

HACCP Plan

Designing a HACCP Plan for Your Facility

Calvert County Health Department
Division of Environmental Health



What is a HACCP Plan?

- HACCP stands for Hazard Analysis Critical Control Point.
- It is a written plan that defines the procedures for maintaining control of potentially hazardous food at the critical control points of food preparation or processing.
- Simply put, it is a plan stating how food is to be handled so consumers do not get sick.

What is a Critical Control Point?

- A critical control point (CCP) is a step in which the critical control limit could be exceeded.
 - A critical control limit is a minimum or maximum value at which a physical, chemical, or biological parameter must be controlled to minimize the risk that a potential food safety hazard may occur.
- Examples of CCPs include:
 - Receiving
 - Food Preparation/Food Handling
 - Cold Holding
 - Hot Holding
 - Cooking
 - Reheating
 - Transportation
 - Time Only Hold

Is a HACCP Plan Required?

- All facilities classified as “high” or “moderate” need a HACCP Plan. Generally, these facilities serve unwrapped potentially hazardous foods.
- A HACCP plan must be submitted and approved by the Health Department before food service begins.
- HACCP plans must be current and submitted to Health Department when the following occur:
 - Any time a menu change occurs, or
 - A CCP change occurs (i.e. soup is no longer commercially prepared, it is made at the restaurant), or
 - If regulatory updates change the approved critical limits, or
 - At least every 5 years, if no changes have been made

What Needs to be in a HACCP Plan?

1. Identification of each Critical Control Point (CCP)
2. Critical limits for each CCP
3. Monitoring procedures for each CCP
4. Corrective action that will be taken when there is a loss of control at a CCP
5. Verification procedures that will ensure proper monitoring of each CCP
6. Written procedures for employee training in HACCP plan procedures
7. A list of food service equipment that is used at each CCP

Identification of CCPs

- Stages of food preparation where critical control limits could be exceeded include:
 - Receiving
 - Cold Storage
 - Thawing
 - Preparation
 - Cooking
 - Hot Holding
 - Cooling
 - Reheating
 - Time-only Holding
 - Transportation

Critical Limits for CCPs

- A critical control limit is a minimum or maximum value at which a physical, chemical, or biological parameter must be controlled to minimize the risk that a potential food safety hazard may occur.
- Determine “critical limits” that could be exceeded for each CCP
 - Critical limits for receiving could include:
 - Cans are not dented, and packaging is not damaged, or
 - Refrigerated foods are 41 degrees or less, or
 - Food is not moldy, rotten, adulterated, or contaminated
 - Possible controls for critical limits during cold storage include:
 - Ensure refrigeration required foods are 41 degrees or less, or
 - Ensure ready to eat foods are not contaminated by raw product

This list is not all inclusive

Monitoring Procedures for CCPs

- Now that critical control points and critical limits have been identified, there needs to be a system of how these CCPs are monitored.
 - Monitoring procedures for receiving could include:
 - Packaging will be examined for integrity
 - Temperatures will be taken when product is received
 - Monitoring procedures for cold storage could include:
 - Temperature logs will be taken for each refrigeration unit at 2 hour intervals
 - Management will determine proper location for product storage

Corrective Action for CCPs

- Corrective actions must be taken when there is loss of control due to employee error, equipment malfunction, power failure, etc.
- If it is determined that a critical limit has been exceeded, immediate action must be taken to prevent food safety hazards.
 - For example, during a temperature check, a refrigerator is at 48 degrees, the maximum temperature a refrigerator can be is 41 degrees, what should be done?
 - If it is known that the walk in refrigerator was at 41 degrees 2 hours or less ago, then all product may be moved to a functioning refrigeration unit for rapid cooling.
 - If it has been more than 2 hours, or time is unknown, then food must be discarded.
- A HACCP plan should list out acceptable corrective actions for each Critical Control Point.

Verification Procedures for CCPs

- Each CCP must have a verification procedure that will ensure proper monitoring of critical limits.
 - For example, management will review temperature logs three times daily.
 - Calibration of cooking and holding equipment, and thermometers are checked daily.

Written HACCP Training Procedures

- A properly completed HACCP plan will not function correctly if employees do not know what a HACCP plan is or how it works.
- A HACCP plan must contain employee training procedures.
 - For example, “All employees will be required to review the HACCP plan and pass a quiz pertaining to its contents before being allowed to handle food.”
 - For example, “All employees will be aware of where the HACCP plan is at all times.”

List of Equipment at Each CCP

- Each CCP must have a list of equipment that may be implemented during this step.
 - Example: For a receiving step, a thermometer is necessary.
 - Example: For a cooking step, a thermometer, grill, utensils, and ventilation hood is used.

How is a HACCP Plan Assembled?

- Per COMAR 10.15.03, the person in charge shall construct a HACCP plan by listing, for each CCP:
 - Menu items controlled by the CCP
 - Equipment used; and
 - Monitoring, corrective action, and verification procedures; or
 - Another method that meets content requirements
- There are many possible layouts of HACCP plans.
- Each facility will have to determine which type of HACCP plan works best depending on the type of food a facility handles.
- Types of HACCP Plans include:
 - Flow Chart Method
 - Menu Based
 - Recipe Incorporation
 - Process Approach, etc

Menu Based HACCP Plan

- Although there are many HACCP plan methods, a menu based plan will be focused on for training purposes.
- In this plan, CCPs are identified and each CCP has it's own page of critical limits, monitoring, corrective actions, verification, and list of equipment.
 - In this method, critical limits are combined with monitoring procedures
 - A separate menu sheet lists each menu item and the CCPs that are implemented for each menu item

Menu Based HACCP Plan - Menu

- In order to complete a HACCP plan, a facility must first know what will be served and how each menu item will be made.
 - Provide complete menu
 - Provide description of food service systems that will be used
- For example, an Italian restaurant wants to serve meatballs, pasta with various sauces, steak, chicken, salmon, salad, and soup. This facility also plans to cater.
- This facility decides that it will use commercially prepared meatballs, salad dressings, and soup. Everything else will be made “from scratch”.
 - Food service systems would include:
 - Cook – serve
 - Cook – hot hold – serve
 - Cook – hot hold – cool – reheat – serve
 - Cook – cool – reheat – serve

Menu Based HACCP Plan - Menu

- Next, mark off which CCPs will be used with each menu item:

Menu Item	CCP #1 Receive	CCP #2 Cold Hold	CCP #3 Thaw	CCP #4 Cook	CCP #5 Prep	CCP #6 Hot Hold	CCP #7 Cool	CCP #8 Reheat	CCP #9 Transport
Broccoli and Cheese Soup	X	X	X	X	X	X			X
Italian Wedding Soup	X	X	X	X	X	X			X
Meatballs	X	X	X	X	X	X	X	X	X
House Salad	X	X			X				X
Caesar Salad	X	X			X				X
Handmade pasta	X	X		X	X				X
Steak	X	X		X	X				X
Chicken	X	X		X	X				X
Salmon	X	X	X	X	X				X
Meat Sauce	X	X		X	X		X	X	X
Alfredo Sauce	X	X		X	X		X	X	X
Marinara Sauce	X	X		X	X		X	X	X

Create the Content of the HACCP Plan

- For each critical control point identified in the menu spreadsheet, create a document containing:
 - Monitoring procedures that incorporate critical limits,
 - Corrective actions,
 - Verification procedures, and
 - A list of equipment used

HACCP Plan CCP - Receiving

CCP: Receiving (CCP # 1)

Monitoring:

- *Source is approved
- *Not adulterated; including food that contains any poisonous or deleterious substance, is diseased, contaminated, filthy, putrid, or decomposed or is otherwise unfit for human consumption
- *Cans are not swollen or dented
- *Frozen products are received frozen solid, and are moved to freezer immediately
- *Refrigerated products $\leq 41^{\circ}$ F, and are moved to cooler immediately
- *Shellfish tags and egg invoices/records must be kept on premises for 90 days

Corrective Actions:

- *Refuse delivery
- *Return food
- *Discard food

Verification:

- *Temperatures of refrigerated and frozen products will be checked with thermometer
- *Packaging and cans will be inspected for damage, contamination and general integrity
- *Produce will be examined for mold, pests or other sources of adulteration
- *Stem thermometer will be checked for calibration daily
- *Source of food will be checked for health department standards

Equipment:

- *Stem thermometer

HACCP Plan CCP – Cold Hold

CCP: Cold Storage (CCP # 2)

Monitoring:

- *Raw foods are stored according to final cooking temperature, and are separated from ready to eat foods
- *Refrigerated products $\leq 41^{\circ}$ F, frozen products are frozen solid
- *Food is placed to permit free circulation of cold air
- *Foods will be covered and labeled with product name and creation or expiration date
- *Food must be placed at least 6" off the ground in walk in refrigerators/freezers

Corrective Action:

- *Discard if food is $>41^{\circ}$ F for 2 hours or if time out of temperature is unknown
- *Do not refreeze thawed food, may be refrigerated if under 41° F
- *Separate raw foods from cooked and ready to eat foods IF contamination is not found. If contamination is found, discard contaminated items.
- *Label food (on side of container if lid is removable)

Verification:

- *Manager will check temperature of cold holding units at least two times a day (log is kept)
- *Refrigeration units will be maintained as specified by manufacturer
- *Thermometers will be calibrated and/or checked for accuracy daily or if unit is dropped
- *Management will check for proper food storage

Equipment:

- *Thermometers (walk in units have external, all others have internal), refrigerators

HACCP Plan CCP - Thawing

CCP: Thaw (CCP # 3)

Monitoring:

- *In refrigerator at $\leq 41^{\circ}$ F
- *Under clean running water $\leq 70^{\circ}$ F in a sanitized environment
- *Thawed as part of a cook step (cooked from frozen)

Corrective Action:

- *Discard food if product temperature for $>41^{\circ}$ F for >2 hours
- *Alter process (i.e. if food is on counter, move to refrigerator is still frozen)
- *Sanitize sink and equipment with 50-100 ppm chlorine or 200-400 ppm quaternary ammonia
- *Reduced oxygen packaged seafood is removed from package before thaw, or as stated on package directions

Verification:

- *Manager will monitor employees to ensure procedures are being followed
- *Temperatures will be checked with stem thermometer

Equipment:

- *Sink, Thermometer, Refrigerator

HACCP Plan CCP - Cooking

CCP: Cook (CCP # 4)

Monitoring: *See temperature/time cooking chart for more options

- *Internal temperature of chicken; at least 165° F for 15 seconds
- *Internal temperature of seafood and pork is at least 145° F for 15 seconds
- *Internal temperature of cooked pasta (contains eggs) is at least 155° F for 15 seconds
- *Ready to eat commercially made food cooked to at least 135° F (or as stated on package)
- *Undercooked steak may be served at customer request if ONLY whole muscle, intact beefsteak is prepared for immediate service and meat is seared continuously on both top and bottom reaching at least 145° F for 15 seconds and achieves a cooked color change on all external surfaces

Corrective Action:

- *Continue heating until internal temperature is attained
- *Discard food
- *If cooked to order steak is served, display written statement visible to customers: “Consuming raw or undercooked animal foods may increase your risk of contracting a food borne illness, especially if you have medical conditions”

Verification:

- *Ensure internal temperature has been reached by use of stem thermometer
- *Cooking equipment will be checked for calibration and maintained per manufacturer specs

Equipment:

- *Stem thermometer, ventilation hood, grill, flat top, stovetop, oven

HACCP Plan CCP - Preparation

CCP: Preparation, ready to serve (CCP # 5)

Monitoring:

- *Employee hygiene is maintained, i.e. hands are washed, hair restraint used
- *Employees with infection or diarrhea are excluded in accordance with COMAR 10.06.01
- *Equipment cleaned and sanitized
- *Hand contact is minimized; gloves are used for handling ready to eat products
- *Time of food at ambient temperature less than 1 hour
- *Pre-chill ingredients to $\leq 41^{\circ}$ F for cold hold recipes
- *Raw fruits and vegetables are washed with water to remove any debris and contamination

Corrective Action:

- *Thoroughly wash hands for 20 seconds with soap and warm water
- *Utilize gloves
- *Sanitize equipment with 50-100 ppm chlorine (75°) or 200-400 ppm quaternary ammonia
- *Discard food if $>41^{\circ}$ F for 2 or more hours, or if time is unverifiable and if food is contaminated

Verification:

- *Manager will ensure employees are following proper food handling procedures
- *The time that food is left at room temperature will be monitored

Equipment:

- *Stem thermometer, utensils, hand sink, soap, paper towels, gloves, prep table, hair restraint pans, pasta maker, refrigerator

HACCP Plan CCP – Hot Holding

CCP: Hot Holding (CCP # 6)

Monitoring:

- *Food is held at $\geq 135^{\circ}$ Fahrenheit
- *Food is kept covered when not in use
- *Food is heated/cooked on stove before placing in soup kettle

Corrective Action:

- *Food is rapidly reheated to $\geq 165^{\circ}$ F and held at $\geq 135^{\circ}$ F if time out of temperature is ≤ 2 hours
- *Discard food $< 135^{\circ}$ F for 2 hours or more

Verification:

- *Temperature of food is checked with stem thermometer
- *Temperature logs are kept and reviewed by management

Equipment:

- *Steam table, stem thermometer, soup kettle

HACCP Plan CCP - Cooling

CCP: Cooling (CCP # 7)

Monitoring:

- *Reduce food mass by separating foods into smaller, or thinner portions in shallow pans <3" in depth
- *Refrigerate (loosely covered or protected from contamination)
- *Cool from 135° F to 70° F in 2 hours and from 70° F to ≤41° F in additional 4 hours
- *Products will not be allowed to cool at room temperature

Corrective Action:

- *Rapidly reheat to ≥165° F if not cooled within allotted time
- *Adjust cooling method (i.e. product is still at 100° F after cooling for 1.5 hours, put product on ice and stir with ice wand)
- *Discard product

Verification:

- *Check temperature with stem thermometer at 1.5 and 6 hours
- *Ensure cooling products are in shallow pans and stirred as frequently possible

Equipment:

- *Stem thermometer, refrigerator, ice wand, pans

HACCP Plan CCP - Reheat

CCP: Reheat (CCP # 8)

Monitoring:

- *Potentially hazardous food is rapidly reheat to $\geq 165^{\circ}$ F for 15 seconds in ≤ 2 hours
- *Food is reheated on stove, not on steam table

Corrective Action:

- *Continue heating until temperature is attained
- *Discard food

Verification:

- *Temperature taken at coolest part of food with stem thermometer before product served
- *Time of reheat period will be monitored

Equipment:

- *Stove, stem thermometer, microwave

HACCP Plan CCP - Transportation

CCP: Transportation (CCP # 9)

Monitoring:

*Food is held at proper temperatures during and after transport: frozen products are kept frozen; refrigerated products $\leq 41^{\circ}$ F; hot hold $\geq 135^{\circ}$ F; pasteurized crab and reduced oxygen packaging products with no other method of bacteriological barrier $\leq 38^{\circ}$ F

*If transported on ice; ice must be from approved source

*Food must be covered and protected from adulteration during transport

Corrective Action:

*Discard

*Rapidly reheat hot hold items to $\geq 165^{\circ}$ F and hold at $\geq 135^{\circ}$ F if time out of temperature is ≤ 2 hours

*Rapidly re-chill cold held items to $\leq 41^{\circ}$ F or less if time out of temperature is ≤ 2 hours

Verification:

*Check temperature of product on departure and arrival

Equipment:

*Cooler, ice maker, thermometer, catering vehicle

HACCP Plan – Employee Training

- Now that the HACCP plan is complete, employee training protocol is determined.

“I, John Doe, manager of My Italian Place, license #0000, agree to provide employee training in HACCP plan procedures by teaching each employee on how to refer to the HACCP plan and use it on a daily basis. After reviewing the contents of the HACCP plan, each employee will be required to take a quiz and pass before each employee is allowed to handle food. All employees will be aware of the location of the HACCP Plan. Employees will be required to attend monthly training that incorporate the contents of the HACCP Plan.”

HACCP Submittal

- Now that the HACCP Plan is complete, it must be submitted to the Health Department for review.
 - If every thing looks okay, the HACCP plan will be approved.
 - If there are corrections to be made, the sanitarian reviewing your plan will contact the submitter to modify the HACCP plan.
- Once your HACCP plan is submitted and approved, keep a copy in the food preparation area.
 - Remember, the HACCP plan is for restaurant use, it is meant USED.
 - If necessary, the HACCP plan may be translated by management to another language for ease of use by employees.

For More Information

- Blank HACCP forms can be found at:
www.calverthealth.org

- Additional information:

[DHMH Guidelines for Submitting a HACCP Plan](#)

[Association of Food and Drug Officials HACCP Guidelines](#)

[National Food Service Management Institute HACCP Based SOPs](#)

[FDA/NACMCF HACCP Principles and Application Guidelines](#)