A LOOK TOWARDS EXTENDING THE LIFE OF YOUR TREATMENT PLANT

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In September of 2017, I became the new NY Rural Water Wastewater Technician/Trainer for the western side of New York State. As some of you may have read earlier this year, I recently left a municipal Public Works Superintendent position to join NYRWA. For 15 years I served as the Public Works Superintendent and the Water and Wastewater Operator for the Village of South Dayton. When I took the superintendent position, there were many challenges and issues that were brought to my attention. The main issue facing myself as a new operator besides learning how to run a water and wastewater plant, was overcoming a lack of maintenance. Buildings and equipment were in a state of disrepair, cleanliness was lacking, and there had never been an overall plan for regular and preventive maintenance. Now, after fifteen years, I like to think that the water and wastewater plants are in a better place than when I started. Fewer breakdowns and unscheduled service calls due to developing a plan for preventive maintenance. A cleaner and safer facility to work in. A facility I was proud to call my own.

Preventive maintenance is maintenance that is regularly performed on a piece of equipment to lessen the likelihood of its failing. It is performed while the equipment is still in good working order, in the hopes that it does not break down unexpectedly. Although no one knows your operation as well as you do, an operator should always be open to having a fresh set of eyes look at their operation. To have a successful preventive maintenance program, a system needs to start with a plan. The first step is to involve the correct people in developing the plan. Operators, managers, maintenance staff, engineers, and other people familiar with the plant and its equipment should all be consulted as the plan gets started. Their input, including their experience with similar equipment, will be beneficial in laying the ground work. After getting the correct people in place, start by deciding what goals you are looking to achieve with your maintenance plan. The goals should be agreed upon by those who will be carrying out the plan after its rollout. Once you've established your goals, the next step will be inventory. The following is a breakdown of information that you should require for the equipment included in the plan.

1. Make and model of the equipment
2. Serial number
3. Basic specs and capabilities
4. Internal asset numbers, brass tag number, or unit number
5. Category (Pump, Blower, Chemical Feed, Instruments, Monitoring)
6. Location of equipment
7. Any high cost items associated with the equipment
8. Copy of owner's manual, parts manual or diagrams

This information will allow you to track the equipment and determine whether it needs to be replaced or can be maintained. Once you have this information you begin to assess the current condition. Using the manual, you should be able to determine if it is operating to the manufacturers specifications and being used as it was designed or intended.

After the initial assessment is complete, your next step will be to rate the equipment as to its level of importance in the system. Does the machine have redundancy? If so, it would be lower on the critical repair/replacement list. Other factors that come into play are if it is easily replaced, readily available as a unit or if parts are easy to obtain. Also important is if the system has documented records on maintenance, breakdowns, and original installation. Once the list is compiled, use the information on ordering and availability to rate the importance of maintenance to the longevity of the equipment.

Next, have the operators get familiar with the owners' manuals, download the maintenance recommendations from the manufacturers website along with any suggestions they may have for extending the life of the equipment. Once you have a handle on the needs of the equipment, the next step is the most important.

Train your employees! It will be necessary to instruct your employees on what is expected of them as you continue this process. Teach them what to look for as they inspect a piece of equipment. From different sounds, a small puddle of oil, clunking drive, all mean something and a well-informed operator will catch these and save the system money. As you train the employees, instruct them on using a daily log and inspection forms. Have them document any changes noted during their daily inspection and what adjustments they made. This information will also be critical when you schedule long term preventive maintenance or equipment replacement. When the group is satisfied with the results, add the preventive maintenance plan to the plant SOP's.

Preventive maintenance programs, once implemented, have been shown to save up to 500% of the cost it takes to do the actual maintenance. This savings is achieved through savings on overtime labor during breakdowns, catastrophic equipment failure resulting in outside contractors performing work in emergency status. Along with savings in labor, the cost benefits from extended runtimes is an added benefit to making preventive maintenance a part of your SOP and regular routine.