

## **A Brief History of Ozone Use in the Food Industry:**

**1957** - Ozone in the gaseous form was approved for the storage of meat by the USDA.

**March 12, 1975** - FDA recognized ozone treatment to be a Good Manufacturing Practice (GMP) for the bottled water industry. The minimum ozone treatment for GMP is "0.1 part per million (0.1 mg/l) of ozone in water solution in an enclosed system for at least 5 minutes." (Code 21 of Federal Regulations, Section 129.80 d.4 Federal Register 11566, 12 March 1975.)

**1976** - Environmental Protection Agency (EPA) approves the use of Ozone in the United States as an antimicrobial oxidizer.

**June 14, 1997** - A panel of experts from food science, ozone technology and other related fields declared Generally Recognized as Safe (GRAS) status for ozone use in food processing. The Energy Power Research Institute (EPRI) requested this and was very instrumental in achieving GRAS approval for the use of ozone in food applications.

The following is an excerpt from the EPRI Global Handbook from 2004:

*In 1999, recognizing that the 1982 ruling created confusion among the food processors, the FDA encouraged EPRI's FTA to pursue the development and submission of a Food Additive Petition (FAP) that would allow the use of ozone as a contact antimicrobial agent in food. Petitioners D.M. Graham of EPRI and R.G. Rice of RICE International Consulting Enterprises completed the FAP and submitted it to the FDA in August 2000. After an expedited and rigorous review by the FDA staff, the FDA recognized ozone as an antimicrobial agent suitable for use in Food Processing and Agricultural Production. Notice of this recognition appeared in the Federal Register, June 26, 2001.*

**December 17, 2002** - USDA final rule on ozone, FSIS Directive 7120.1 Safe and suitable ingredients used in the production of meat and poultry.

FSIS Directive 7120.1 states: *Ozone for use on all meat and poultry products. Ozone can be used in accordance with current industry standards of good manufacturing practice. No other guidelines are given on levels or dosages of ozone.* (Reference 21 CFR 173.368)

**June 26, 2001** - FDA Federal Register Vol. 66 No.123: *The Food and Drug Administration (FDA) is amending the food additive regulations to provide for the safe use of ozone in gaseous and aqueous phases as an antimicrobial agent on food, including meat and poultry. This action is in response to a petition filed by the Electric Power Research Institute, Agriculture and Food Technology Alliance. This rule is effective June 26, 2001. The April 13, 1998 FDA Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables, states that "Ozone treatment of wash and flume waters holds promise as a treatment to control microbial build-up, especially in recycled water." However, with regard to chlorine: "Fruit and vegetable tissue components and other organic matter neutralize chlorine rendering it inactive against microorganisms."*

