



Business Impact

Trained over
100 operators
and engineers

Achieved
over 99%
availability
during startup

CASE STUDY

Midwestern Power Corporation Operational Readiness Program

Situation

Scrubber Training Approach in a Challenging Environment:
New Laws Create a Need for Equipment and a Qualified Workforce

Over the last 15–20 years, power generation companies have been very conscious of how their plant emissions affect the environment and local communities. Since the Clean Air Act Amendments of 1990, and several other regulatory initiatives like the Clean Air Interstate Rule, Clean Air Mercury Rule, and Clear Skies Initiative, many generating facilities have already greatly reduced their emissions, thus reducing greenhouse gases that impact the environment.

••• **New technologies** are important in the generation of **cleaner power**.

These regulations mandate more stringent requirements for the reduction of nitrogen oxide (NO_x), sulfur dioxide (SO₂), mercury, and other byproducts of electric generation. They are also driving corporate executives, management, and engineering staff of our nation's coal-fired power plants to look into new and more technologically advanced means of reducing these emissions. These technologies include systems and equipment such as wet scrubbers, dry scrubbers, low NO_x burners, selective catalytic reduction (SCR), selective non-catalytic reduction (SNCR), rich reagent injection, electrostatic precipitators, digital combustion control management systems, and others.

New technologies are important in the generation of cleaner power. These new technologies can be costly and time consuming to ensure proper design, construction, startup, operation, and maintenance. As such, one of the key issues that power generating facilities now face is ensuring workforce operational readiness of these capital expansion projects. With an ever-increasing focus on the environmental impact of coal-fired power generation coupled with a focus on unit efficiency and availability; a power plant's operations and maintenance staff must be fully prepared to ensure that proper operating and maintenance practices are followed. Improper practices can lead to premature equipment failure, operational inefficiencies, reduced unit availability, emission exceedances, and unsafe working conditions.

The Challenge

This Fortune 500 power company's plants generate over 10,000 megawatts of electricity for more than 2.4 million homes in the Midwest. Not only does this company deliver electricity, it also supplies gas to over 800,000 customers in Illinois.

Ensuring the competence of the workforce is of extreme importance to the client. The company is committed to providing its customers with clean, reliable energy, while preserving, protecting, and improving the environment. Because of its commitment to the environment and its obligation to meet these regulations, this company will spend between \$3.5 billion and \$4.5 billion across its fleet of coal-fired power plants. This includes the installation of new controls and equipment such as wet and dry scrubbers, SCR units, SNCR units, low NOx burners, and many other technologies, including state-of-the-art trials to remove mercury by injecting activated carbon into the flue gas.

Being on time and on budget is also important when it comes to projects of this magnitude. Delays in the readiness of the workforce can result in costly impacts to schedule or operational challenges following commissioning.

With many options and effective methods to provide training for new equipment installations, it is necessary to determine how to implement a training program that allows for safe and reliable operation without breaking the bank.

To meet this challenge, the power company combines its resources along with the resources of contractors and vendors involved in the new equipment installation. These combined resources are coordinated by a training consultant company that brings the expertise and experience to successfully implement their approach.

GP Strategies Solution

GP Strategies® was selected to develop a plan to achieve operational readiness efforts with its scrubber. Working closely with the power company's training department, GP Strategies coordinated the vendor training, developed and delivered equipment training, and generated qualification and procedural documents. This relationship allows the client to capture the embedded-cost expertise of their equipment vendors through walk-down familiarization training, while also receiving classroom training and documentation development from a company that specializes in industry-best-practices training solutions. The client's involvement in this process ensures that employee buy-in is achieved and that all training and document development is consistent with their distinct needs and goals.

The client's philosophy of a blended learning approach to training and workforce qualification was key to the success of this program. This approach combines a number of learning methods, including the use of generic web-based training (WBT) content, site-specific system and equipment training, instructor-led classroom training, and on-the-job training. All training methods were coordinated through the design and development of integrated learning curriculums (ILs) for each trainee. The ILs served as a roadmap to guide each trainee through the training and qualification process by outlining the steps required to successfully complete their training on the newly installed equipment and systems. Training Supervisors readily monitored each trainee's progress through GP Strategies' learning management system (LMS), GPiLEARN™. GPiLEARN continually tracks and reports on each trainee's progress, thereby allowing the management team to gauge the training program's progress and effectiveness.

The client follows a Systematic Approach to Training (SAT) process, which ensures that training is provided for each task required in an individual's job. This time-proven approach also ensures management that each trainee is armed with the knowledge and skills required to perform his or her job safely, efficiently, and reliably prior to startup. This resulted in consistent operating practices, increased availability, reduced maintenance costs, reduced emissions, and increased overall worker safety. In addition, it also provides the basis for a solid training and qualification program that will serve future employees long after the initial installation and commissioning activities are complete.

Business Impact

In total, GP Strategies trained over 100 operators and engineers throughout three plants and five units. The results were incredibly positive, achieving over 99 percent availability during startup of the scrubber. The implementation of an SAT using a blended learning process ensured the workforce was ready and able to meet the challenges associated with operating a more sophisticated and technologically advanced power plant.

GP Strategies' ability to not only distinguish what type of training the client needed to achieve operational readiness of its scrubber, but also to work with the client on its training methodology demonstrates the flexibility and excellence of GP Strategies' training methods and procedure development.

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About GP Strategies

GP Strategies is a leading workforce transformation partner—one of the few truly dedicated global providers in the marketplace providing custom solutions. We believe our transformation focus, when paired with deep listening, a customer-centric approach, and innovative expertise, enables our clients to routinely achieve superior business and operational results from our evidence-driven and technology agnostic recommendations.

Whether your business success requires a change in employee performance and mindsets, learning technologies, or critical processes, GP Strategies is the transformation partner you can trust.

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