Performance Based Training

Ray McCall and Fred Hill

Performance based training (PBT) is a hands-on multi-system training program. It's intended to help operators learn techniques to improve water plant performance through the use of special studies and other performance enhancing tools such as turbidity assessment, jar testing and plant assessment software. "Drawing the Graph" becomes an important part of understanding the analytical process.

PBT goals and objectives for treatment plant management include;

- Developing water professionals' knowledge, skills and abilities
  - Training staff to accept the expanded definition of process control (i.e., be willing to implement any activity to develop your plant's capabilities and take it to the desired level of performance)
- Achieving sustainable optimized performance for turbidity removal through coagulation/sedimentation and filtration
- Achieve sustained optimized overall performance; i.e., reduce the formation of disinfection byproducts, improve corrosion control, and provide aesthetically pleasing drinking water.

One particular challenge to PBT is developing the operator's ability to bridge the "knowing-doing" gap, and actually put his technical knowledge into practice. Another challenge is our inherent resistance to "new" process controls and responsibilities.

Performance based training is not a seminar-type program. It usually consists of several (five, six or seven) separate one-day sessions, usually eight to ten weeks apart, that provide an opportunity for a few operators from several (usually 5-6) geographically connected water treatment facilities to learn to work together and improve their knowledge and abilities. Many of the evaluation techniques and skills are included in comprehensive performance evaluations (CPE), so it is helpful for at least one of the participating plants to have participated in a microbial/turbidity CPE. PBT requires a significant commitment for the operators and management, but the end results have proven beneficial for most. One goal of PBT is for participating operators to share their enthusiasm with others in their own plant as well as nearby water plants. Involving multiple water systems in PBT sessions hopefully achieves similar improvements and results at multiple utilities.

As an operator, what can you expect from PBT training?

- To change your thinking
- To learn new ways to look at your plant's process control techniques
- To learn different treatment techniques from other operators
- To set higher goals for removal of turbidity and disinfection byproducts
- To bring your water plant to a higher level of operation & performance

But you must be an active participant! Each PBT session includes "hands-on" workshops, including homework. Participants get the opportunity to investigate their

individual treatment plants, identify particular factors that may be limiting performance, and develop “special studies” to further evaluate their project. These studies often begin with a premise of a particular problem, then include establishing evaluation goals, methods and timetables, and eventually conclude with written findings and a presentation to the PBT group. Several of these findings have been shared with the respective utility managers and have been implemented at the treatment plant. Implementation has improved performance and in some cases has saved money by reducing chemical consumption or power demands.

Public Water Supply Section staff facilitates PBT, providing guidance and support through regular contact. Contact occurs during the quarterly sessions and during visits to participating water treatment facilities. Facilitators help operators navigate the “tough issues” that they may be struggling with in homework assignments or in implementation of process improvements. Facilitators provide ample support and encouragement to water system operators and management.

In summary, PBT is designed to assist water treatment plants in improving overall performance, achieving optimization goals, and protecting the public health.