



## Matching Facilities Management Organizations to the Facility's Design

Clarity of purpose makes life simpler

By [Terry Rodgers](#)

August 7, 2012

When most people think about the design for a facility they tend to mean the engineering and design of the physical facility. But why stop there? The design phase should also include defining the facilities [management](#) (FM) organization, staffing, and training that will be required to properly operate and maintain (O&M) the facility over its long-term life.

So how do you design the O&M organization? As with the [infrastructure](#), you start with the requirements agreed to during the programming phase. An example of some high level decisions could be:

- 7x24 coverage without exception.
- Minimum of two people on-site at all times, including a journeyman-level mechanic and electrician.
- A controls technician on day and evening shifts with one-hour call-in during nights and weekends.
- Chief and assistant chief building engineers, who will be direct employees and supporting operating staff, who will be provided via in-house contractor.
- Minor maintenance and repairs will be performed by the in-house contractor.
- Medium and major maintenance and repairs will be performed by outside contractors via service level agreements (SLA).

Armed with this framework, an owner can now solicit proposals, negotiate agreements, and award facilities management/O&M contracts and SLAs. The goal should be to get these FM/O&M “stakeholders” involved in the construction project so they can weigh in on the design, support the supervision and oversight of construction and commissioning, and be fully deployed and functional on the go-live, day-one date.

Today, with the ever-increasing reliance and dependence of facilities on IT and vice versa, neither entity can succeed without the support, collaboration, and cooperation of the other. They have become “close coupled.” So a key to sustainable operations is to have management processes and staff that bridge between the IT and FM realms. The best approach is to use the enterprise concept and to include facilities as an equal and integral part of the enterprise. The management, staff, and processes should be integrated, co-located, and cross-trained to the extent appropriate so that everyone understands and appreciates how they and their counterparts fit into the overall business structure, and they should have common goals and objectives so that they do not work towards conflicting results.

Organizing and staffing any facility can be difficult, and, if not done properly, may result in headaches and problems for years to come. What's needed is highly skilled and qualified staff that has received site-specific performance-based training. What constitutes highly skilled and qualified staff? Employees who have the skills, knowledge, experience, and capacity to perform the duties of the challenging work assigned. Qualified means they have the credentials to prove it.

A training program has to be designed, developed, implemented, and audited (tested). So what is a performance-based training program? It is a training program designed to develop the student's skills and knowledge to perform specific tasks and duties in a responsible manner. It doesn't just present information and test for comprehension (typical academics). It starts with developing the acceptance criteria and achievement requirements (i.e., the “tests”), and then develops the instructional methods (classroom, shop/demonstration, on-the-job training) required to get the student to sufficient proficiency to pass the test.

Another difference between academic and performance-based training is that grades are not part of performance-based training. Course takers either pass or fail. You are either capable of performing satisfactorily or you aren't. Being able to do 80 percent of a task properly isn't good enough.

A training program is more than a set of classes. It should be tailored to match the duties and responsibilities that will be expected of the students (staff), which goes back to the decisions on how the FM/O&M department is organized. If the decision is made to have “jack-of-all-trades,” where all O&M personnel are expected to be able to perform the same duties and responsibilities, then only one training program is needed. If the plan is to have separate positions for mechanics, electricians, and control technicians, separate operating staff from maintenance staff, or specialized staff for “critical” work, then individual training programs must be developed for each.

There can be plenty of overlap with classes required by all and supplemented with specialized training for the specialists. Each training program should include prerequisites, sequenced instruction, instructor qualifications, and formal means to rate performance. The training must be repeatable for new hires, remedial, and continuous training, and it must be “maintained” (and therefore editable) to remain up-to-date so when infrastructure and O&M practices change so does the associated training.

Perhaps the most important (and surprisingly, frequently under-valued) training topic is safety. Most facilities require that safety training be provided. But just as critical facilities are more challenging with regard to O&M as compared to typical facilities, they also have far larger exposure and risk to safety for both personnel and equipment. Site-specific safety training classes should be developed that not only teach fundamental safety practices but also demonstrate the correct application of these practices for actual site conditions and system configurations.

John Kovalan, CSP and owner of [LP Management Services](#), provides safety training and supervisory services targeted towards critical facilities. He cites various industry safety guidelines including

OSHA's 1910.147 (lockout/tagout), NFPA 70E (Standard for Electrical Safety in the Work Place), and NFPA 70E Article 120 (Establishing an Electrical Safe Working Condition) as especially challenging for critical facilities.

"In data centers, redundant electrical supplies are frequently present in critical equipment. In these situations site-specific lockout procedures are required to be in place. Further, if two or more individuals are exposed to the potential energy source, even if the equipment being serviced has only a single energy source, the requirement to have site-specific lockout/tagout procedures remains. It is imperative that site-specific procedures include the verification that the energy sources are in a zero energy state. In the case of electrical energy, the verification has to comply with the requirements of NFPA 70 E Standard for Electrical Safety in the Work Place," he said.

When a site considers approving work on energized equipment, the risks and associated safety requirements become even more demanding of site-specific training and procedures.

In the final analysis, there really isn't much in critical facilities that doesn't change over time. This means the associated FM processes, policies, staff, and training need to evolve as well in order to keep the site performance "optimized."



Terry L. Rodgers, CPE, CPMP, is vice president, Sustainable Operations Services at Primary Integration Solutions, Inc., the Charlotte-based commissioning business of Primary Integration (PI). He has over 25 years of progressive experience in critical facilities operations and management, including strategic planning; critical infrastructure design, management, operations, and commissioning; business protection and recovery; preventive and predictive maintenance; technical training; and professional training development.