



# *Global Food Safety: Hygienic Design & Food Safety Audits – Introduction/Overview*

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3-A Sanitary Standards, May 2016

# *Global Food Safety: Hygienic Design & Food Safety Audits*

## ○ **Schmidt -**

- Introduction & general overview of Global Food Safety Initiatives (GFSI) with respect to food equipment.

## ○ **Josefsberg –**

- European Hygiene Engineering & Design Group (EHEDG) perspective on GFSI

## ○ **Sayler -**

- Food industry perspective on GFSI



# *Alternate Title: Grandpa is Singing to the Choir*



## ASSIGNED TASKS:

- **Describe the Importance of Hygienic Equipment Design in Food Safety**
- **Provide an General Overview of Global Food Safety Initiatives (GFSI)**
- **Evaluate the Emphasis on Equipment Standards in GFSI Auditing Schemes**



*“Grandpa – How far have we come in food equipment hygienic design across the food industry?”*



# *New & Improved Milk Pail – Back in the Day*





# *Processing Mushrooms – Back in the Day*



# *Fresh Produce – Back in the Day*





# *Fresh Produce – Back in the Day*



Courtesy: Glades Crop  
Care, Inc.



*Ah Yes.  
The Good  
Ol' Days*





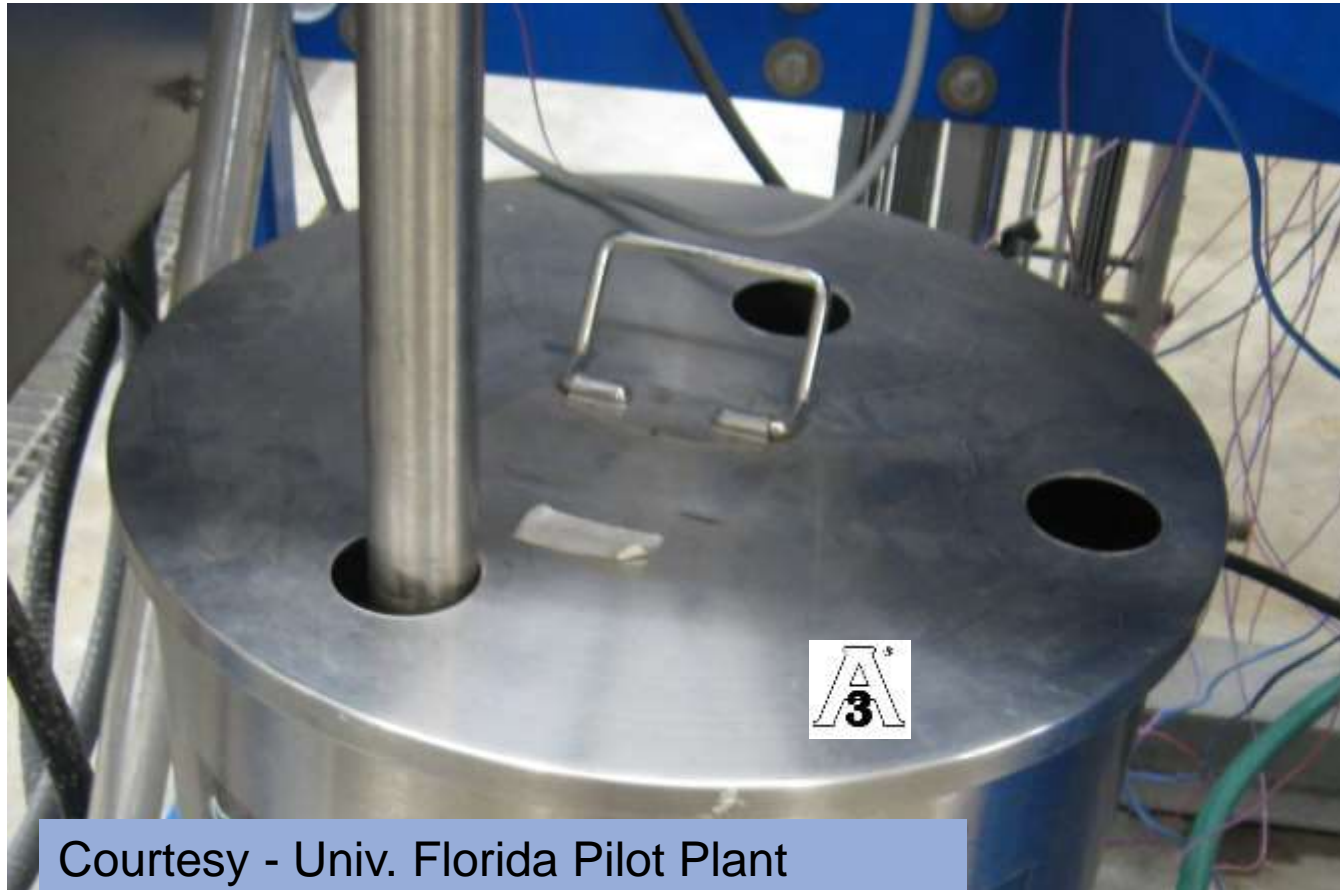
Courtesy - Univ. Florida Pilot Plant



*Baking  
Industry –  
Back in  
the Day*



# *Juice Pasteurizer Balance Tank – Back in the Day*



Courtesy - Univ. Florida Pilot Plant





# *Juice Pasteurizer Holding Tube – Back in the Day*



Courtesy - Univ. Florida Pilot Plant



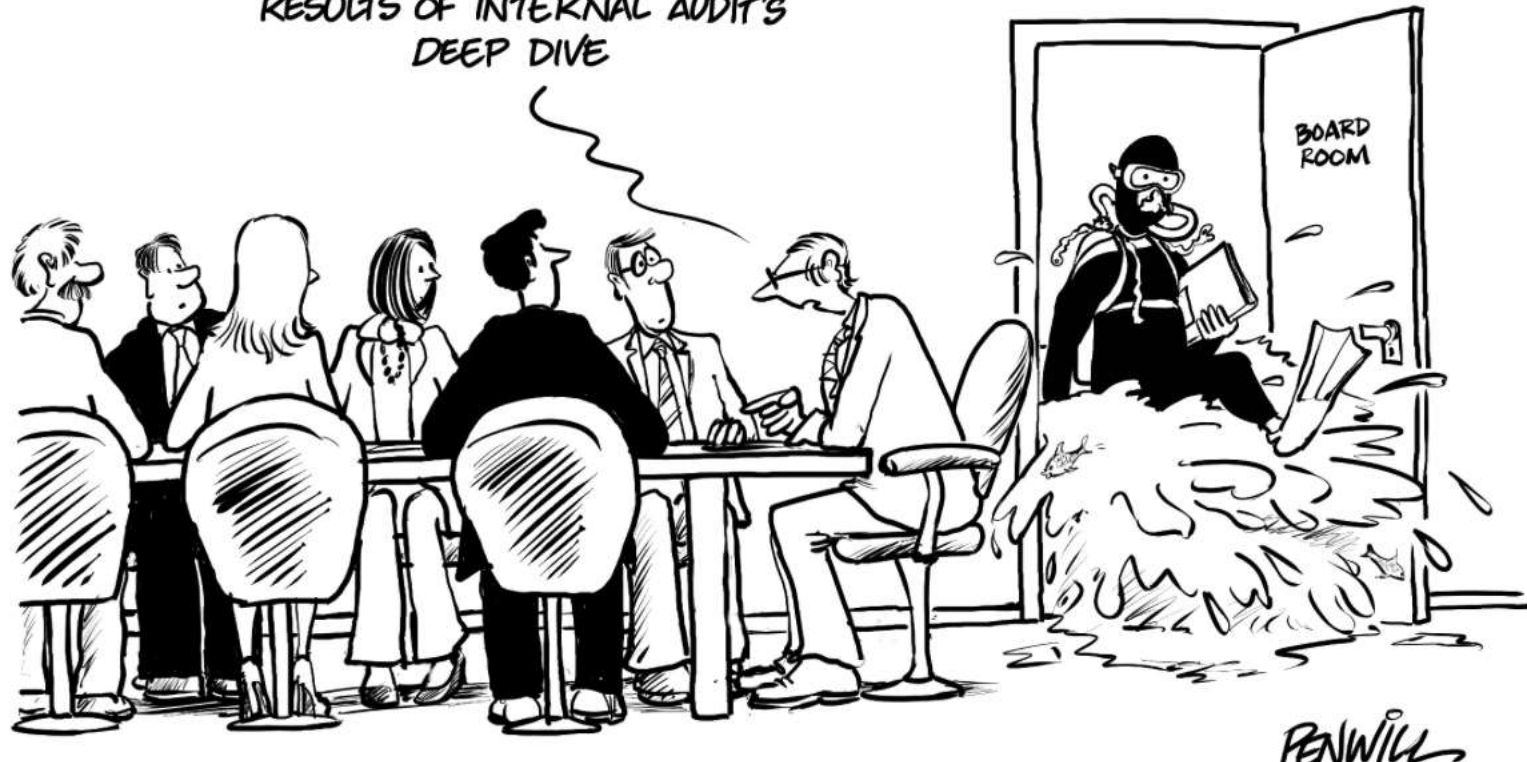
*“But Grandpa – Some of this equipment is still around today. Are we still back in the day?”*

*“Yes my dear, in some ways we are.”*



# TODAY'S FOOD SAFETY PROGRAMS – “AUDIT” IS THE WORD OF THE DAY

NEXT ITEM ON THE AUDIT  
COMMITTEE AGENDA ...  
RESULTS OF INTERNAL AUDIT'S  
DEEP DIVE







## Quote From A Food Industry Colleague\*\*

*“Prescriptive equipment standards are now obsolete because of the thorough ‘performance-based’ auditing programs in place today.”*

**\*\*Don't remember who said this, but am pretty sure it was not Lyle Clem**



# “Performance-based” Food Safety Systems??

- **What Was He Talking About?**
  - HACCP And SSOPs?
  - Auditing Schemes Under Global Food Safety Initiatives (GFSI)?
  - Hazard Analysis Risk-based Preventive Controls (PC) Rule Under The FDA Food Safety Modernization Act (FSMA)?



# ADVANTAGES OF PERFORMANCE-BASED FOOD SAFETY SYSTEMS

- **Require Facilities To Address Food Equipment And Food Contact Surfaces**
- **Assurance That Equipment Is Properly Installed, Operated And Maintained**
- **Emphasis On Documentation**

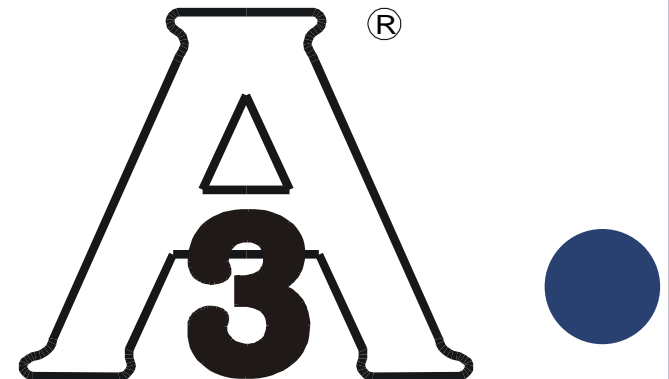


# *But, Where Do You Start Without “Prescriptive Standards”?*





# Organizations Involved in Equipment Standards & Related Activities



# Other Industry Equipment Standards/Guidelines

- Baking Industry
- ISO 14159 Hygiene Requirements for the Design of Equipment
- American Meat Institute (AMI)
- Grocery Manufacturing Assoc. (GMA)/Sanitary Design Working Group
  - Checklist for Low Moisture Foods
- Others





# Food Safety Audits

NSF

EHEDG

3-A  
SSI

Other

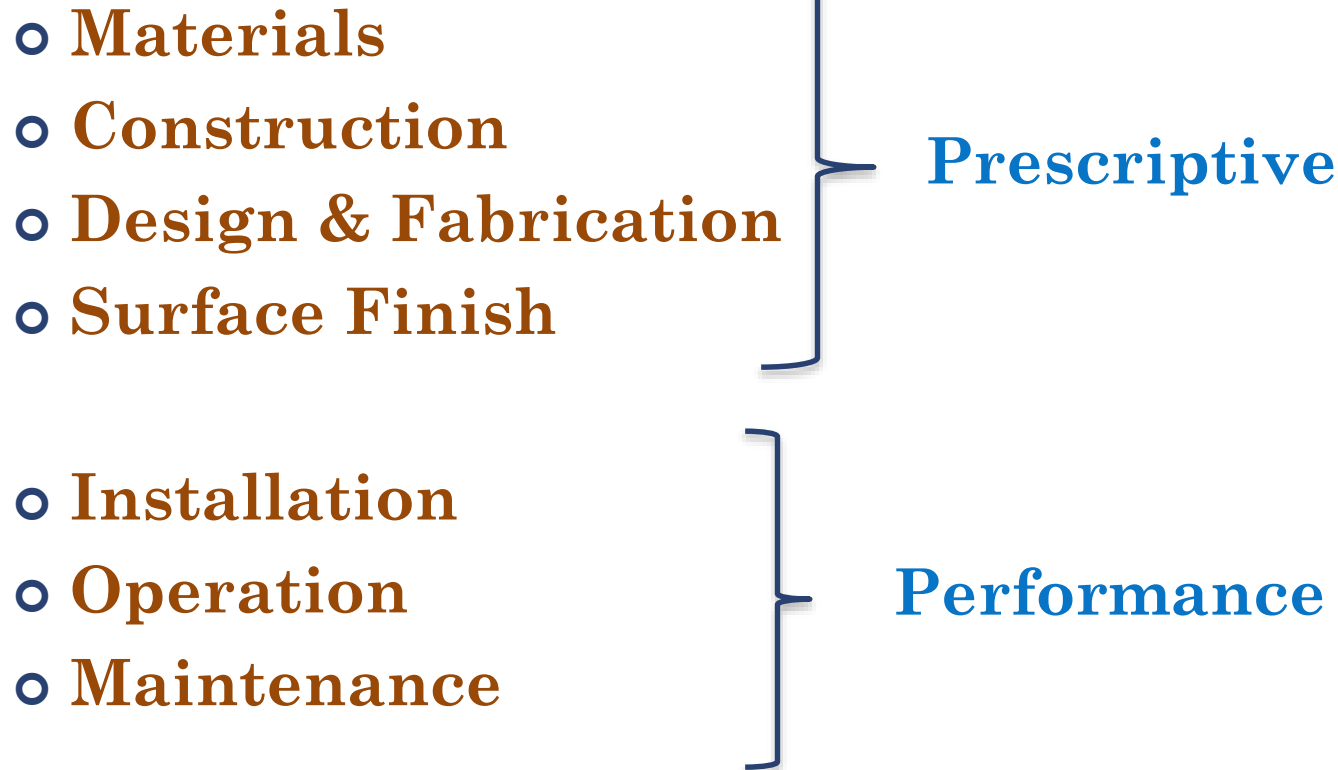
# Elements of Food Equipment Hygienic Design

- **Materials**
- **Construction**
- **Design & Fabrication**
- **Surface Finish**
- **Installation**
- **Operation**
- **Maintenance**





# Elements of Food Equipment Hygienic Design



# *Elements of a Holistic Equipment Hygienic Design Program*



## • Prescriptive Elements

- Hygienic Standards/Criteria
- Equipment Fabrication



## • Performance-Based Elements

- Equipment Fabricator Verification
  - User Verification (Installation, Operation, Maintenance)
  - Auditing/Documentation
- 

## *Quote From A Regulatory Official\*\* :*

*“Food equipment is not as important as other factors in regard to root cause of foodborne illness outbreaks – Let’s concentrate on those other factors!”*

**\*\* I am pretty sure this was not Steve Sims**



# RESPONSE TO SUCH COMMENTS

- Can You Say, “*Listeria*”?
- Can You Say, “*Salmonella*”?
- Can You Say, “*Biofilms*”?
- Can You Say, “*Allergen Cross-Contact*”?
- Can You Say, “*What is the wisdom of throwing harsh chemicals at equipment not designed for it*”?





# Advantages Of Food Equipment Standards

- **Provide Specific Design Criteria Based Upon Sound Science & Engineering**
- **Provide Specificity Relative To Types And Classes Of Equipment**
- **Facilitate Food Safety Audits (Third Party, Regulatory)**
  - **Provide A Template Or Guideline For Evaluating Equipment**
  - **Symbol (Or Marking) On Equipment Provides Assurance That Equipment Has Been Evaluated For Compliance With Design Criteria**



# Global Food Safety Initiatives (GFSI)

- **Nonprofit Foundation Managed by the Consumer Goods Forum – Established 2000**
  - Initiated in retail, but with buy-in from food manufacturing
- **Committed to “Delivering Equivalence and Convergence Between Food Safety Management System (FSMS) Standards”**
  - Strive to minimize duplication
  - Strive to harmonize
  - Strive to decrease the number and multiplicity of audits



# **MOST COMMON GFSI RECOGNIZED SCHEMES IN FOOD PROCESSING SYSTEMS**

- **British Retail Consortium (BRC)  
Global Standard for Food Safety**
- **Food Safety System Certification  
(FSSC) 22000 Food Products**
  - **Includes ISO 22000 & ISO 22002-1**
- **Safe Quality Food (SQF)**
- **International Featured Standards  
(IFS)**



# OTHER GFSI RECOGNIZED SCHEMES

## ○ Aquaculture Seafood

- Global Aquaculture Alliance (GAA) Seafood Processing Standard

## ○ Red Meats

- Global Red Meat Standard (GRMS)

## ○ Agriculture Sector

- Canada Good Agricultural Practices (GAPs)
- GLOBALG.A.P.





*“Grandpa – Has GFSI achieved its goals?”*

*“Too many questions my dear. Too many questions.”*



# ARE EQUIPMENT STANDARDS GIVEN APPROPRIATE EMPHASIS IN GFSI AUDITING PROGRAMS?



# TYPES OF AUDITORS



# British Retail Consortium (BRC) Global Standard

- All Equipment Shall Be Constructed Of Appropriate Materials.
- The Design And Placement Of Equipment Shall Ensure It Can Be Effectively Cleaned And Maintained.
- Equipment In Direct Contact With Food Shall Be Suitable For Food Contact And Meet Legal Requirements Where Applicable



# Safe Quality Food (SQF)

- Equipment Shall Be Designed, Constructed, Operated And Maintained So As Not To Pose A Contamination Threat To Products
- Equipment Shall Be Smooth, Impervious And Free From Cracks Or Crevices





# Food Safety System Certification (FSSC) 22000 Food Products

- **Food Contact Equipment Shall Be Designed And Constructed To**
  - *Facilitate Appropriate Cleaning,*
  - *Of Durable Materials,*
  - *Of Materials Designed For Food Use,*
  - *Be Impermeable And Rust- Or Corrosion-free, And*
  - *Meet Established Principles Of Sanitary Design*



# Observations – GFSI Auditing Schemes

- **Equipment is Addressed**
- **Equipment Provisions Are Generally Written**
- **Depth of Equipment Evaluation?**
  - **Variation Between Auditors**
- **Are Equipment Standards Used?**
  - **Recognized “Where Appropriate”**
  - **Not Required**





Time for next speaker