

Sample Successful WEFTEC “Management-Type” Abstract

Title of Abstract

Author List

Summary of Project

In 2002 a Southern Utility started up a new 40 MGD, \$150 million advanced wastewater treatment plant. New performance expectations were to surpass those of the old facility. The new facility was to produce not only higher quality water, but water suitable for reuse or discharge to a sensitive stream. There were two additional expectations. First, the utility committed to bring public education onto the plant site and have public school students within the facility. Second, the utility made a commitment to the surrounding community to control odor and noise. The goal of the Utility was to meet the higher expectations of both the regulators and the community. It was quickly recognized that the O&M and management experiences of the older plant would not suffice for the new treatment systems or lead to meeting the new expectations. The utility also had to apply Best Business Practices. It decided that using a leading private contract operator to assist with the assessment and development of a Best Business Practices Plan for operating the new plant was the direction to take.

This created a public-private partnership that offered the opportunity to combine public practices and experience with those of the private contractor. A contract was developed where major items for refining Best Business Practices in the new plant were identified. This paper will describe the assessment process and major changes that were implemented. You will find that the recommendations provide an example of an organized improvement program.

Status of the Investigation

The investigation began in April 2002 and implementation was scheduled for conclusion within one year. The major elements were designed in mid-2002 and implementation began in the fall.

What was Done and What was Found

The major areas identified for review and refinement were management, staff organization, O&M, training opportunities and new technology applications.

Each area had an initial review so that a work plan could be established. Public and private sector experiences were combined to develop the overall recommendations. The decision process was based on the on-site experiences of the combined public sector and private sector operations. The major findings are summarized here.

Management: The assessment and implementation process began just after the startup of the new facility while the staff was busy troubleshooting operations and resolving issues involved with new equipment and processes. The private contractor provided an on site plant manager to work with the current manager in the assessment and change process. The private contractor did not assume any management responsibilities. He mentored the plant staff in implementing the changes. Refining a system for performance measurement was a tool that also needed work. Key Performance Indicators were

developed and employed. The indicators were tied into an existing benchmarking system. The paper will detail the development of the Key Performance Indicators.

Organization: The staff organization used in the old facility would not fit all the new requirements and expectations of the new facility. Meeting the new expectations while maintaining costs in line with top performing organizations of this magnitude, was the goal. It was determined that a new organization to support Best Business Practices was needed. Work groups were defined and an organization chart outlining the reporting structure was developed. A long term staffing plan to support the new organizational chart was also developed. This paper will describe the organization that was developed and how it was implemented and adjusted to support the goals of the facility.

O&M: Every process in the new facility was evaluated by a private contractor specialist and a utility operator. The evaluation resulted in the

1. Establishment of performance measurement for each process in the facility
2. Clarification of the controls for each process
3. Establishment of a Performance Measurement Plan

The table below illustrates the process measurements for primary clarifiers.

Key Process Indicators (KPIs)	Goal	Actual from Clarifier 1	Full Scale Clarifier 2	Testing Clarifier 3	Clarifier 4
TSS (% removal)	70	35	40	55	70
BOD (% removal)	30	20	20	25	35
PSD to Storage Tank (% solids)	9	9	9	9	9
Solids removed by primay (tons solids)	15.8	10	10.8	13.3	15.8
Short Interval Controls					

(SICs)					
PSD to Storage Tank (gpd)	70,000	35,000	40,000	55,000	70,000
Skimming Water to Storage Tank (gpd)	0	N/A	N/A	N/A	N/A

Once the assessments were completed, it was determined that over \$1,000,000 could be saved each year and established measurements could lead to significant additional savings. In addition, the measurements provided direction to the shift operators on the specific parameters to monitor with appropriate upper and lower limits. Now management could set work priorities for both operations and maintenance.

A new computerized maintenance management program was installed and used to determine if the new maintenance system was effective in protecting the new assets. A review was done and suggestions were made. They will be discussed in the paper.

Training Opportunities: The utility was committed to development of its staff to fully operate and maintain the facilities at the highest possible level. A private sector training specialist developed an evaluation form to assess training needs. Experienced operators from outside the utility then used the form to evaluate the training needs of the staff. This led to a series of recommendations. The evaluation process, the resulting recommendations and the subsequent training program are discussed in the paper.

New Technology Applications: It was determined that there needs to be ongoing assessment of new technology that could improve operations and maintenance. Capital investments were identified for consideration for this new facility.

Conclusions: This presentation describes an example of an organized method to continue installation of Best Business practices. This program brought into focus Best Business Practices that are difficult to achieve in a new operating plant with ongoing and unknown challenges. The paper will discuss the implementation plan, individual recommendations and the overall assessment of the benefits of a public-private development system to obtain Best Business Practices.