

Proper Sanitation for RO Units

under Emergency Situations

By William E. Hall Sr.

Summary: Boil water alerts are becoming more common as public water supplies become less willing to weigh possible health risks to their customers when quality is threatened by potential microbial contamination. This puts the dealer, particularly those with a large number of reverse osmosis system rentals in the field, in a tough position when it comes to evaluating the sanitation procedures that may be required by such an alert.

Suppose you are a water treatment dealer and your area suffers a potable water emergency. The correct response from the local water utility is to notify all consumers to boil all water used for drinking or culinary purposes.

Such a notice is commonly called a "boil water advisory" (BWA). We're seeing more and more such orders issued as a result of natural disasters such as floods, hurricanes, tornadoes or earthquakes that seriously affect the performance of the local water purveyor. This isn't to mention suspected or real contamination events such as the E. coli outbreaks in the public water supplies of Alpine, Wyo., and Casa Grande, Ariz., as well as the Cryptosporidium and Giardia outbreaks in Austin, Texas, and Sydney, Australia, last year. You, as the local water treatment equipment dealer, will have to respond to your customers and the community in this situation. What will you do and what will you say in this crisis?

I put this question to a large number

of people and companies in our industry and I was amazed at the variety of responses I received. I was especially appalled at the response "Gee, I don't know. It has never happened to us here." As we all know, there are many dealers out there with a large number of reverse osmosis (RO) rental units in the field. Who is responsible for what happens to these units? As a dealer or as a supplier of such equipment, you need a written policy so all staff members will know how to react if and when this question comes up.

How serious is the alert?

To further compound the issue, we find that there are many different types of "boil water notices." In many cases if there is the slightest possibility of microbiological contamination, such as a drop in chlorine residual or in water pressure below 20 pounds per square inch (psi), authorities will usually issue a BWA just to be safe. The following list of typical criteria used by utilities and municipalities for issuing a BWA shows a variety of circumstances that can commonly trigger boil water advisories:

1. Disruption of water treatment or water supply facilities, such as flooded wells or treatment plants, broken water mains, or power outages.
2. Positive coliform detection that is determined to persist (with repetitive positive sample analysis results) in a public water system.
3. Positive detection of disease-

causing waterborne microorganisms.

4. Sudden increase in reported illnesses suspected to be caused by contaminated drinking water.

5. High turbidity or a sudden increase in turbidity signifying potential contamination from disease-causing microorganisms.

6. Drop in chlorine residual.

7. Water pressure falling below 20 pounds per square inch (psi) in any portion of the public supply's water distribution system.

I am sure that, as a water treatment professional, you know that RO units don't provide total protection against all types of disease-causing microorganisms. Most RO manufacturers label their product with the warning that the unit must be installed on a potable water system. This is done to protect the user from possible contamination of their drinking water. We also are aware that membranes typically reject bacteria, viruses and cysts. In sterile water applications, RO membranes are used as a final "bacterial trap" for additional protection in the sterilization process. However, there are still ways for bacteria to pass through the seals or o-rings of an RO unit and we cannot be assured of complete bacteria removal by the RO unit.

Taking precautions

With all this in mind, what should you do to the RO unit after the authori-