How to Comply with the 2006 National Food Safety and Standards Act

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What is Food?

- Articles consumed by humans and animals
- Includes chewing gum and drinking water
What is Wholesome Food?

- Nutritionally balanced
- Food without defects
What is Safe Food?

- Food that does not cause injury or harm when consumed by humans or animals

- Trust is placed in food manufacturer to produce safe food

- Consumers are unaware of dangers with food!
Adulterated Food

- Food containing poisonous or deleterious substances
  - Basis for HACCP
- Food containing added poisonous or deleterious substances
- Food containing filth from animal or vegetable matter
- Food prepared under unsanitary conditions
  - Basis for Good Manufacturing Practices
Before You Do Anything: Identify The Hazards

- Hazards:
  a. Physical - peeling paint, rust, glass, metal, wood or plastic
  b. Chemical - grease, lubricants, pesticides, allergens, condensation
  c. Biological - insects, microorganisms, rodents, birds, and their by-products
How Does a Food Manufacturer Combat Hazards?

- Multifaceted programs taking a holistic view of a food plant from the outside in

- Stop, look and listen!

- Seek root cause analysis on eliminating “cause” and not reacting to symptoms
Remember We Have Laws To Follow!

- Food laws help ensure unadulterated product during food manufacturing
- Complying with the laws is good business
- Theory: prescriptive => manufacturing flexibility => innovation in plant equipment and design
Basic Food Laws

- Good Manufacturing Practices (GMPs)
- Hazard Analysis and Critical Control Points (HACCP) Program
  - Preventive food safety program
  - Critical point vs Critical control point
## UNDERSTANDING AND INTERPRETING FOOD SAFETY STANDARDS (GMP Example)

<table>
<thead>
<tr>
<th>What is the language?</th>
<th>How will the company comply</th>
<th>How will the company assure compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>110.10 Personnel</strong>&lt;br&gt;(a) Disease control. Any person who, by medical examination or supervisory observation, is shown to have, or appears to have, an illness, open lesion, including boils, sores, or infected wounds, or any other abnormal source of microbial contamination by which there us a reasonable possibility of food, food-contact surfaces, or food packaging materials becoming contaminated, shall be excluded from any operations which may be expected to result in such contamination until the condition is corrected. Personnel shall be instructed to report such health conditions to their supervisors.</td>
<td><strong>110.10 Personnel</strong>&lt;br&gt;(a) Disease control. Employees who are sick or have open wounds, sores, boils, or bandages on such wounds, shall report such conditions to their supervisor, and must not work with food, food-contact surfaces, or food packaging materials.</td>
<td><strong>110.10 Personnel</strong>&lt;br&gt;(a) Disease control.&lt;br&gt;A form showing which employee was excluded in performing operations, the date, and time, and employee’s reassigned duties if not absent.&lt;br&gt;Number of employees excluded by month from a particular operation.</td>
</tr>
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<td>How will the company comply</td>
<td>How will the company assure compliance</td>
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</tr>
<tr>
<td><strong>110.20 Plants and grounds.</strong></td>
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</tr>
<tr>
<td>(a) Grounds. The grounds about a food plant………limited to:</td>
<td>(a) Grounds. The grounds surrounding the food plant will be made of concrete and maintained in such a fashion so as to eliminate food contaminants.</td>
<td>(a) Grounds.</td>
</tr>
<tr>
<td>(1) Properly storing equipment, removing litter and waste, and cutting weeds or grass within the immediate vicinity of the plant buildings or structures that may constitute an attractant, breeding place, or harborage for pests.</td>
<td>(1) Equipment cannot be stored on grounds. All equipment must be stored in the equipment storage shed on grated shelves. The perimeter of the food plant will have a 2-ft vegetation-free barrier zone. Shrubs and trees will be trimmed at established schedules and inspected for rodent and insect activity.</td>
<td>Daily inspection of the food plant exterior (a form is needed for this)</td>
</tr>
<tr>
<td></td>
<td>(2) All roads shall be paved kept in good repair.</td>
<td>A separate form showing when roads were repaired, shrubs, and bushes were trimmed.</td>
</tr>
</tbody>
</table>
Table I: Number and percent of recall actions by industry (N=1146) 1999-2003

<table>
<thead>
<tr>
<th>Industry</th>
<th>No. recall actions</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bakery products</td>
<td>217</td>
<td>18.94%</td>
</tr>
<tr>
<td>Fishery/seafood products</td>
<td>135</td>
<td>11.78%</td>
</tr>
<tr>
<td>Bean/vegetable products</td>
<td>88</td>
<td>7.68%</td>
</tr>
<tr>
<td>Multiple food dinner products</td>
<td>85</td>
<td>7.42%</td>
</tr>
<tr>
<td>Non-chocolate candy products</td>
<td>75</td>
<td>6.54%</td>
</tr>
<tr>
<td>Fruit products</td>
<td>66</td>
<td>5.76%</td>
</tr>
<tr>
<td>Ice cream products</td>
<td>62</td>
<td>5.41%</td>
</tr>
<tr>
<td>Chocolate products</td>
<td>50</td>
<td>4.36%</td>
</tr>
<tr>
<td>Snack food products</td>
<td>48</td>
<td>4.19%</td>
</tr>
<tr>
<td>Beverage/beverage base products</td>
<td>38</td>
<td>3.32%</td>
</tr>
<tr>
<td>Cheese products</td>
<td>29</td>
<td>2.53%</td>
</tr>
<tr>
<td>All other products</td>
<td>253</td>
<td>22.07%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1146</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Recall actions by specific processor-level problems (N=1146)
Proactive Versus Reactive Food Industry Programs

• Former, you’re a hero! Latter, you’re a scapegoat!
  – Knowledge, intent, and foreseeability
• Prevent ALL “pest” harborages by sanitary design and program design
• Know thy plant and thy neighbors!
• Must have personal accountability
  – Attitude to do the right thing
Proactive Versus Reactive

- People, people, people—food plant is a community
- People make mistakes!
- Are people adequately trained to do the job?
Bulls Eye Approach-Outside

- Outside- farthest away and work toward plant
  
a. Perimeter secured/fenced?

b. Neighbors- good and bad

c. Wind patterns, sun exposure on building

d. Landscaping
Bulls Eye Approach - Outside

e. Pest interceptors such as rodent bait stations/traps or insect pheromone traps
f. Paved lots; eliminate standing water and evils of crushed rock
g. Roof areas- smooth, clean, ductwork, gutters
Unsanitary conditions outdoors
Building Exterior

Shrubs too close to building

Have an 2 ft vegetation free barrier zone
Bait Stations

buffer zone
Traps
Birds

Pigeon

English or House Sparrow

European Starling
Bird Management

Exclusion
Repellents
  Non-chemical
  Chemical
Trapping
Exclusion tactics
Repellents

Bird Repellent-Buy one or a Case

4-The Birds, 10 Oz. Cartridges
Bulls Eye Approach-Outside

h. Lighting- mercury vapor highly attractive versus metal halide; illuminate back onto building; never above doors or air intakes
i. Dock/rail/personnel doors/windows
j. Storage areas- protected, up off ground, no pallets
k. Building seams
Pest entry points
Bulls Eye Approach-Inside

- Start at receiving
  a. Dock/waste areas
  b. Light traps, pheromone traps, rodent control, air curtain failures
  c. Any need to separate/segregate employees for micro control?
  d. Shoe/Uniform program
A good pest exclusion practice
Improper stocking or storage practices

Give 12 inches of space between the wall and pallets
Pallets, 6 inches off the floor
Bulls Eye Approach - Inside

e. Restroom/locker rooms- slanted top of lockers, no personal food storage, periodic locker cleanouts/pest control

f. Product flow- raw materials in one end and finished product out the other

g. Positive versus negative air pressure
Poor Sanitation
Spillage

Prevent unsanitary conditions
Building Interior: Unsanitary Conditions

Flat surfaces

Storage of unused equipment

Clean or avoid flat surfaces
Discard unused equipment
Equipment

- What type of product is produced? dry, wet, caustic, acidic, or perishable
- Risks: meat, seafood, juices are regulated
- Wet or dry cleaned, manual, COP, CIP, vacuum, air
Equipped

- Is there a cross-functional member equipment review/approval program?
- No unprotected glass
- Ceilings/overheads- no ledges, false ceiling trap
- Food contact surfaces-corrosion resistant, non-porous, non-absorbent, and non-puddling
Equipment

- Easy, quick disassembly and accessible
- Micro/allergen cleanable and verifiable
- No hollow areas, want continuous welds versus stitch
Inspections

- Not a waste of time; must know plant inside and out
- Multidisciplinary in membership team, cross-train, rotate, document deficiencies observe for proper follow up
- Close the loop; not just a “list” creator; root cause analyses
**Inspections**

- Develop checklists
- Take corrective action/develop a preventive solution
- No third party inspector should inspect your plant and find an un-inspected area by the team
Master Sanitation/Cleaning Schedules

- Daily versus non-daily; weekly, monthly, quarterly, semi-annual and annual
- Only way you can answer question: “when was the last time this was cleaned?”
- Leave no space blank
- Keep it simple
- Floor drains
- Evaluate and determine economic benefits
Preventive Maintenance and Work Orders

- Simple and document
- Filters, sifters, strainers, lubricants, magnets and metal detectors
People, Equipment and Training

- Proper people doing the proper job with the proper equipment and documented training
- $ driven but be careful how you phrase message to employees (motivation)
- Corner cutting (chemical⇒ $ savings)
- Language and color blind barriers
Management Systems for Product Safety

- Organization
- Vendor Specifications
- QC Programs/Lab Access/Sampling
- Receiving Programs
- Preventive Maintenance/Equipment Specifications
- Employee Training
- Preventive Cleaning
- IPM programs
- Management Self-Inspection Program
- Consumer Complaint/Recall Program
- HACCP
Organization

- Clearly defined charts
- Clear lines of responsibilities/Accountability
- Trained Staff
- Open Communication
- Team Effort
“If you want 100% safety, you have to stop eating....”

Dr. Marion Nestle
Professor of Nutrition
New York University
A Food Manufacturer Should....

- Monitor ingredient quality
- Keep an inventory of ingredients/additives
- Comply with regulatory standards
- Coordinate delivery fleets
- Institute preventive maintenance programs
- Be computer literate
- Manage and motivate people
- Keep abreast of technology and the changing consumer
- It is not an easy task!
Thank You