Featured Articles

IT OPERATIONS

Team Stability Leads to Continous Operations

A significant factor in the airline industry's tremendous safety record is its focus on procedure and repetitive tasks performed by the same individuals. For data center managers and owners, the same practice pays dividends.

READ MORE

Team Stability Leads to Continuous Operations

by David Boston

One of the most important lessons learned through benchmarking is the value of retaining consistent individuals for the most critical operations in a data center facility. A significant factor in the airline industry's tremendous safety record is their focus on procedure and repetitive tasks performed by the same individuals. Pilots are only permitted to fly certain models of aircraft after they have completed thousands of hours of training (on those specific models). With this level of investment, retention is critical.

For data center owners, the same practice pays dividends. Those with the lengthiest uptime records credit their reliance on *procedures*, the practice of having *two individuals present for each activity* ("pilot" and "co-pilot") so that one can verify the other is following the steps accurately, and the practice of <u>retaining the same individuals for critical functions</u>.

What's at risk: For many companies, the data center is the backbone of their business operation. An interruption to processing can be catastrophic resulting in significant damage to a company's reputation and ability to retain customers, in addition to creating immediate financial impacts due to service level agreement payouts. Because news is increasingly visible on a global scale, word of a service interruption travels rapidly to a far greater audience today.

Although each company's financial impact from a downtime event varies, an accepted rule of thumb for sizable operations with critical uptime objectives is $1 million per hour (industry surveys back this up). Virtually any facilities related event results in a recovery time of at least four hours, or $4 million, before all processing systems are restored successfully.

Each data center facility is unique: Unlike aircraft, where a limited number of models exist, each data center facility is unique. This factor increases the need for familiarity with the specific building for those who work in the facility and for those who are involved in designing changes and upgrades. It typically takes 3-5 years for a consistent Facilities Operations team to master all the nuances of their specific building. Any change in personnel (in-house or contracted) introduces substantial risk to the continuous operation potential.

Virtually *every* data center features 15 or more electrical/mechanical/fire systems. Each data center is unique in the number components and configurations these systems involve. Any time a new individual is introduced to the facility; there is a significant learning curve. Proactive data center Facility managers have implemented rigorous site-specific orientation and training programs; deployed when staff members are added or replaced.

Limiting risks with outsiders: Training a new contractor or consultant team member is also a necessity. When the facility is new, your staff should constantly escort them to ensure they follow

your established procedures and precautions. Requiring each of these service providers to supply consistent individuals is important. You should request the same individual for all work activities, with another consistent individual as a back-up. Both should participate in initial training.

Similarly, extensive time should be spent with consultants you engage, as you orient them to the operating objectives for your facility; both short term and long term. A design team can only meet your expectations if they thoroughly understand how you will measure success with a new or upgraded facility, over the life of the facility.

Why avoid changing individuals in critical roles: A new employee, contractor, or consultant will always spend significant time in orientation. After a consistent team of staff members and contracted service providers have operated the facility for three to five years together, a new team member's lack of familiarity with processes or systems will create a significant potential for error. Because a mistake can cause a multi-million dollar impact, most owners will not willingly take on that risk. Instead, they will retain individuals in each critical position for as long as they can, assuming they are pleased with their performance. The desired goal is to have individuals who are *thorough to a fault and rigorous in their approach to design and maintenance.* **Critical functions typically include:**

- Electricians who connect and disconnect power for computer hardware
  - This is *commonly the highest risk activity* in a data center operation
- UPS system service technicians
- Battery maintenance specialists
- Engine generator and switchgear service technicians
- Specialists who perform water treatment services on chilled water systems
  - Finding the proper balance of treatment for each facility requires extensive experience
- The design team
  - Electrical engineer of record
  - Mechanical engineer of record
  - Fire protection engineer of record
  - Architect
- Mechanical and electrical systems Facilities staff members who perform day-to-day maintenance
- The data center Facilities Manager

A small investment will produce substantial long term benefits: Companies achieving multiple years of continuous operation operate with consistent team members and consistent, rigorous training and processes for the design and maintenance of their critical facilities. Their Facilities Managers choose to *pay slightly higher than the going rate for staff members' salaries* and to *sole-source contracted support for critical functions*. These owners exercise good judgment in ensuring service costs are in-line with other service providers by comparing hourly rates. However, they do not mind paying a slight premium for the predictable reliability gained by retaining consistent individuals in critical roles. The investment in slightly higher salaries and contractor's fees is

insignificant when compared to the cost of one unnecessary service interruption.

These same managers will consistently bid design and maintenance work for less critical facilities such as office and manufacturing facilities. They have simply determined the potential to save a few thousand dollars by switching to another provider does not warrant the risk of a multi-million dollar downtime event. (Some may have to involve senior management to justify this rationale to the Procurement or Sourcing department.)

Motivation techniques to help retain individuals: A Facilities Manager may consider several methods to help team members remain motivated and challenged with their work for multiple years. Each staff member should share in *collective* team objectives, such as continuous operation, safety, and training.

Each should be assigned *individual* objectives, as well. Overseeing all maintenance and repairs for an infrastructure system is one example. Ownership of a specific process, such as maintaining up to date drawings and documentation, is another. Individual assignments instill pride of ownership and increase a team member's interest in acquiring technical expertise on the assigned system or process.

An assigned system owner should also be tasked with the role as "trainer"• for that system. With the help of a manufacturer's service technician or a design consultant, a training session can be created, which the system "owner" can deliver to your other staff members on an annual basis.

Every three to five years, these individual assignments may be swapped between team members who have demonstrated mastery of their original tasks. A cautious transition should be methodically planned. Not every team member will be comfortable swapping roles. Often, individuals who do not wish to move outside of their "comfort zone"• will be content with the same role for many years.

Some individuals will naturally demonstrate an aptitude and interest in leadership over time. In addition to rewarding this proclivity by asking them to train others, Facilities Managers may assign "Team Lead" or "Subject Matter Expert" designations to those who merit the promotion. You may have separate team leads for each shift or for each discipline (electrical, mechanical, etc.).

Deploying the methods described above will enhance your ability to retain most team members for extended tenures.

Analogy: The Air Force does not hire commercial airline maintenance providers to maintain its fighter jets. A data center Facilities Manager should only permit those with site-specific experience to maintain the building's critical systems. Because each data center is unique, retaining experienced team members is vital.

David Boston began his critical facilities career as Facilities Manager for GTE Data Services from 1985 - 1995. With the Uptime Institute, he assisted data center management teams for 14 years in two roles: consortium director and consultant. David serves as Director of Facility Operations Solutions for TiePoint-bkm Engineering, where he provides assessments, staff plans, and the development of comprehensive procedures and training programs for critical facility clients.