

Course Title: On-Site Sodium Hypochlorite Generation as a Safe and Efficient Alternative to Chlorine Gas or Commercial Strength Bulk Hypochlorite for Water Disinfection

60 minutes of instruction

Course Description: This 60-minute seminar will provide water system managers, operators and engineers a practical understanding of the science and implementation behind on-site sodium hypochlorite generation (OSHG) as a source of chlorine disinfection capacity for water and wastewater plants as well as distributed well systems.

Course Outline:

1. The basics of electrolytic generation of sodium hypochlorite or bleach
 - a. Understanding the relationships between table salt (NaCl), electricity, softened water, hydrogen and the bleach product
 - b. Economic considerations versus bulk hypochlorite and OSHG
2. Equipment Components and Technical Design
 - a. Previous generations of OSHG equipment versus current generation
 - b. Role of equipment components
 - c. Process flow diagram walk-through
 - d. Engineering design considerations and lessons learned
3. Case Studies:
 - a. San Diego, CA 30MGD conversion from bulk bleach to OSHG
 - b. Nashville, TN 180MGD conversion from gas chlorine to OSHG
 - c. Other cases studies include multiple well sites and distribution system residual control

Presenter Bios:

Gunnar Thordarson

Executive Vice President & Founder, PSI Water Technologies, Inc.

Gunnar co-founded Chemical Services Company in 1988 to provide alternative disinfection technology as a response to a toxic gas ordinance being adopted in California communities. He was also the co-founder and President of ClorTec and built the company from a small operation to a dominant On-site Sodium Hypochlorite generator manufacturer. In 1999, he and his partner, Brent Simmons, sold ClorTec to Severn Trent Services. Gunnar took over as Vice-President of the Water Purification Division of Severn Trent Services.

In 2003 Gunnar co-founded Process Solutions Inc. (now PSI Water Technologies), a technology company providing disinfection solutions. PSI Water Technologies developed the patented Microclor® On-site Sodium Hypochlorite Generation System, as well as the Tank Shark® reservoir mixing system. Gunnar attended the University of California, Davis and has a degree in Economics.

Learning Outcomes:

- Attendees will understand the basics of on-site generation of hypochlorite as an option for water or wastewater disinfection versus gas chlorine or commercial strength bleach
- Attendees will understand the roles of OSHG components as part of an overall OSHG system

- Attendees will be able relate to many applications of OSHG in both large and small plants as well as in applications distant from plants in the well fields or distribution systems