Ozone Approved by FDA for Use on Food

September 26, 2001

The use of ozone as an anti-microbial agent for food treatment, storage, and processing has been approved as safe by the U.S. Food and Drug Administration (FDA). The FDA released a final ruling this past June, in response to an Electric Power Research Institute (EPRI) petition, amending previous regulations and granting regulatory acceptance of ozone as a food additive.

"This is a significant achievement," says Winston Chow, EPRI department manager for energy utilization and manager of the Industrial and Agriculture Program, which has coordinated efforts for several years to review the use of ozone as a food safety additive and to obtain formal federal regulatory approval. **"The FDA's review of data prompted by our petition concluded that ozone represents a safe and effective agent to prevent the microbial contamination of food. The federal ruling will clear the way for the widespread use of ozone in the food processing industry."**

For electric utilities, the FDA ruling provides a formal stamp of approval for the broader application of ozonation-an already proven, advanced electrotechnology. Ozone has been used for many years in other countries in food processing and in the United States for water treatment. **Ozone processes are safe, energy efficient, and avoid the by-products of chlorine.** The gas is generally created on-site by a generator via an electrical charge or from oxygen using the same process. The gas is pumped into water, and the ozonated water is used as a rinse, mist, spray, or bath. Ozone survives for only a matter of minutes before decomposing into ordinary oxygen.

Despite its use in other countries and its widely affirmed safe properties, FDA regulations have never listed it as an approved food additive until now. As a result, for the last several years EPRI has supported FDA review of the regulations. In its ruling, the FDA said it had evaluated data in EPRI's petition and other relevant material. "Based on this information, the agency concludes that the proposed use of the additive is safe, that the additive will achieve its intended effect, and therefore the regulation in part 173 should be amended," the agency ruling stated.

With the ruling, ozone becomes another tool for ensuring food safety. "The food safety system in the United States has worked well," says Chow. "However, microbial contamination is still a serious food safety concern. Ozone is a 'user-friendly' resource that can contribute to the long-term safety of the U.S. food supply."

Ozone offers a number of advantages over other available anti-microbial agents. When ozone is used to destroy harmful microorganisms on food, it leaves only oxygen as a byproduct. It leaves no taste, odor, or flavor, and-unlike chlorine-no residue. "The food production system, the electricity industry, and the consumer are all winners as a result of this effort," said Richard A. Peterson, Manager, Agricultural Marketing for New York State Electric and Gas Company.

EPRI's involvement in the ozone issue stems from the work of Drs. Charles Sopher and Dee Graham of EPRI's Agriculture & Food Technology Alliance Office. The office provides innovative solutions to the energy industry, which in turn can use EPRI resources to help food treatment, storage, and processing organizations adopt the latest technological alternatives.

Organizations that assisted EPRI with the petition include the National Food Processors Association, the American Meat Institute, the National Chicken Council, the Alaska Seafood Marketing Institute, and

industrial companies including Praxair, BOC Gases, Novazone, Dell Industries, RGF Environmental Group, and Air Liquide. Numerous food processors and other individual scientists also contributed valuable data in support of the petition under the direction of petition writer Dr. Rip Rice, the world's leading authority in ozone science and technology.

Strickland Produce, Inc. of Nashville, Tenn. partnered with EPRI, TVA, and Nashville Electric in the use of ozone technology for fruit and vegetable processing. Company president, Walter Strickland explains that ozonated water helps destroy the bacteria that can cause premature spoilage of fruits and vegetables. Ozonation leaves no residual chemical byproducts and enables Strickland Produce to achieve higher quality reclaimed water in the process.