By Henry Nowicki, Ph.D. and Barbara Sherman, PACS, Inc.

NSF Conference Addresses Public Water System Compliance Using POU/POE

This article is intended to provide opinions and a broad conference overview. The opinions of the authors do not necessarily reflect those of the magazine.

In February, NSF International arranged formany experts to cover the issues and facets of point-of-use and point-of-entry (POU/POE), how they can be used for PWS compliance and other opportunities for the manufacturers and users. Federal and state regulators provided pros and cons. Regulators have a major role if they can demonstrate their willingness to drive POU/POE forward. The importance of product certifications to facilitate customer acceptance and credibility was well covered. Small and large utility speakers presented their experiences. Case studies sponsored by the U.S. Environmental Protection Agency (EPA) and the American Water Works Association Research Foundation (AWWARF) were presented. Vendor and consultant presentations and attendees provided excellent professional awareness. Carrying this awareness to the public remains the next challenge.

Pros and Cons

Historical and current POU/POE developments were summarized. It was pointed out that similar case studies on the applicability of in-home water treatment technologies for meeting federal water standards were conducted in the early 1990s and these earlier benefits of POU/POE did not significantly advance the marketplace. Several speakers named the new maximum contaminant level (MCL) for arsenic in drinking water as the driver to increase the public use of POU/POE technologies. The EPA has mandated utility compliance with the new arsenic 10 ppb MCL by January 2006, if the agency doesn't grant extensions to the rule. Historically, right or wrong, utilities have been granted extensions for compliance. Some POU/POE industry leaders believe their equipment can help utilities, large and small, meet this stricter requirement as well as others such as the new radium rule. Granted, there are hurdles including the assurance that these units can be properly maintained in the home.

Thinking Outside the Box

Several state regulators, speakers and attendees at the conference expressed a change of mind from earlier positions.

Attitudes toward the use of POU/POE technologies have shifted, stemming from the economic reality of small water suppliers, improvements in POU/POE devices and customer acceptance.

NSF Tests POU Arsenic

The feasibility of small communities using point-of-use (POU) treatment units instead of central treatment to remove arsenic from drinking water is being tested in a rural suburb of Sacramento, Calif., under a project being conducted by NSF International in coordination with state drinking water authorities, the California Rural Water Association, the Water Quality Association and consultants.

Funded by grants from U.S. Environmental Protection Agency (EPA) and the California-based National Water Research Institute, the year-long project is taking place in Grimes, a town of roughly 125 connections with arsenic levels averaging about 25 µg/L (ppb). Project coordinator Gordon Bellen explained that in addition to testing the performance of a particular POU technology (aluminum oxide), the study is designed to demonstrate each step a community would need to take to implement the POU option and how much it would cost. Implemented with the support of "a very cooperative town council," the project began last fall with a pilot study and continued this year with the installation (at no cost to users) in commercial and residential connections of NSF-certified under-the-sink units provided and serviced by Ohio-

Bellen said the project POU compliance option of homes and various

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Previously. many people were not in favor of POU/POE treatment technologies. Today, though, the momentum appears to be moving toward an increased use of POU/POE technologies. Major reasons for this change of heart are due to the economic reality of small water suppliers, improvements in POU/POE devices and customer acceptance. Many spoke of utilities service changes and paying more attention to the customer as part of the trend.

The Los Angeles Department of Water and Power (LADWP) with about 670,000 water hook-ups, is surveying and advising its customers about use of POU/POE equipment. A prior LADWP survey revealed that about 70 percent of the utility's customers use some drinking water enhancement inside their home (roughly 35 percent POU and 35 percent bottled water). LADWP plans future customer surveys and educational programs. Education is a slow process, but as more utilities of all sizes think outside of the box, they will have tangible benefits. Utility customers are getting smarter about drinking water quality and health effects. Utilities may need to think about risk assessment from lawsuits and liability reduction through new services and improved water quality.

Activated Carbon Role

Many of the speakers pointed out that "customer acceptance" of the POU/POE contaminants removal technologies

A list of speakers and their presentation titles can be found at www.pacslabs.com.

Treatment Option

based Kinetico. These units utilize arsenic-removal cartridges and one uses granular activated carbon to control taste, Bellen said.

Each unit includes a separate tap to be used for drinking, cooking and making ice while leaving the regular tap limited to nonconsumption uses such as dishwashing. Bellen said each unit was verified upon installation as achieving nondetectable arsenic levels and features automatic shutoff at 500 gallons of use. All cartridges will be replaced at six months of use. Bellen noted that a handful of homes either refused to participate or already had different POU units installed, raising a question about what constitutes full coverage under EPA's criteria for the POU option.

Results are expected to be reported by year's end, he said, and the community will have the option of having the treatment units removed or continuing to manage them on its own.

For more of this news article, visit www.waterinfocenter.com and search the news archive. For additional information on this project, contact NSF International at www.nsf.org; 800-NSF-MARK. WQP

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was most important. Improving customers' drinking water taste and odor was the most powerful way to get customers to use POU/POE technologies. Activated carbon adsorption has long been recognized as the best available technology to improve tap water aesthetics cost effectively. Thus, it is logical that POU/POE vendors are using carbon in their devices.

The NSF conference had two approved vendors that demonstrated the use of reverse osmosis (RO) and distillation technologies. Both vendors had carbon in their units. Carbon benefits for removal of volatile organic compounds and protection against membrane fouling as well as a final water polishing step was cited by these vendors. Both were enthusiastic about their technologies and indicated significant price reductions were possible … if the number of units sold increased.

A market research report by Baytel Associates also has come to a similar conclusion. (See Market Study Report sidebar.)

Market Study Report

A market research report by Baytel Associates in San Francisco said customers are concerned about contaminants but buy home water filters to improve tap water aesthetics.

A Quantitative Analysis of the US Market for Home Water Filters and Their Replacement Cartridges reported that on a home water treatment filter, the consumer's ultimate decision as to which product to purchase is driven by perceived ease of use, effectiveness, familiarity, cost and design, according to the report's findings. The home drinking water filter market traditionally is divided into six segments: pour-through pitchers, end-of-faucet units, countertop units, undersink systems, whole-house systems and inline retrofits for refrigerator water or ice dispensers. Pour-through filter pitchers became popular in the United States during the early to mid-'90s. While growth in the pour-through pitcher configuration has leveled off recently, unit sales of replacement cartridges for these inexpensive units continue to grow.

Countertop units have never been particularly well received by U.S. consumers because most consumers would prefer to decrease clutter on their kitchen counters, not increase it.

Designed-in refrigerator and faucet systems are found in many household refrigerators sold in the United States for the dispensing of water and ice cubes.

External in-line retrofit filters have been available for quite some time, but they have major disadvantages when it comes to replacement cartridges. That's because retrofit refrigerator water filters usually are out of sight, and generally out of mind. They do not warn the consumer when it is time to replace the filter cartridge, and replacing them often is a clumsy or difficult task. Baytel's research predicts that soon the dollar value of the U.S. market for replacement filter cartridges will overtake the market for original home water filter systems. For the industry as a whole, the replacement filter cartridge market in the United States is expected to exceed $500 million by 2004.

Future Opportunities

The POU/POE industry needs to be patient and not expect unbelievable growth. Growth will come, but the industry will need to work smarter to develop these future opportunities at utilities and in homes.

Large retailers selling home units presently are weak on service and education. Many of these retailers provide in-store "how to fix" free workshops. POU/POE manufacturers need to work with these retailers to assure the correct messages are getting to the customers. Many customers think filters last forever or revert back to not filtering their drinking water. POU/POE suppliers also need to "think outside the box" to grow their business. One filter medium or water treatment technology does not solve all water quality problems. WQP

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