



3-A Sanitary Standards, Inc.



**Promoting Food Safety Through
Hygienic Design**

**2017 Annual Report
3-A Sanitary Standards, Inc.**

3-A Sanitary Standards, Inc. Board of Directors

Officers

David Kedzierski, Chair
Cabot Cheese

John T. Allan, III, Vice Chair
International Dairy Foods Association

Chris Hylkema, Secretary
New York State Department of
Agriculture & Markets

Lyle Clem, Treasurer
Electrol Specialties Co.

Directors

Kenneth Anderson
Harold Wainess & Associates

Carl Buell
Leprino Foods Company

Warren S. Clark, Jr.
Consultant

Dennis Glick
USDA, AMS, Dairy Programs
Dairy Grading Branch

Robert F. Hennes
Chief, FDA/CFSAN-Milk Safety Branch

Greg Marconnet
Mead & Hunt

Dan Meyer
American Dairy Products Institute

Reinhard Moss
GEA Westfalia Separator Group

Helen Piotter
Dean Foods Company

Ronald Schmidt
Food Science & Human Nutrition
University of Florida

F. Tracy Schonrock
TPV Coordinating Committee

Bjorn Sorensen
Dairy Industry Consultants

Counsel

Hugh Webster
Webster, Chamberlain & Bean

Committee Leadership Communications & Education Committee

Greg Marconnet, Mead & Hunt

Finance Committee
Lyle Clem, Electrol Specialties Corp.

Third Party Verification Coordinating Committee

F. Tracy Schonrock

3-A Steering Committee
Lyle Clem, Electrol Specialties Co.

3-A SSI Staff

Timothy R. Rugh, *CAE, Executive Director*
Michael S. Drumm, *Database Manager*
Eric H. Schweitzer, *Director, Standards and
Certification*
Philomena Short, *Technical Assistant*



Equipment Designed With Hygiene in Mind Benefits Everyone

In this new era of the Food Safety Modernization Act (FSMA), hygienic equipment design is no longer an option, it is essential for the processing and handling equipment in all types of food and beverage manufacturing facilities. The FSMA Preventive Controls rules for Human Food and for Animal Food require food processors to maintain written plans for monitoring, verification and corrective action in a range of areas, including supplier management, allergen controls, process controls, GMP program oversight, product traceability, recall plans and intentional contamination or food defense. Implementation of the Preventive Controls rules began in 2016 for large firms and will continue in 2017-2018 for other firms.

In this context, the defining benefits of 3-A Sanitary Standards become even more evident:

- **Equipment Fabricators** capitalize on the added assurance that conveys to buyers with the 3-A Symbol or a 3-A SSI certificate, leading to a competitive advantage and better profits.
- **Processors** gain confidence that the equipment they buy meets the highest standards in hygienic design, streamlining equipment selection, maintenance, and inspections.
- **Regulatory Sanitarians** benefit from a higher level of confidence in the hygienic design and performance of the equipment they inspect.

These are tremendous benefits to commerce and to assuring food safety for consumers.

Looking ahead, there are great opportunities for 3-A SSI to expand awareness and recognition across the spectrum of the food processing industry of what 3-A SSI programs and resources can do for them. We have a compelling value proposition for all of the stakeholders we serve.

More education and outreach are vital and we have made great progress there already. The new customized e-learning modules have introduced 3-A SSI to many new audiences around the world, along with expanded education programs, news articles, resource papers and other knowledge resources. We hope to target outreach in the coming year to show how 3-A SSI and the many motivated volunteer contributors can provide support and solutions where needed across the food processing industry. 3-A SSI has the potential to educate and enlist the support of many new participants in the ongoing mission of 3-A SSI – Promoting Food Safety Through Hygienic Design.



3-A Symbol Program Serves New Demand for Hygienic Design

Demand for the assurance of hygienic equipment design helped propel the 3-A Symbol licensing program to the ninth straight year of strong organic growth in 2016. Both the number of new applications and the retention of current licensees increased in this vital industry program.

The steady growth in this licensing program reflects the demand for food processing equipment that meets provable hygienic design criteria for food processing equipment found in 3-A Sanitary Standards and the perceived value of the 3-A Symbol. The voluntary 3-A Symbol authorization program helps regulatory professionals, processors, and fabricators identify equipment that conforms to the criteria of 3-A Sanitary Standards.

The integrity of the 3-A Symbol authorization program rests upon the Third Party Verification (TPV) inspection requirement that reached full implementation in 2008. The TPV inspection requirement applies to all equipment built to 3-A Sanitary Standards that is licensed to display the 3-A Symbol. A licensee must engage a credentialed inspection professional, known as a Certified Conformance Evaluator (CCE), to conduct an on-site evaluation of finished equipment and other product attributes to affirm the equipment conforms to provisions of the applicable 3-A Sanitary Standard. Any deficiencies discovered in an inspection must be corrected before the equipment can be authorized to display the 3-A Symbol. Equipment manufacturers that do not comply with the TPV inspection requirement risk losing the authorization to use the 3-A Symbol. A complete on-site TPV inspection is required upon application and once every five years thereafter, or any time there is a significant design change or non-conformance.

The 3-A Symbol is a registered mark used since 1956 to identify equipment that meets 3-A Sanitary Standards for design and fabrication. Voluntary use of the 3-A Symbol on dairy and food equipment conveys assurance that equipment meets sanitary standards, provides accepted criteria to equipment manufacturers for sanitary design, and establishes guidelines for uniform evaluation and compliance by sanitarians. Recognition and demand

for '3-A' equipment is growing across the human and animal food processing industry as processors institute written plans to comply with the new federal rules on Preventive Controls under the Food Safety Modernization Act. The Preventive Controls rules require food processing facilities to establish and implement a written food safety plan that includes an analysis of hazards and risk-based preventive controls.

Fabricators from across the U.S. and 25 other countries around the world maintain a 3-A symbol authorization to verify the equipment conforms to 3-A Sanitary Standards. Other countries include:

Australia	Israel	Poland
Belgium	India	Spain
Canada	Italy	Sweden
China	Japan	Switzerland
Denmark	Korea	Taiwan
England	Malta	Thailand
Finland	Mexico	Turkey
France	Netherlands	
Germany	New Zealand	

The 3-A SSI website features on-line access to complete certificate information for all 3-A Symbol licensees. This public information offers detailed information on models/equipment covered under a company's license to assist regulatory sanitarians, processors, equipment fabricators, and other interested parties. The information is searchable by the unique authorization number, equipment type/standard or company name. A copy of the actual authorization certificate may also be printed from the online database. The certificate search database is the most frequently visited area of the 3-A SSI web resources.

The TPV requirement, combined with easy access to licensee information, has enhanced the level of integrity and recognition of the 3-A Symbol for everyone concerned with the safety of consumers of food, beverages and pharmaceutical products, fulfilling one of the primary mission objectives of 3-A SSI.



3-A SSI recorded significant growth this year in another voluntary certificate program for Replacement Parts and System Components. The Replacement Parts and System Component Qualification Certificate (RPSCQC) Program is open to manufacturers of replacement parts or system components that are not otherwise eligible for 3-A Symbol authorization. The RPSCQC is beneficial to certificate holders and customers because it affirms that such parts or system components are compatible with the design criteria found in the relevant 3-A Sanitary Standard(s). The RPSCQC is often used in sales or marketing information.

Buyer Beware: Protecting the '3-A' Brand

3-A SSI issued an industry-wide alert to call attention to the misuse of its trademarked 3-A Symbol. The 3-A Symbol was displayed by several Chinese companies without the authorization of 3-A SSI. The list of these companies was posted on the 3-A SSI web site under a special 'Buyer Beware' link and 3-A SSI circulated the announcement widely to regulatory authorities, trade press, licensees and others.

The 3-A Symbol is registered by the U.S. Patent and Trademark Office as the legal property of 3-A SSI. 3-A SSI licenses use of the 3-A Symbol to fabricators around the world to identify equipment that meets 3-A Sanitary Standards for design and fabrication. Use of the 3-A Symbol by dairy and food equipment fabricators helps assure processors that equipment meets sanitary standards, provides accepted criteria to equipment manufacturers for sanitary design, and establishes guidelines for uniform evaluation and compliance by sanitarians in the U.S.

The unauthorized use and display of the 3-A Symbol is misleading and potentially damaging to customers who select such products with the understanding the equipment has been verified to meet the criteria of a 3-A Sanitary Standard. Similarly, the unsupported claim of 'meets 3-A' or the inclusion of '3-A', 'AAA' or the like in product information or marketing creates the expectation that such equipment meets the requirements of 3-A SSI for 3-A Symbol authorization.

3-A SSI engaged special counsel in the U.S. and in China to take steps to counter the infringements. Applications were filed to register the 3-A Symbol in the China Trademark Office in (TMO) in all of the different equipment classes which include equipment covered by a 3-A Sanitary Standard. While the applications are pending, 3-A SSI will explore other potential courses of action to end the infringements.

3-A SSI Outreach Gains New Audiences

3-A SSI continued to acquaint key audiences with its role as a trusted resource on hygienic design this year by contributing articles to leading industry publications and other important outreach. This outreach helped spread important knowledge about the critical role of hygienic equipment design and the many benefits of 3-A Sanitary Standards and 3-A Accepted Practices in a wide range of food processing applications.

3-A Sanitary Design Connections

The quarterly e-newsletter *3-A Sanitary Design Connections*, continues to serve a growing, diverse and broad audience of readers from across the U.S. and around the world. Connections brings the important role of 3-A SSI in the hygienic design of equipment used in the processing of food or other products into perspective for equipment fabricators, food processors, regulatory sanitarians, academic leaders and students.

Each issue of Connections includes a lead or feature article on some prominent issue in hygienic equipment design or the role of 3-A Sanitary Standards, 'News of Interest' with relevant news about hygienic design from other sources, and 'What's New In 3-A SSI'. Lead stories in the past year included: Building and Sustaining Hygienic Design for Food Processing, 3-A Equipment and Beyond: Applying 3-A Principles to Food & Beverage Processing Environments, Maintaining Hygienic Design, and more.

Leading Industry Magazines

3-A SSI supports the editorial mission of **Dairy Foods** magazine, reaching 20,550 dairy processors across the \$110 billion dairy industry. 3-A SSI contributed four columns this year, including "Intro to Hygienic Design," "Hygienic Equipment Design Fundamentals," "Maintaining Hygienic Design," and "3-A and EHEDG Harmonization."

3-A SSI continued a series of three half-page display advertisements in **Dairy Foods** and **Food Engineering** (circulation 28,000+) magazines this year. The ads promote recognition of 3-A SSI's integral role in Promoting Food Safety Through Hygienic Design.

3-A SSI received attention in other magazines/periodicals including *Packaging Strategies*, *Robotics Industry Association Robotics Online*, *Cheese Reporter* and *Food Processing*.

3-A SSI Introduces New E-learning Resources

3-A SSI introduced three new e-learning modules designed to bring the world of hygienic equipment design to audiences around the world at any time of the day or night, free of charge. The first three modules in the new series included:

1.0. Overview of Principles of Hygienic Design & Foundation Elements

This module begins with a brief introduction to 3-A SSI and the important role it plays in hygienic design. This module emphasizes the holistic approach to hygienic design and the link between hygienic equipment design, facility design, cleaning and sanitation, operational design and the basics of quality and regulation.

2.0. The Basics of Hygienic Equipment Design

This training module covers the basic principles of hygienic equipment design for equipment that will be used to produce or process a wide variety of products for human consumption, as well as pet foods. This content is based on the principles of hygienic design and the terminology found in 3-A Sanitary Standards and 3-A Accepted Practices.



3.0. Basics of Hygienic Facility Design & Environmental Controls

This module provides the basics of design and environmental controls for food processing facilities. This module covers non-product contact surfaces, air, water, steam utilities, as well as building interior, exterior, and the overall site location. The subject of contamination and cross-contamination includes pests, and operating personnel that may create and transfer unhygienic conditions.

Learning objectives are clearly listed at the beginning of each module and interactive assessment tools are included to support the learning experience. Each module is narrated and script is provided for convenience. All materials are accompanied by straightforward illustrations including photos from the field, animations, as well as informative diagrams.

Each module is about one hour in length and all viewers are encouraged to complete Module 1.0 before moving forward to deepen their knowledge with the other modules. The modules are now available on the 3-A SSI web site in the Knowledge Center. Upon completion of each module, the user may print a Certificate of Completion.

Much of the content for the modules is derived from the comprehensive ANSI/3-A 00-00-2014, 3-A Sanitary Standards for General Requirements, a compendium of baseline sanitary (hygienic) criteria for design, materials, and fabrication/installation of equipment and systems in various 3-A Sanitary Standards and 3-A Accepted Practices. The General Requirements standard is intended for use on a voluntary basis by equipment and machinery fabricators, processors, and regulatory agencies, and by other Standard Developer Organizations (SDOs) to help assure that adequate public health protections exist for the equipment or systems used in the production of food products. The modules also reference criteria from the European Hygienic Engineering & Design Group (EHEDG) and other organizations.

More than 800 users from 23 countries around the world have completed the modules. The users represent a diversity of experience levels from a variety of organizations, including recognized processors, fabricators, regulatory professionals and universities. Some universities intend to incorporate the modules into their coursework.

Three additional modules are in development and more advanced sections are planned for several of the modules.

U.S. Department of Commerce Special American Business Internship Training

3-A SSI continued its liaison with dairy representatives from emerging markets around the world as part of the U.S. Department of Commerce Special American Business Internship Training Program (SABIT). 3-A SSI met in Washington with a group of dairy industry professionals from Azerbaijan, Kazakhstan, Moldova, Russia, Tajikistan and Ukraine. 3-A SSI briefed the delegates on 3-A Sanitary Standards, 3-A Accepted Practices and the 3-A Symbol.

3-A SSI Draws Future Industry Professionals

3-A SSI hosted seven recipients of the 3-A SSI 2016 Student Travel Award this year at the education program and annual meeting. The program helps motivated, career-oriented students to gain comprehensive knowledge about hygienic design for food processing equipment and systems.

The recipients of the 2016 awards included:

George Kwabena Afari	University of Georgia
Gabriela-Alejandra Arteaga-Arredondo	Texas Tech
Ilan-Alexander Arvelo-Yagua	Texas Tech
Darvin-Abel Cuellar-Milian	Texas Tech
Andrea English	Texas Tech
Mengyuan Fan	Ohio State University
Efran Tash	University of California, Davis

The 3-A SSI program reflected high interest this year in the number of applicants, the level of professional achievement and the number of awards granted. According to 3-A SSI Chair Carl Buell (Leprino Foods Company), "Hygienic equipment design is a fundamental element of assuring food safety. We have made great efforts to publicize efforts in education and to gain attention with the academic leaders in our associated fields. These efforts are a core value of 3-A SSI and should be fully embraced. The 3-A SSI program gives these future food industry professionals a great opportunity to gain in-depth knowledge about hygienic equipment design in the real world and network with a truly diverse group of industry leaders."

Recipients of the 2016 awards demonstrated interest and commitment to food safety and quality as a student enrolled full-time in a food technology, food science, dairy science or other closely related program (undergraduate or graduate level) at a college or university in the U.S. or Canada. Award recipients were selected by a 3-A SSI review committee on the basis of a personal essay, official transcripts and a letter of recommendation from a faculty member or department head.

3-A SSI Professional Education Program Grows

2016 Education Program: Building and Sustaining Hygienic Design for Food Processing

3-A SSI wrapped up a very successful 2016 Education Program and Annual Meeting on May 16-19, 2016 at the Clarion Hotel & Conference Center in Milwaukee, WI. The program of high quality speakers and topics attracted a record number of participants and sponsors:

- **3-A SSI for Beginners and the Basics of Sanitary Design**
Dennis Glick, USDA, Agricultural Marketing Service, Dairy Programs
- **Building and Sustaining Hygienic Design for Food Processing**
Alejandro Echeverry, Assistant Professor, Food Safety, Texas Tech University
- **Global Food Safety: Hygienic Equipment Design and Food Safety Audits**
Dr. Ronald Schmidt, University of Florida
Ludvig Josefsberg, President, European Hygienic Engineering & Design Group (EHEDG)
Allen Saylor, Center for Food Safety & Regulatory Solutions

- **Hygienic Equipment Design by the Numbers**
Steve Blackowiak, Buhler AG
- **Process Integration for Hygienic Design: Promises and Perils**
Greg Marconnet, President, Marconnet Technologies, LLC
- **Hygienic Welding: How Do You Know When It's Right?**
Geir Moe, Nickel Institute, Technical Services Coordinator
- **Workforce Engagement in Food Processing: The Food Industry Technicians (FIT) Program**
Mike Grogan, Project Consultant, Food Processing Suppliers Association
- **What is Your Control System Telling You, and Are You Listening?**
Kyle R. Weatherly, Automation Sales Engineer, Advanced Process Technologies, Inc.
- **What's New for Mechanical Seals?**
Terry Wolfe, Huhnseal USA, Inc.
- **Sanitation Challenges in Retail Delis: An Opportunity**
Susan R. Hammons, PhD Candidate, Department of Food Science, Purdue University
- **Claims of Conformance to 3-A Standards by Non-Symbol Holders**
Hugh Webster, Webster, Chamberlain & Bean
- **New On-line Education Resources**
Larry Hanson, Chair, 3-A SSI Communications & Education Committee

Presentations from 2016 and previous yearly education programs are archived and available at no charge on the 3-A SSI web site.

3-A SSI Volunteer Recognition

3-A SSI announced the recipients of its 2016 Volunteer Service Awards at the 3-A SSI 2016 Annual Meeting in Milwaukee, WI. The 3-A SSI Volunteer Service Awards recognize the extraordinary dedication and commitment of individuals who contribute to the development of voluntary standards and the mission of 3-A SSI. Nominations for the awards are made by fellow volunteers from the three stakeholder groups in 3-A SSI – regulatory sanitarians, fabricators, and processors – and others.

3-A SSI Chair Carl Buell (Leprino Foods Co.) announced the following award recipients for 2016:



Lyle Clem (Electrol Specialties Co.) received the 'Richard K. Smith' Advancement Award for outstanding accomplishments on behalf of 3-A SSI.



Bob Rochelle (Nachi Robotics Systems) received the Next Generation Award for outstanding accomplishments by an individual who has been engaged in 3-A SSI activities for less than five years.



Gabe Miller (Pi-FS, LLC) received the Leadership Service Award for outstanding service to the voluntary standards development of 3-A SSI and significant contributions to the mission of 3-A SSI.

3-A SSI Certified Conformance Evaluators Build Inspection Expertise

3-A SSI strives for consistent and uniformly expert assessments of equipment by its accredited Certified Conformance Evaluators (CCEs). CCEs are independent equipment review professionals accredited by 3-A SSI to perform the Third Party Verification (TPV) inspection of equipment required for a 3-A Symbol authorization and other voluntary 3-A SSI certificate programs. 3-A SSI worked this year to support the knowledge and skills of the CCEs in their important inspection work through a period of substantial worldwide demand for new and renewal TPV inspections. The TPV Coordinating Committee, consisting of regulatory sanitarians, fabricator and processor representatives, coordinated a special training seminar for CCEs. In addition, the TPV Coordinating Committee conducted a series of phone conferences throughout the year to refine and improve TPV inspection program procedures and to exchange information on the application of 3-A Sanitary Standards and other hygienic design issues relating to the performance of TPV inspections. The Committee also published several bulletins to provide guidance on consistent and uniform CCE inspection services. The new bulletins are available to all visitors on the 3-A SSI website.

Conversion of 3-A SSI Standards and Accepted Practices Makes Significant Progress

Since the publication of *ANSI/3-A 00-00-2014*, 3-A Sanitary Standards for General Requirements (GR) in late 2014, 3-A SSI Work Group members have contributed hundreds of hours of time and tremendous expertise to facilitate the conversion of all 3-A Sanitary Standards and 3-A Accepted Practices to a new, modern format. The American National Standard (ANS), also referred to as the “A Level” Standard, represents a comprehensive foundational document with the minimum sanitary (hygienic) requirements for design, materials, and fabrication of product contact surfaces and nonproduct contact surfaces for equipment and systems.

Work to convert all 3-A Sanitary Standards and Accepted Practices to a new “B Level” format and style utilizing the GR represents the largest document revision project in the history of 3-A SSI.

A number of new “B Level” Standards have been approved and published this year, including:

- *Number 05-16, 3-A Sanitary Standard for Stainless Steel Automotive Transportation Tanks for Bulk Delivery and Farm Pick-Up Service*
- *Number 33-03, 3-A Sanitary Standard for Metal Tubing*
- *Number 42-02, 3-A Sanitary Standard for In-line Strainers*
- *Number 45-03, 3-A Sanitary Standard for Crossflow Membrane Modules*
- *Number 103-00, 3-A Sanitary Standard for Robot-based Automation Systems*

Many more documents are in the conversion process:

- WG 1 (Vessels) amendment Project B-78-01-A for *3-A Sanitary Standard for Spray Devices Intended to Remain in Place*
- WG 2 (Fillers) amendment Project B-17-11-A for *3-A Sanitary Standard for Formers, Fillers, and Sealers of Containers for Fluid Products*
- WG3 (Valves & Fittings) amendment Project B-58-01-A for *3-A Sanitary Standard for Vacuum Breakers and Check Valves*
- WG 4 (Pumps & Mixers) new Project B-77-00-A for *3-A Sanitary Standards for Mechanical Seals*
- WG 5 (Heat Exchangers) amendment Project B-31-06-A for *3-A Sanitary Standard for Scraped Surface Heat Exchangers*
- WG 6 (Conveyors & Feeders) amendment Project B-81-00-A for *3-A Sanitary Standard for Auger-type Feeders*
- WG 7 (Instruments) amendment Project B-28-04-A for *3-A Sanitary Standard for Flow Meters*
- WG 8 (Concentrating Equipment) amendment Project B-610-02-A for *3-A Accepted Practice for Sanitary Construction, Installation, and Cleaning of Crossflow Membrane Processing Systems*
- WG 9 (Farm & Raw Milk) amendment Project B-30-01-A for *3-A Sanitary Standard for Farm Storage Tanks*
- WG 9 (Farm & Raw Milk) new Project B-102-00-A for *3-A Sanitary Standard for Automated Milking Installations*
- WG 10 (Cheese & Butter Equipment) amendment Project B-38-00-A for *3-A Sanitary Standard for Open Cheese Vats and Tables*
- WG 12 (Plant Support Systems) amendment Project B-604-05-A for *3-A Accepted Practice for Supplying Air Under Pressure in Contact with Product or Product Contact Surfaces*

The conversion of each document entails long and careful consideration and cooperation among many dedicated volunteers, from the initial drafting and review through the balloting and evaluation of comments and final editing. The strength of 3-A SSI rests upon the unwavering commitment of its volunteers to maintaining the most widely recognized and respected criteria for hygienic equipment design.





3-A Sanitary Standards, Inc.



3-A Sanitary Standards, Inc.
6888 Elm Street, Suite 2D
McLean, VA 22101
PH: 703.790.0295
FAX: 703.761.6284

Visit us at: www.3-a.org