



## Ask the Experts

Each issue, we ask members of the *On Tap* Editorial Advisory Board to answer a drinking water-related question. We then print as many responses as space permits.

*Many small water system operators report that they have trouble convincing the powers that be that certain items are essential in their inventory. With this in mind, what mechanical and spare parts do you recommend that small systems have on hand at all times?*

### Repair Clamps Are Essential

When it comes to maintaining an inventory of spare parts, nothing is more important than keeping an adequate supply of repair clamps to accommodate various pipe diameters when a quick and efficient leak repair is required. It has been our experience that certain size clamps are harder to come by than others.

We also like to maintain an adequate supply of pipe in various diameters for repair purposes. Some of our older mains require odd sizes and full-circle mechanical clamps that are not always available through the suppliers and require special ordering.

At the treatment plant, we always have enough spare parts on hand to keep the most important items up and running at all times. These parts generally include small electric motors, belts, chain sections, etc. An excellent mechanic or operator can get a good feel of what he or she needs by keeping records of how long specific parts last.

The most difficult issue to deal with is convincing the powers that be when mechanical items are obsolete and should be replaced rather than repaired. Again, good records and sound data are difficult to challenge.



**Frank J. DeOrio**

Director of Municipal Utilities  
City of Auburn, New York

### Documentation Pays Off

System failures need to be corrected quickly. Most failures will require repair parts and supplies to put the system back in order. These parts and supplies may not always be available locally, so, by maintaining a good inventory and inventory records, you can order parts and supplies in advance and always have what you might need on hand.

To insure against major system component failures, inventory and evaluate your plant

equipment and develop a parts list that identifies all parts and puts them into one of two categories: (1) critical and (2) preventative. The operations and maintenance manuals equipment manufacturers supply will help you identify which parts are critical and which are recommended for regular preventative maintenance. There should be no legitimate argument for not having critical parts on hand at all times. While you might be able to get by for a time without adjusting, say, your finished water pH, you have a very short window of time to repair a failure in your disinfection equipment. These are the types of things each system needs to determine and customize to its own equipment in order to make sure it has the proper parts inventory. Your customers depend upon your ability to meet safe drinking water standards, and a failure of one single part of your treatment train can jeopardize your ability to accomplish this goal.

All water systems need to have a program in place that will help them manage their assets and document the history of the plant equipment, facilities, and inventories, to properly budget for necessary items. Inventory control is a vital part of this program, ensuring that your system runs continuously and provides the best quality water to your customers.

Keep work order files to monitor use and the costs associated with use and repairs. The files should include the costs of repairs, the person-hours used to perform the repairs, and the preventative maintenance completed. This will provide you with an ongoing record of all of the costs associated with the operation of each particular piece of equipment, which will prove to be invaluable when you need to go before your board or town officials to request the necessary funds for your system's proper operation.



**Nelson Yarlott**

Resident Operator  
Greeley, Colorado

## Make a List

As I was thinking about this spare parts issue, on the surface one might think it is really not an issue. We live in an “instant” society. If you need something, you usually can get it—right now. Vendors and suppliers are only a phone call, fax, or mouse click away. Actually, that is only true for the bigger utilities that have access to those types of services. For small systems, how available spare parts are will directly impact what you need to keep on hand.

The other issue that comes to mind is that with a deteriorating infrastructure many utilities are experiencing, and as storage capacity decreases, due to increased demands on the system, your “margin of error” shrinks. You have less and less overall capacity, which reduces your allowable downtime. Therefore, the need for spare parts becomes even more critical.

Most operators will know what spare parts they need on existing systems, as these are the parts they have most often had to beg, borrow, or steal in the past, to keep the system operating. I encourage these utilities to work closely with their management so that the budget allows for a spare parts inventory. This is cheap insurance when compared to the consequences of a water distribution system losing pressure and a community being without water.

I suggest that new systems include a spare parts list as part of the bid package. Review this list with other water treatment plant operators that use the same brand or type of treatment. Add or remove items based on their recommendations. This then becomes your shopping list.

However you arrive at it, a spare parts inventory is a must for small utilities. It is also important to keep it current. When you use something, order a replacement. (Be careful about what brand of spare parts you use. Some manufacturers require specific brands so as to not void a warranty. If warranties are an issue, check before purchasing or installing replacement parts.) Include an inventory of your spare parts in your routine preventive maintenance schedule to insure that you have what you need, when you need it.



**Rodney L. Coker**

Tribal Utility Consultant (retired)  
Indian Health Service

## It's the Little Things that Count

As a satellite management agency providing water service to more than 80 small water systems, as well as doing jobs for other water systems not owned or managed by our company, we have to keep our trucks and shop fairly well stocked. We also provide 24-hours-a-day, seven-days-a-week emergency repair service to private homeowners (either after the meter to repair leaks or at the pumphouse for private wells) based on time and materials. These other individuals are members of the electric company so we try to meet as many needs as we can with our limited staffing resources. However, our first priority is the water systems we manage and own.

We have become more aggressive about expanding the inventory in our shop and on our trucks. One of our water technicians spent time recently building storage bins and getting the shop better organized. We were making too many extra trips to hardware stores for really small and inexpensive items. We found suppliers that are willing to come in and inventory our nuts and bolts and electrical supplies and keep them stocked. It saves us having to remember to inventory and order these small parts. Our onsite inventory covers a wide-range of situations from small pressure tanks up to emergency generators. All items for meter installation as well as fittings for distribution main repair are in our shop and on our trucks.

We try to keep all mechanical parts for the size of the various systems we serve on a truck or in the shop. We also have very good suppliers in our area that have come to our aid during emergency situations. Because none of the systems we acquired or serve are standardized, we cannot always keep every single pump and motor in stock. Therefore, keeping phone numbers handy in case you need to call from a job site is important.

The hardest task and most time-consuming process is insuring that all parts are processed through the inventory system so that we know what needs to be re-ordered, and we can track the cost of each item since we use them for jobs where we bill time and materials. If you do not have the proper tools and parts inventory, you cannot operate cost effectively, and you will have customers out of water longer than necessary.



**Lisa Raysby**

Water Department Manager  
Peninsula [Washington] Light Company