DETERMINING RISK FACTORS IN PROCESS FLOWS

Several of the most common risk factors associated with each food preparation process are outlined in HACCP Builder. Remember that while you should generally focus your food safety management system on these risk factors, there may be other risk factors unique to your operation or process that are not listed here. You should evaluate your operation and the food preparation processes you use independently. In developing your food safety management system, keep in mind that active managerial control of risk factors common to each process can be achieved by either designating certain operational steps as critical control points (CCPs) or by implementing prerequisite programs. The HACCP plans that you will develop using HACCP Builder, in combination with prerequisite programs, will constitute a complete food safety management system.

Facility-wide Considerations

In order to have active managerial control over personal hygiene and cross-contamination, you must implement certain control measures in all phases of your operation. All of the following control measures should be implemented regardless of the food preparation process used:

No bare hand contact with ready-to-eat foods (or use of an approved, alternative procedure)
to help prevent the transfer of viruses, bacteria, or parasites from hands

Proper handwashing
to help prevent the transfer of viruses, bacteria, or parasites from hands to food

Restriction or exclusion of ill employees
to help prevent the transfer of viruses, bacteria, or parasites from hands to food

Prevention of cross-contamination
of ready-to-eat food or clean and sanitized food-contact surfaces with soiled cutting boards, utensils, aprons, etc. or raw animal foods

Food Preparation Process 0 – No Preparation with No Cook Step

Example Flow: RECEIVE – STORE – HOLD – SERVE

Several food flows are represented by this particular process. Many of these food flows are common to both retail food stores and food service facilities, while others only apply to retail operations. Breads, cookies and other related foods are grouped in this category. Components of these foods are received and will not be cooked prior to consumption. Foods cooked at the processing level but then undergo no further cooking at the retail level before being consumed are also represented in this category. Examples of these kinds of foods are breads, cookies, crackers, and other baked products. All the foods in this category lack a kill (cook) step *while at the retail or food service establishment*. In other words, there is no complete trip made through the danger zone for the purpose of destroying pathogens. You can ensure that the food received in your establishment is as safe as possible by requiring purchase specifications. Without a kill step to destroy pathogens, your primary responsibility will be to prevent further contamination by ensuring that your employees follow good hygienic practices.

Cross-contamination must be prevented by properly storing your products away from raw animal foods and soiled equipment and utensils. In addition to the facility-wide considerations, a food safety management system involving this food preparation process should focus on ensuring that you have active managerial control over the following:

Food source
Receiving condition
Date marking

Food Preparation Process 1 – Food Preparation with No Cook Step
Example Flow: RECEIVE – STORE – PREPARE – HOLD – SERVE

Several food flows are represented by this particular process. Many of these food flows are common to both retail food stores and food service facilities, while others only apply to retail operations. Raw, ready-to-eat food like sashimi, raw oysters, and salads are grouped in this category. Components of these foods are received raw and will not be cooked prior to consumption. Foods cooked at the processing level but that undergo no further cooking at the retail level before being consumed are also represented in this category. Examples of these kinds of foods are deli meats, cheeses, and other pasteurized products. In addition, foods that are received and sold raw but are to be cooked by the consumer after purchase, i.e. hamburger meat, chicken, and steaks, are also included in this category. All the foods in this category lack a kill (cook) step *while at the retail or food service establishment*. In other words, there is no complete trip made through the danger zone for the purpose of destroying pathogens. You can ensure that the food received in your establishment is as safe as possible by requiring purchase specifications. Without a kill step to destroy pathogens, your primary responsibility will be to prevent further contamination by ensuring that your employees follow good hygienic practices.

Cross-contamination must be prevented by properly storing your products away from raw animal foods and soiled equipment and utensils. Foodborne illness may result from ready-to-eat food being held at unsafe temperatures for long periods of time due to the outgrowth of bacteria. In addition to the facility-wide considerations, a food safety management system involving this food preparation process should focus on ensuring that you have active managerial control over the following:

Cold holding or using time alone
to inhibit bacterial growth and toxin production

Food source
(especially for shellfish due to concerns with viruses, natural toxins, and *Vibrio* and for certain marine finfish intended for raw consumption due to concerns with ciguatera toxin)

Receiving temperatures (especially certain species of marine finfish due to concerns with scombrotoxin)

Date marking
of ready-to-eat PHF held for more than 24 hours to control the growth of *Listeria monocytogenes*

Freezing
certain species of fish intended for raw consumption due to parasite concerns

Cooling
from ambient temperature to prevent the outgrowth of spore-forming or toxin-forming bacteria

Food Preparation Process 2 – Preparation for Same Day Service
Example Flow: RECEIVE – STORE – PREPARE – COOK – HOLD – SERVE

In this food preparation process, food passes through the danger zone only once in the retail or food service establishment before it is served or sold to the consumer. Food is usually cooked and held hot until served, i.e. fried chicken, but can also be cooked and served immediately. In addition to the facility-wide considerations, a food safety management system involving this food

preparation process should focus on ensuring that you have active managerial control over the following:

Cooking
to destroy bacteria and parasites

Hot holding or using time alone
to prevent the outgrowth of spore-forming bacteria

Approved food source, proper receiving temperatures, and proper cold holding prior to cooking are also important if dealing with certain marine finfish due to concerns with ciguatera toxin and scombrotoxin.

Food Preparation Process 3 – Complex Food Preparation
Example Flow: RECEIVE – STORE – PREPARE – COOK – COOL – REHEAT – HOT HOLD – SERVE

Foods prepared in large volumes or in advance for next day service usually follow an extended process flow. These foods pass through the temperature danger zone more than one time; thus, the potential for the growth of spore-forming or toxigenic bacteria is greater in this process. Failure to adequately control food product temperatures is one of the most frequently encountered risk factors contributing to foodborne illness. In addition, foods in this category have the potential to be re-contaminated with *L. monocytogenes*, which could grow during refrigerated storage. FDA recommends that food handlers minimize the time foods are at unsafe temperatures. In addition to the facility-wide considerations, a food safety management system involving this food preparation process should focus on ensuring that you have active managerial control over the following:

Cooking
to destroy bacteria and parasites

Cooling
to prevent the outgrowth of spore-forming or toxin-forming bacteria

Hot and cold holding or using time alone
to inhibit bacterial growth and toxin formation

Date marking
of ready-to-eat PHF held for more than 24 hours to control the growth of *Listeria monocytogenes*

Reheating
for hot holding, if applicable

Approved food source, proper receiving temperatures, and proper cold holding prior to cooking are also important if dealing with certain marine finfish due to concerns with ciguatera toxin and scombrotoxin. Consult Annex 2 of this Manual for special considerations related to seafood.