines, oil flushing for generator lubrication, disinfection of potable water lines
- For Data Centers: Oil filtration of back up generators and air blows or water flushing of chiller loops

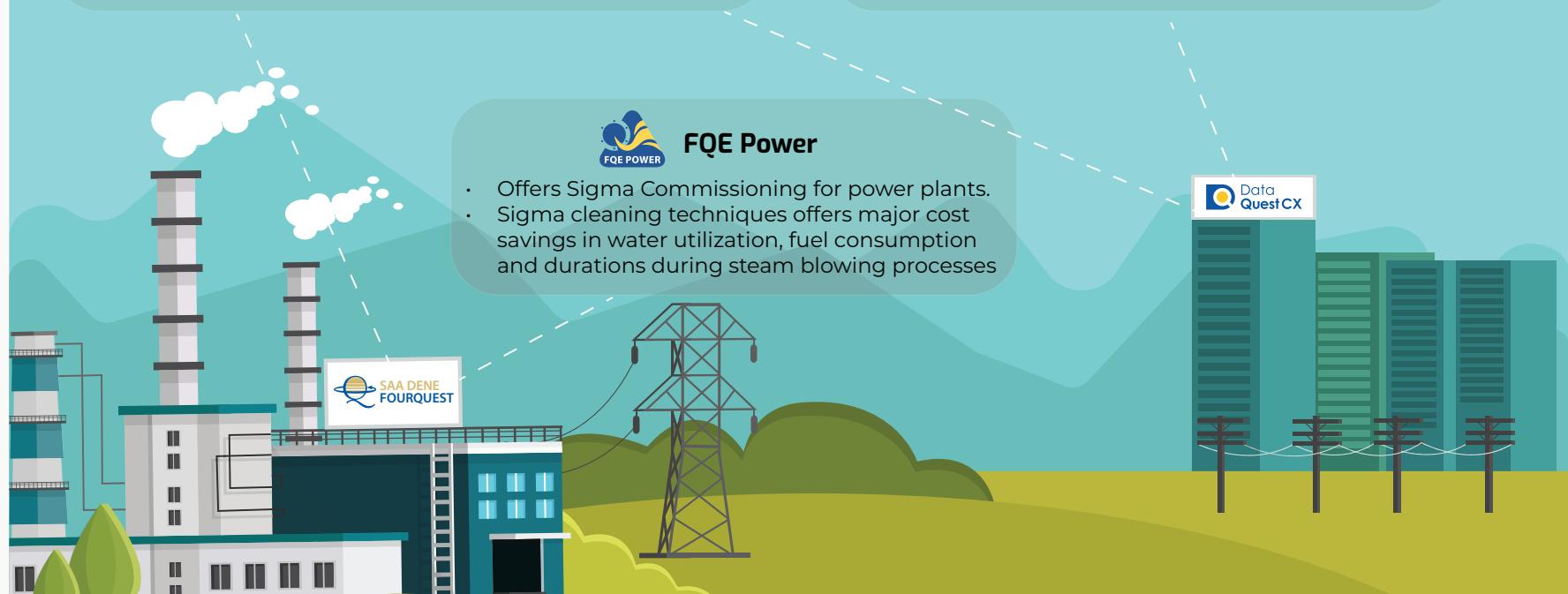
### DataQuestCX

- Comprehensive services from L0-L6 commissioning.
- Specializes in both mechanical and electrical services around chiller plants, HVAC, back up generators, PCL testing, thermographic IR and integrated systems testing



### FQE Power

- Offers Sigma Commissioning for power plants.
- Sigma cleaning techniques offers major cost savings in water utilization, fuel consumption and durations during steam blowing processes



**CORE SERVICES**

# Commissioning Advisory & Program Management

***“Plan the Test—Then Test the Plan.”***

DataQuest CX supports owners, developers, and EPC teams from design through turnover—defining commissioning strategy, documentation standards, and test protocols that guarantee traceable, repeatable results.

## **Key Capabilities**

- Commissioning (Cx) program development and Level 0-3 planning
- Alignment of the Basis of Design (BoD) and Owner's Project Requirements (OPR)
- Factory witness testing and vendor coordination strategy
- Schedule integration with construction and energization milestones
- Owner's representation and risk oversight
- Documentation control and regulatory compliance tracking

**Outcome:** Fewer surprises, faster energization, and complete confidence that every prerequisite is met before power-on.



# Performance Validation & Integrated Testing

We validate system performance under real-world stress.

DataQuest CX executes comprehensive commissioning and verification of mechanical, electrical, and control systems—confirming that every sequence, alarm, and interlock functions as intended.

## Core Services Under Performance Validation

### Commissioning Scripts & Close-Out Packages

*“The Blueprint for Flawless Start-Up.”*

We develop tailored Functional Performance Test (FPT) scripts and verifiable Close-Out Packages. Each script defines clear performance metrics, verifies completion of prerequisite levels (L2-L3), and secures stakeholder sign-off before testing.

**Outcome:** Systematic verification, error detection, and complete traceability for turnover.

# We Catch Failures Before They Catch You

## Factory Acceptance Testing (FAT)

*"Tested Today. Trusted Tomorrow."*

We oversee FATs for generators, Uninterruptible Power Supplies (UPSs), switchgear, and cooling units at manufacturer sites—verifying functionality, firmware, and sequence control before shipment.

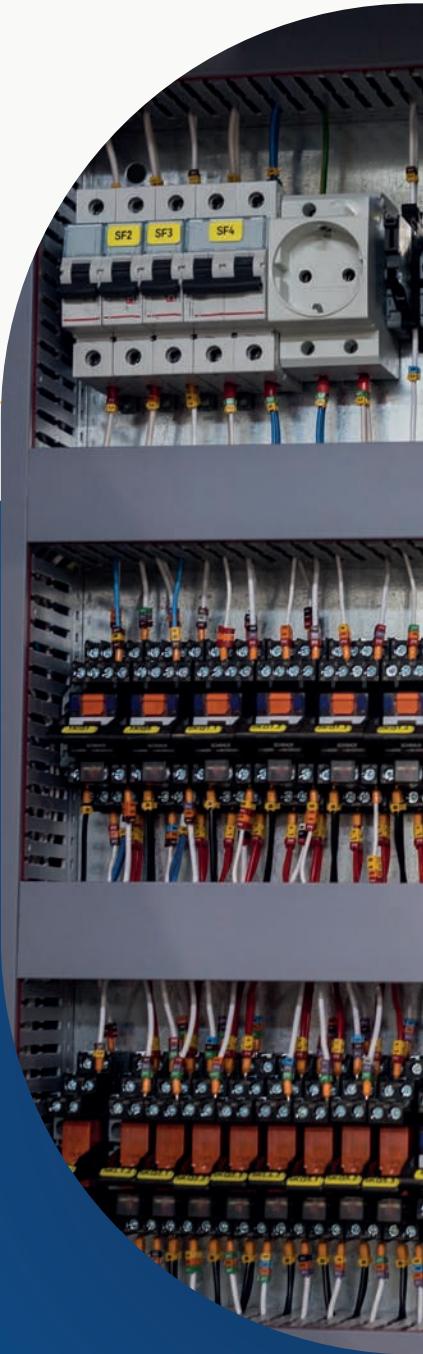
**Outcome:** Zero on-site surprises, reduced commissioning risk, and minimized rework.

## Thermographic Inspection

*"Catch the Heat—Keep the Uptime."*

Infrared (IR) scanning identifies hot spots, loose terminations, and thermal anomalies during live operations, performed to NFPA 70E (Electrical Safety in the Workplace) and NFPA 70B (Electrical Equipment Maintenance) standards.

**Outcome:** Early fault detection, enhanced reliability, and verified system health.



# Performance Validation & Integrated Testing

## System Energization & Dynamic Load Bank Testing

We validate electrical and mechanical systems under real operational loads, adhering to NFPA 110 (Emergency and Standby Power Systems) and ISO 8528 (Reciprocating Internal Combustion Engine Driven Alternating Current Generating Sets).

Testing confirms system integrity, power quality, and relay performance during energized operation.

**Outcome:** Proven operational resilience and full documentation of power quality and protection settings.

# Push it to the Limit—Before It Matters

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## Systems Integration & Integrated Systems Testing (IST, L4-L6)

*“From Complex Systems to One Mission-Ready Machine.”*

We verify full ecosystem performance—power, cooling, controls, and monitoring—under integrated failure scenarios.

Tests include Electrical Power Monitoring System (EPMS) and Supervisory Control and Data Acquisition (SCADA) interlock verification, control power transfer, and alarm hierarchy validation.

**Outcome:** Confirmed resilience, unified performance, and verified Key Performance Indicators (KPIs) such as Power Usage Effectiveness (PUE), Data Center Infrastructure Efficiency (DCIE), Water Usage Effectiveness (WUE), and Energy Reuse Effectiveness (ERE).





# Reliability & Technical Support

***"Prove Performance. Preserve Uptime."***

After turnover, DataQuestCX continues to support reliability through trending analysis, re-commissioning, and root-cause investigation.

We document, analyze, and verify system performance to maintain compliance and operational efficiency throughout the facility lifecycle.

## Key Capabilities

- Seasonal and recurring re-commissioning
- Trending and Power Quality Monitoring (PQM) analysis
- Alarm and control optimization
- Documentation updates and lessons-learned reports
- Owner training and readiness validation

**Outcome:** Sustained reliability, regulatory compliance, and measurable uptime performance.



# Air Blowing

**Engineered air blowing is a predictable method to remove construction debris, loose rust, liquids, and other contaminants from chiller loop and process piping.**

Data centers have chiller loops that are often large in diameter rendering traditional water flushing prohibitively expensive. Engineered air blows are time effective though proper sequencing and achieving optimal cleaning forces of 1.5 (CFR >1.5). Compressed air can be used to dry or pack lines.

## **Applications within the Data Center Industry:**

- Removal of construction debris of chilling water lines
- De-watering and drying
- Pre-packing dry pipe firewater systems
- Leak Testing





## Filtration

**FourQuest Energy provides a large range of fluid filtration services. ensure particulate is filtered of water to prevent clogging of computer room air handers (CRAHs) or computer room air conditioners (CRACs)**

Bag filtration is an economical filtration method consisting of three components: a pressure vessel, micron-rated filter bags, and a filter bag retainer basket. Filter bags vary from 1 micron absolute to 100 micron nominal, depending on client request specification. The filter bags are highly efficient at 99% for absolute filter bags and above 80% for nominal bags.

Water flushing is the cleaning solution of choice for heat exchangers or CRAC/CRAH units themselves to maximize cooling performance and reduce energy costs.

### **Applications within the Data Center Industry:**

- Meeting requirements for product cleanliness
- Remove debris and scale from fire water protection systems
- Maintain water quality in HVAC system
- Ensure cooling performance of heat exchangers, CRACs and CRAHs



# Hydro-milling

**Hydro-milling is an efficient method of cleaning industrial piping through the implementation of high-pressure water nozzles and jets.**

Newly installed process piping contains foreign debris that compromises system reliability and causes premature degradation and failure. Hydro-milling preserves piping integrity by removing contaminants and particulate matter, including welding slag, mill-scale, loose rust, and mineral sediment.

This method serves as an excellent alternative to filtration and water flushing when piping diameters are too large or cost-effective temporary equipment is unavailable.

## **Applications within the Data Center Industry:**

- High degree of cleanliness on non-critical and critical systems
- Can be completed in a variety of conditions, including subzero climates
- Removes both fine and large particles
- Lower water requirements compared to conventional water flushes
- Water recycling capability with minimal waste disposal requirements
- Reduced costs associated with time and scheduling





# Lube Oil Flushing

## Electrical Back-Up Generators

**Flush the risks out. Keep the power steady.**

When the grid fails, generator failure isn't just inconvenient—it's catastrophic. Contaminated lubrication systems cause bearing failures during the exact moments you need backup power most.

Even new generators contain manufacturing debris and metal particles that damage precision bearings during startup and void warranties. FQE's specialized oil flushing skids achieve stringent ISO cleanliness criteria within compact data center footprints. We remove destructive contaminants before first startup, preserving warranty coverage, maximizing bearing life, and ensuring startup confidence.

**The bottom line:** Pre-commissioning oil flushing protects your equipment investment and operational reputation.

# Data Center Pre-Commissioning Services: Clean Systems, On-Time Launch, Zero Surprises



## Protect Your Investment. Guarantee Uptime from Day One.

Your data center's cooling infrastructure represents millions in capital investment and is the lifeline preventing catastrophic IT equipment failure. A single cooling system malfunction can cascade into expensive downtime, violated SLAs, and equipment damage that voids warranties.

### The Cost of Skipping Pre-Commissioning Cleaning:

- Delayed go-live schedules costing \$100K+ per day in lost revenue
- CRAC/CRAH unit failures requiring emergency replacements during critical startup phases
- Reduced cooling efficiency increasing operational costs by 15-30% annually
- Voided equipment warranties due to contamination-related damage
- Unplanned downtime when debris causes blockages post-launch

### Our Pre-Commissioning Cleaning Services Deliver Measurable Results:

FQE systematically removes operational threats before they impact your timeline or bottom line

**Air Blows:** Blow out large debris to prevent costly blockages at cleaning force ratios greater than 1.1, ensuring proper removal.

**System Flushing and Filtration:** Utilize external filtration systems designed to capture contaminants, thereby protecting in-line system strainers or meet NFPA standards by verifying fire systems are capable of designed flows.

**Chlorination and Biofilm Removal:** Disinfect potable water lines within the building for suitable drinking water.

**High-Pressure Water Blasting:** Remove even the toughest of mill scale by cutting it out of your system.

## Electrical Back-Up Generators

*Flush the risks out. Keep the power steady.*

**When the Grid Fails, Your Generators Must Start—Every Single Time.**

In mission-critical facilities, generator failure isn't just an inconvenience—it's a business-ending event. Contaminated lubrication systems are the leading cause of bearing



failures that can destroy generators during the exact moments you need them most.

#### **The Hidden Risk in New Generators:**

Even factory-fresh generators contain manufacturing debris, metal particles, and contaminated oil that will damage precision bearings during startup and void your warranty before you generate your first kilowatt.

#### **Our Oil Flushing Eliminates This Risk—Guaranteed:**

FQE's specialized, self-contained oil flushing skids achieve even the most stringent ISO cleanliness criteria quickly and within the compact footprints typical of data center mechanical spaces.

#### **What This Means for Your Operation:**

- Warranty protection preserved – Meet OEM cleanliness requirements and maintain full coverage
- Bearing life maximized – Remove destructive particles before they cause wear
- Startup confidence – Know your backup power will perform when the grid fails
- Commissioning timeline protected – Avoid delays from contamination-related test failures

- Long-term reliability – Start with clean systems that deliver design life expectations

**The Bottom Line:** A generator that fails on startup represents millions in potential losses. Our pre-commissioning oil flushing is insurance you can measure—protecting both your equipment investment and your operational reputation.

#### **Why Data Center Operators Choose FQE**

##### **Experience That Prevents Expensive Surprises**

- Pre-Commissioning Specialists for Critical Infrastructure – We understand data center timelines and the cost of delays
- Customized Service Solutions – Every system receives cleaning protocols engineered for its specific requirements and contamination profile
- Cross-Discipline Expertise with Safety Focus – Our teams work across mechanical, electrical, and controls systems with zero-incident safety records
- Documentation for Compliance and Handover – Receive detailed reports proving system cleanliness for warranty claims, audits, and operations teams



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