

**QTS** **FACILITY OPERATIONS**  
*A QTS Data Industry Perspective*



# INTRODUCTION

## *Prepared, Disciplined, and Consistent for Maximum Uptime and Exceptional Performance*

According to the Uptime Institute, human error is the leading cause of data center downtime. Whether it is caused by not following standard procedures, or carelessness, or overlooking a pending equipment failure, inattentive or underprepared staff can cause costly outages and create potentially serious safety problems. In addition, given the intense focus on improving energy efficiency and reducing total cost of ownership, data center providers often, overly focus investment in data center systems and overlook the potentially more important asset, the people managing those systems and facilities.

At QTS, not only do we invest in our data center infrastructure, we also invest to prepare and develop the people that operate and maintain it. We hire experienced electrical and mechanical facility engineers and provide rigorous, ongoing certification training. We believe having experienced staff with certifications ensures that our engineers have the knowledge level and skill set required to most proficiently manage complex systems and provide exceptional service. On top of this, we apply stringent processes and procedures for every activity within the data center to ensure operations are consistently at optimal levels and to prevent complacency that can result in missed precautions or steps. By applying this holistic approach to facility operations, focusing on both education and process, we guarantee our critical systems are operated and maintained with the utmost level of expertise and precision. This provides maximum reliability, availability and safety for our clients.

### **WE ARE THE FIRST RESPONDER**

The goal of our facility operations development programs are to enhance staff technical knowledge, improve facility and equipment performance, support flawless service delivery, and increase client satisfaction. Most data center operators provide their employees only operator training for the equipment in the facility. At QTS, we go a step above, and provide factory operator and repair training. This ensures our engineers are technically trained to not only operate, but to troubleshoot and repair equipment at the level the manufacturer of the equipment would.

With this extensive training and experience, QTS electrical and mechanical facility engineers can rapidly identify and respond to emergency situations or any unusual circumstance pertaining to equipment. Most other data center operators are dependent on

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## QTS FACILITY OPERATIONS CERTIFICATION PROGRAM

### CERTIFICATES

1. UPS Power
2. Cooling and Control Systems
3. Fire and Life Safety
4. Emergency Power Systems and Generator
5. OSHA – 30 Hour Training

### Components

- Product fundamentals & Operation
- Component recognition
- Facilities technician troubleshooting and maintenance
- Safety considerations
- Emergency response recovery

### Training

- OEM factory training
- Web-based technical certification by TPC Training Systems
- In-house system review and drills
- Vendor education programs
- Required safety and code compliance training

their equipment vendors for repair and often wait 2 to 4 hours for them to arrive on-site just to begin the troubleshooting process. We, on the other hand, do still notify our vendors, but while the vendor is in transit, we can begin to troubleshoot and repair. Time is of the essence, especially when restoring availability to your data center.

### PREVENTATIVE MAINTENANCE AVOIDS PROBLEMS AND LOWERS COST

Preventative maintenance in a data center is not unlike preventative maintenance for your car. Maintenance not only ensures that the equipment is running at its designed level, but also identifies any faults before they find you.

QTS takes an investigative approach to preventative maintenance and has implemented a Reliability-Centered Maintenance (RCM) framework. Our RCM activities significantly increase efficiency and reliability resulting in well-maintained systems that use less energy and cost less to run. RCM is even more important in preventing equipment failure, which costs 5 times less to fix before it breaks, and helps us maintain uptime and avoid potential customer impacting situations.

### ELIMINATING THE “ERROR” IN HUMAN ERROR

No matter how much experience and training a person has, they are still human, and may make a mistake. For a facility engineer, stress levels can be very high, especially when supporting the valuable information of our clients and managing the vast amount of power running through a large, multi-tenant data center. Given this, to reduce the potential for errors, QTS maintains and utilizes hundreds of Method of Procedures (MOPs) for everyday operations, maintenance, repair and emergency situations. The level of detail involved in our MOPs rivals those utilized in the nuclear power industry. All MOPs go through an extensive triple check management review process prior to change control submittal and are controlled by the on-site change director for all work efforts. To further safeguard any procedure, all MOPs apply a dual custody, two-man control process whereby one individual leads the procedure and his partner executes. Having granular detail and stringent controls ensure no step in the process is missed or taken out of sequence. This especially helps and sustains a greater level of coordination and control in emergency situations.

**MAINTAINING THE TALENT PIPELINE**

Our dedication to continuous improvement and learning not only produces knowledgeable employees but develops a capable and experienced QTS talent pipeline. This allows our engineers to expand their skill set and advance their career, while, at the same time, QTS ensures experienced staff are ready to assume greater responsibilities and promotions. For QTS, retaining facility operators with advanced skills and knowledge is critical for uptime and efficient operations. For other facility operators, losing employees to attrition can be detrimental to their operations especially when so many become dependent on single engineers.

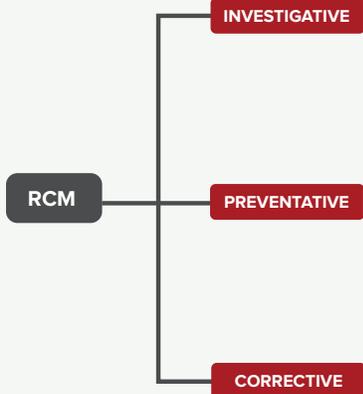
**STANDARDIZED AT EVERY QTS FACILITY**

All processes and procedures are standardized across all QTS facilities and all facility engineers follow the same development programs. This allows engineers in one facility to seamlessly operate and repair equipment in another facility. This increases productivity, eliminates confusion, promotes consistent management and provides greater flexibility and capacity for QTS to manage the facility and support customers. Standardization creates the right environment across our data centers allowing rapid response and the correct resolution from our people.

**Conclusion**

Data centers are more than the building, critical systems equipment, space and power. It is about service to our customers and it not only takes expert management and staff but disciplined maintainer operators to deliver against the objective of 100% availability and uptime. In short, it is about people.

**RELIABILITY-CENTERED MAINTENANCE (RCM)**



*QTS' implementation of Reliability-Centered Maintenance (RCM) includes three practices – investigative, preventative and corrective. By integrating these practices, we ensure all infrastructure systems remain in "like new" condition. This not only provides a highly reliable infrastructure for our customers, but preserves our data center assets and increases the energy efficiency of our facilities.*

**ABOUT QTS**



QTS Realty Trust, Inc. (NYSE: QTS) is a leading provider of secure, compliant data center, hybrid cloud and managed services. QTS features the nation's only fully integrated technology services platform providing flexible, scalable solutions for the federal government, financial services, healthcare and high tech industries. QTS owns, operates or manages more than 5 million square feet of data center space and supports more than 1,100 customers in North America, Europe and Asia Pacific. In addition, QTS' Critical Facilities Management (CFM) provides increased efficiency and greater performance for third-party data center owners and operators. For more information, please visit [www.qtsdatacenters.com](http://www.qtsdatacenters.com), call toll-free 877.QTS.DATA or follow us on Twitter @DataCenters\_QTS.