



STATE OF MARYLAND

DHMH

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6 St. Paul Street, Suite 1301 • Baltimore, Maryland 21202

Martin O'Malley, Governor – Anthony G. Brown, Lt. Governor – John M. Colmers, Secretary

Office of Food Protection and Consumer Health Services

Alan Taylor, R.S., Chief

Guidelines for Submitting a Hazard Analysis Critical Control Point (HACCP) Plan

Health-General Article, §21-321, Annotated Code of Maryland, and the Code of Maryland Regulations (COMAR) 10.15.03 Food Service Facilities require that plans and specifications be submitted to the Department when a person proposes to construct, remodel or alter a food establishment, or convert or remodel an existing building for use as a food establishment. Plans and specifications for the building and equipment, and information regarding the foods to be prepared, processed, or manufactured are required. This information will be used to classify the facility as high, moderate, or low priority. Definitions of priority assessment levels are found in COMAR 10.15.03.33C.

A HACCP plan is required for all high or moderate priority facilities. *Facilities which serve only hand dipped ice cream or commercially packaged potentially hazardous foods do not require a HACCP plan.* The following information is intended to assist you in providing the necessary information for both priority assessment and HACCP plan development.

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A. Priority Assessment Information

1. *Menu or foods* – Provide a copy of the menu or a written description of the foods to be prepared and served.
2. *Food service system* – Specify the food preparation and service systems you will use, i.e. cook-serve, cook-chill-reheat-hot hold-serve, cold hold-serve.
3. *Population served* – Specify whether you serve food in a health care facility, as defined in COMAR 10.15.03.02B(38).

B. General Food Handling Information and Procedures (only required for facilities classified as “high” or “moderate”):

1. Describe how you will ensure that all foods are obtained from approved sources.
2. Specify how cross-contamination from raw to cooked or ready-to-eat foods will be prevented.
3. Indicate how frozen potentially hazardous food will be thawed.
4. Indicate how potentially hazardous food will be cooled, i.e. ice baths, shallow pans, rapid chill.
5. List the foods or categories of foods that will be prepared more than 12 hours in advance of service.
6. Specify whether any prepared foods are distributed off-premises.
7. Specify whether any refrigerated foods are received which require storage temperatures below 41°F.
8. Indicate whether reduced oxygen packaging of food, as defined in COMAR 10.15.03.02B(63), will be conducted onsite.
9. Include specific information for any processes or procedures which incorporate:
 - “Time-only” control (see COMAR 10.15.03.08),
 - “Pooling” of eggs (see COMAR 10.15.03.09D), and/or
 - Serving raw or undercooked animal foods (see COMAR 10.15.03.10 C, D & F).

C. HACCP Plan Required Contents

The plan must include:

1. Identification of Critical Control Points (CCP). CCPs generally include cooking, cooling, reheating, cold holding, and hot-holding, but other steps may be included if needed for a specific food. Note that cold food preparation, like chopping, mixing and slicing, *is not* a CCP step. Hazards are controlled during those processes by following Good Retail Practices (GRPs), sometimes referred to as Standard Operating Practices (SOPs).
2. Critical limits for each CCP.
3. Monitoring procedures for each CCP.
4. The corrective action that will be taken if there is a loss of control at a CCP due to such factors as employee error, equipment malfunction, or power failure
5. Verification procedures that will ensure proper monitoring of each CCP such as calibration of cooking and holding equipment and thermometers, and maintenance and review of records such as temperature logs. Using logs for record keeping is strongly encouraged, but not required, as long as the facility can demonstrate that temperatures are routinely monitored, as described in the HACCP plan, and that specified corrective actions are taken when critical limits are not met.
6. A list of equipment used to support the proposed food service systems and maintain control at each CCP.
7. Written procedures for employee training on HACCP procedures (see attached example in section "F").

D. HACCP Plan Formatting Instructions

The HACCP plan for your facility should be developed in a format which is easy for your employees to use. Once approved, this document must be readily available in the food preparation area of each facility. Examples of acceptable methods include:

1. Listing each CCP separately, with the menu items that utilize the CCP, the critical limits, monitoring procedures, corrective action, verification methods for that CCP, and the equipment used to control the CCP (see attached example #1),
2. Using a HACCP flow diagram and chart for selected menu items or groups of menu items (see attached example #2),
3. Incorporating each CCP and the monitoring, corrective actions, and equipment used, directly into the recipe or preparation instructions (see attached example #3), or
4. Using the "Process Approach" as advocated by the US Food and Drug Administration. (see attached example #4).

E. Obtaining Maryland Retail "Food Service Facility" Regulations (COMAR 10.15.03, effective 12/17/07):

- Via online access- go to this link and follow the directions below:

<http://www.dsd.state.md.us/comar/comar.htm>

1. Click on the 3rd or bottom red circle on the main search page of the COMAR website (see link above) and search by "Access through table of contents structure",
2. From the drop down list, select: Title 10 "Department of Health and Mental Hygiene",
3. Click on: Subtitle 15, "Food",
4. Click on: 10.15.03 "Food Service Facilities". From this page, you must click on each of the 39 individual regulations separately to view the entire text.

- For a paper copy- contact the local health department in your area.

F. Model HACCP Plan Formats (Examples #1-4) and Sample Written Employee Training Procedure (see following pages):

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Model HACCP Plan - Example #1 (Listing CCPs Separately)
(shown for "Cooling" step)

CCP: COOLING

CCP and Critical Limits:

Foods are cooled from 135° F to 70° F within 2 hours, and from 70° to 41° F within an additional 4 hours.

Monitoring:

Internal product temperature of food is taken at 1.5 and 6 hours with a metal stem thermometer.

Corrective Actions:

If food is not $\leq 70^{\circ}$ F at 1.5 hours, food will be iced, stirred, or broken into smaller containers. Food that has not reached 41° F within 6 hours will be discarded.

Verification:

Review cooling logs. (Note: An alternate method would be for the supervisor to visually observe that temperatures are taken at the proper times and, if not taken or not satisfactory, that corrective actions listed above are taken.)

Equipment:

Blast chiller, Walk-in cooler

Menu items using this CCP:

Fried chicken (cook, hot hold, ***cool***, prepare for salad, cold hold, serve)

Macaroni and Cheese (cook, hot hold, ***cool***, reheat, hot hold, serve or discard)

Mashed Potatoes (cook, hot hold, ***cool***, reheat, hot hold, serve or discard)

Rice (cook, hot hold, ***cool***, reheat, hot hold, serve or discard)

Model HACCP Plan - Example #1 (continue, shown for "Cooking" step)

CCP: COOKING

CCP and Critical Limits: Foods are cooked to temperature below for specified time:

Shell eggs cooked for immediate service, fish, meat, and all other potentially hazardous food not specified below cooked to **145°F for 15 seconds**.

Shell eggs cooked other than for immediate service, ground fish and meats, commercially raised game animals, and injected meats cooked to **155°F for 15 seconds**.

Whole roasts (for rare roast beef) cooked to **130°F and held for at least 112 minutes**.

Poultry; stuffed meat, stuffed pasta or poultry; or stuffing containing fish meat, or poultry cooked to **165°F for 15 seconds**.

Raw animal foods cooked to **165°F and held for 2 minutes**, when using microwave oven for cooking.

Fruits, vegetables, and commercially processed food for hot holding cooked to at least **135°F**.

Undercooked seared beefsteak cooked to **145° F for 15 seconds, must have a "cooked" color change on surface**, and regulatory approval of process used.

Monitoring:

Internal product temperature of food is taken at completion of cooking time using a thermocouple with a metal probe.

Corrective Actions:

If food has not reached required temperature for the specified time, continue cooking. Recheck temperature after additional cooking to make sure standard is reached.

Verification:

Review cooking temperature logs. (Note: An alternate method would be for the supervisor to visually observe that temperatures are taken at the proper times and, not satisfactory, food is returned to the cooking equipment until the required time and temperature standards are met.)

Equipment: Oven, Range

Menu items using this CCP:

Fried chicken (**cook**, hot hold, cool, prepare for salad, cold hold, serve)

Macaroni and Cheese (**cook**, hot hold, cool, reheat, hot hold, serve or discard)

Mashed Potatoes (**cook**, hot hold, cool, reheat, hot hold, serve or discard)

Rice (**cook**, hot hold, cool, reheat, hot hold, serve or discard)

HACCP Plan (Example #1 Form)

CCP: _____

CCP and Critical Limits:

Monitoring:

Corrective Actions:

Verification:

Equipment:

Menu items using this CCP:

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Model HACCP Plan - Example #2 (Chart Method)

Facility: ABC Restaurant **Preparer:** Don Smith **Date:** 00/00/00

Food Item: Chicken Noodle Soup

Flow diagram or descriptive narrative of the food preparation steps:

Cook chicken (CCP 1) > Prepare soup > Cook (CCP 1) > Hot Hold (CCP 2) > Cool (CCP 3) > Reheat (CCP 4) > Hot Hold (CCP 2) > Discard

HACCP Chart

Critical Control Points (CCP)	Monitoring Procedures	Corrective Action
<p style="text-align: center;">CCP 1</p> <p>Cook chicken to a minimum of 165° F. Heat soup to a minimum of 165° F.</p>	Check internal temperature.	Continue to cook until food reaches 165° F.
<p style="text-align: center;">CCP 2</p> <p>Hot Hold soup at a minimum of 135° F.</p>	Check internal temperature of the soup every 2 hours.	Rapidly reheat soup to 165° F if found out of temperature for less than 2 hours. Discard if greater than 2 hours.
<p style="text-align: center;">CCP 3</p> <p>Cool soup from 135° F to 70° F within 2 hours, and from 70° F to 41° F within an additional 4 hours.</p>	Check internal temperature of soup at 1.5 and six hours.	<p>If soup has not reached 70° F in the first 1.5 hours, separate into smaller containers and place in freezer.</p> <p>If soup has not cooled to 41° F within 6 hours, discard.</p>
<p style="text-align: center;">CCP 4</p> <p>Reheat cooled soup as needed to 165° F.</p> <p>(Hot hold for service using CCP 2 above. Any soup remaining on steam table at end of day will be discarded.)</p>	Check internal temperature.	Continue to reheat until food reaches 165° F.

Verification: Monitor temperature logs, and/or observe temperature monitoring and calibration practices.

Equipment utilized at each Critical Control Point listed in above chart:

- CCP 1: Oven, Range
- CCP 2: Soup wells on steam table
- CCP 3: Walk-in refrigerator, freezer
- CCP 4: Oven, Range

HACCP Plan (Example #2 Form)

Facility:

Preparer:

Date:

Food Item:

Flow diagram or descriptive narrative of the food preparation steps:

HACCP Chart

Critical Control Points (CCP)	Monitoring Procedures	Corrective Action

Verification:

Equipment utilized at each Critical Control Point listed in above chart:

CCP 1:

CCP 2:

CCP 3:

Model HACCP Plan - Example #3 (Recipe Method)

Menu Item: Hamburger Pie

<i>Ingredients</i>	<i>Procedures</i>	<i>CCP?</i>	<i>Monitoring Procedure</i>	<i>Corrective Action</i>	<i>Verification Procedures</i>
10 lbs ground beef	Thaw meat in walk-in cooler	No			
1 lb each onions, celery, green pepper. 2 pounds American cheese	Wash and dice. Use immediately or store in cooler. Shred cheese and store in cooler until needed.	No			
¼ gallon tomato soup, 2 tsp. Worcestershire sauce, 2 T salt, 1 T pepper	Braise beef, onions and peppers on stove until the mixture reaches 155° F. Add remaining ingredients and return pot to 155° F.	Yes	Monitor internal temperature with stem thermometer periodically during cooking process.	Continue cooking.	Manager checks thermometer calibration log and observes temperature monitoring by employees.
1 bag Mashed Potato Flakes	Prepare potatoes according to directions on bag. Spread into pans. Top with beef mixture and cheese.	No			
	Bake pie in convection oven at 325° F for approximately 1 hour, until internal temperature reaches 155° F.	Yes	Monitor internal temperature with stem thermometer periodically during cooking process.	Continue cooking.	Manager checks thermometer calibration log and observes temperature monitoring by employees.
	Place on steam table for hot holding at 135° F.	Yes	Check product internal temperature hourly.	Discard if product found below 135° F for more than 2 hours. If below 135° F for less than 2 hours, rapidly reheat using procedure below.	Manager checks thermometer calibration log and observes temperature monitoring by employees.
	Cool by placing un-served product in shallow pans with product thickness of no more than 2". Cool in blast chiller from 135° F to 70° F within 2 hours, and from 70° F to 41° F within an additional 4 hrs.	Yes	Check product internal temperature every 2 hours.	Use ice bath if food has not cooled to 70° F within 2 hours. Discard product that does not reach 41° F within 6 hours.	Manager observes procedure and reviews temperature logs.
	Reheat product in convection oven to 165° F within 2 hours.	Yes	Check product internal temperature	Continue cooking.	Manager checks thermometer calibration log and observes temperature monitoring by employees.

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HACCP Plan (Example #3 Form)

Menu Item: Hamburger Pie

<i>Ingredients</i>	<i>Procedures</i>	<i>CCP?</i>	<i>Monitoring Procedure</i>	<i>Corrective Action</i>	<i>Verification Procedures</i>

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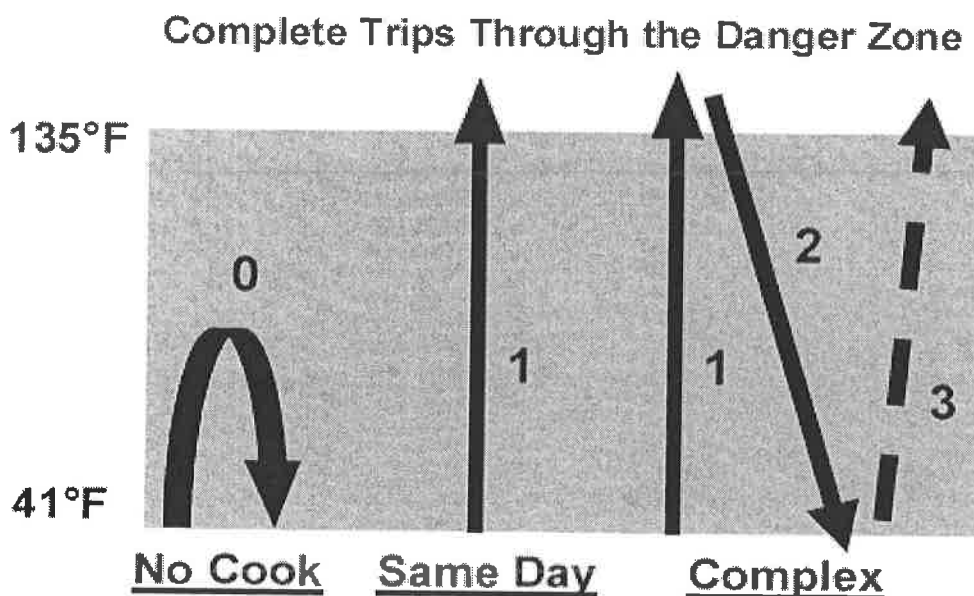
HACCP Plan - Example #4 (Process Approach)

Source- 2005 FDA Model Food Code, Annex 4, Section 4(C)

Most food items produced in a retail food service establishment can be categorized into one of three preparation processes based on the number of times the food passes through the temperature danger zone between 41°F and 135°F:

- **Process 1: Food Preparation with No Cook Step**, sample flow: **Receive → Store → Prepare → Hold → Serve** (other food flows are included in this process, but there is *no cook step* to destroy pathogens)
- **Process 2: Preparation for Same Day Service**, sample flow: **Receive → Store → Prepare → Cook → Hold → Serve** (other food flows are included in this process, but there is *only one trip* through the temperature danger zone)
- **Process 3: Complex Food Preparation**, sample flow: **Receive → Store → Prepare → Cook → Cool → Reheat → Hot Hold → Serve** (other food flows are included in this process, but there are always *two or more complete trips* through the temperature danger zone)

A summary of the three food preparation processes in terms of number of times through the temperature danger zone can be depicted in a Danger Zone diagram. Although foods produced using process 1 may *enter* the danger zone, they do not pass all the way through it. Foods that go through the danger zone only once are classified as Same Day Service, while foods that go through more than once are classified as Complex food preparation.



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Model HACCP Plan - Example #4 (Sample Charts)

Process #1, Food Preparation with no Cook Step

Menu Items: Tuna and Chicken Salads, Cold Meat Sandwiches, Ice Cream and Pie, and Milkshakes

CCP Procedures	Monitoring	Corrective Action	Verification
Cool in walk-in refrigerator to or below 41°F within 4 hours, keep in cold storage at 41°F until service.	Check internal product temp. at 2 and 4 hours.	Use ice bath if food has not cooled to 41°F within 2 hours. Discard product that does not reach 41°F within 4 hours.	Manager review of temperature monitoring practices and calibration logs.
Cold hold at 41°F in sandwich prep unit for service.	Check internal product temp. every 2 hours.	Discard product that is found out of temperature for more than 2 hours, (or if time out of temperature cannot be determined).	Manager review of temperature monitoring practices and calibration logs.

Process #2, Food Preparation for Same Day Service (Refrigerated storage per Process #1)

Menu Items: Baked Chicken, Roast Beef, Fish Filets, Cooked Vegetables

CCP Procedures	Monitoring	Corrective Action	Verification
Cook (oven, stovetop, grill, or fryer) to: Chicken 165°F Ground Beef 155°F Whole muscle meat, fish 145°F	Cooks take random internal final cook temperatures	Continue cooking until final required cook temperature is achieved	Manager review of production logs.
Hot hold on steam table at 135°F or higher. (Any food left on the steam table at the end of the day will be discarded.)	Check product internal temperature every 2 hours.	Bring food temperature rapidly up to 165°F, if food is out of temperature <2 hours. Discard if >2 hours	Manager review of temperature monitoring practices or logs.

Process #3, Complex Food Preparation (Cold store per Process #1, cook and hot hold per Process #2)

Menu Items: Soups, Lasagna, Meatballs

CCP Procedures	Monitoring	Corrective Action	Verification
Place un-served product in shallow pans with product thickness of no more than 2". Cool in walk-in refrigerator from 135°F to 70°F within 2 hours, and from 70°F to 41°F within an additional 4 hours.	Check internal temperature of food at 1.5 and 6 hours.	If product has not reached 70°F in the first 1.5 hours, separate into smaller containers and place in freezer. If food has not reached 41°F within 4 additional hours, discard.	Manager review of temperature monitoring practices or logs.
Reheat food in convection oven or microwave to 165°F within 2 hours.	Check internal food temperature.	Continue to reheat until 165°F is reached.	Manager review of production logs

HACCP Plan (Example #4 Forms)

Process #1, Food Preparation with no Cook Step

Menu Items:

<i>CCP Procedures</i>	<i>Monitoring</i>	<i>Corrective Action</i>	<i>Verification</i>

Process #2, Food Preparation for Same Day Service

Menu Items:

<i>CCP Procedures</i>	<i>Monitoring</i>	<i>Corrective Action</i>	<i>Verification</i>

Process #3, Complex Food Preparation

Menu Items:

<i>CCP Procedures</i>	<i>Monitoring</i>	<i>Corrective Action</i>	<i>Verification</i>

WRITTEN PROCEDURES FOR EMPLOYEE HACCP TRAINING (SAMPLE)

All employees will be trained to use the approved HACCP plan prior to beginning employment and periodically after that. Training will include identification of the processes that are critical control points, how these processes will be monitored, and what corrective actions must be taken when critical controls are violated. The approved HACCP plan will be available in the food preparation area at all times.

Food temperature logs* will be used to monitor product temperatures during the preparation process. These completed logs will be maintained in the food preparation area, and held for review by management, as part of the HACCP monitoring system.

Training in basic sanitation will include hand washing procedures and methods for cleaning and sanitizing utensils, equipment, and food preparation surfaces. All employees will be trained to use and calibrate a metal stem thermometer, and will be required to check and re-calibrate thermometers weekly.

**Note- Use of logs for record keeping is strongly encouraged, but not required, as long as the facility can demonstrate that temperatures are routinely monitored, as described in the HACCP plan, and that specified corrective actions are taken when critical limits are not met.*

Maryland HACCP PLAN GUIDELINES, November, 2008

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