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Food Service Contract Management



HACCP Hazard Analysis Critical Control Point



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1

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The importance of providing safe food to our soldiers cannot be emphasized enough. Preventing foodborne illnesses within the Army Food Service Program is the number one goal of the Army Food Service Sanitation Program; safety must come before quality. Simply knowing food safety standards may not be enough; a risk management system should be employed to ensure food safety standards are being applied. The Hazard Analysis Critical Control Point (HACCP) is a system of control steps that monitors the safe flow of food through an operation – receiving, storage, thawing, preparation, cooking, holding, cooling, reheating, and service. Only through commitment from management can HACCP or other risk management programs be successful. A commitment by management will indicate an awareness of the benefits and costs of an applied risk management system. Benefits not only include an enhanced assurance of food safety, it provides for better use of resources and timely response to problems in our food operations.



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Objectives

- ◆ Define HACCP
- ◆ Understand HACCP Principles
- ◆ Identify Control Points & Critical Control Points
- ◆ Know Contract Requirements



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2

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What is HACCP?

A safety system designed to protect foods as they flow through a facility (*receipt to consumption*)

Aligns Processes, Procedures, & Behaviors with Prevention

- **Preventive** - Rather than Reactive
- **Rational** - Based on Historical Data
- **Science Based** - Time & Temp Studies
- **Continuous** - Problems Detected & Corrected
- **Comprehensive** - Ingredients & Processes
- **Commitment** - Management & Staff

Manager's primary food safety tool.

Ensures production of safe food.

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HACCP is a safety system that is designed to protect foods as they flow through a food service facility. It is not a stand alone system, but rather a preventive and proactive approach to managing foods safely.

A HACCP program aligns processes, procedures and individual behaviors with prevention.

The principles of HACCP have been tested and proven to be effective. Time and temperature studies have found that existing microbial contamination of food can be mitigated (*the potential hazard reduced*) if proper controls are in place and enforced from the point of receipt through the time of consumption.

HACCP is effective because it is a continuous process that is comprehensive in nature. It involves personnel training, food handling practices, facility sanitation and maintenance, and management's commitment to prioritize needs and resources.

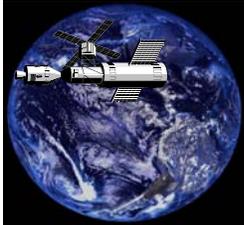


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History of HACCP

- 🌐 **Pioneered in the '60's by the Pillsbury Co.**
- 🌐 **Designed to assure NASA safe food**



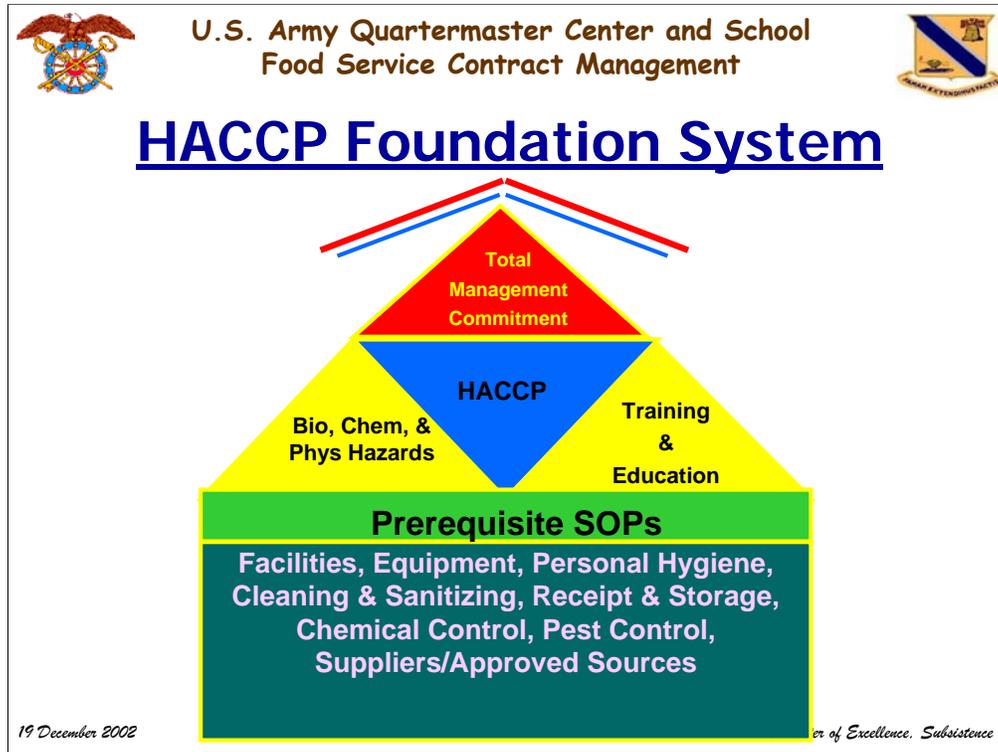


- Recognized internationally as an effective system of controls.
- Incorporated in FDA Model Food Code & new TB MED 530.

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4
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The Hazard Analysis Critical Control Point is a prevention-based food safety system pioneered in the 1960's by the Pillsbury Company with the cooperation of the National Aeronautic and Space Administration (NASA) in support of the United States space program. The HACCP system provided nearly a 100 percent assurance that foods prepared for astronauts was free from contamination by bacterial and viral pathogens, toxins, and chemical or physical hazards that could cause illness or injury. The fundamentals of a HACCP system “requires food establishments to analyze preparation methods in a rational, scientific manner in order to identify critical control points and to establish critical limits and monitoring procedures” (*FDA Food Code*).

Since its inception, the HACCP system has been recognized worldwide by the commercial food industry as an effective food safety system. Federal agencies, such as the FDA and the U.S. Department of Agriculture (USDA), have mandated HACCP systems for meat and poultry processing which have proven to be effective. In 1999, the FDA updated the model Food Code, recommending the application of HACCP principles in food establishments and as part of state or local inspection processes. The Food Code cites that a HACCP system “clearly identifies the food establishment as the final party responsible for ensuring the safety of the food it produces” (*FDA Food Code*). Furthermore, adopting a HACCP approach during the inspection process provides regulators with a comprehensive look at current and past facility food safety compliance versus a “snapshot of conditions at the moment of the inspection” (*FDA Food Code*). The Food Code, however, is “neither federal law nor federal regulation and is not preemptive...[It becomes law when] adopted by federal bodies for use within federal jurisdictions” (*FDA Food Code*). Many agencies, including the U.S. Army, that have elected to adopt the standards of the Food Code have imposed requirements for food service supervisory personnel to be



This illustration shows that HACCP is a comprehensive system with many key pieces. All of the pieces need to be in place in order for the system to function.

- Management commitment
- Personnel training and education on food safety and sanitation standards, as well as HACCP principles
- Identification of all potential biological, chemical, and physical hazards throughout the flow of food in the facility
- Prerequisite SOPs: managing work orders; calibration of equipment; personal hygiene and health reporting; cleaning and sanitizing schedules and chemical usage; receipt and storage practices; HAZCOM for chemical control and worker handling; procedures for integrated pest management; corrective actions when a food safety standard is not achieved; etc...



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HACCP Terms

Risk - Probability that conditions will lead to a hazard.

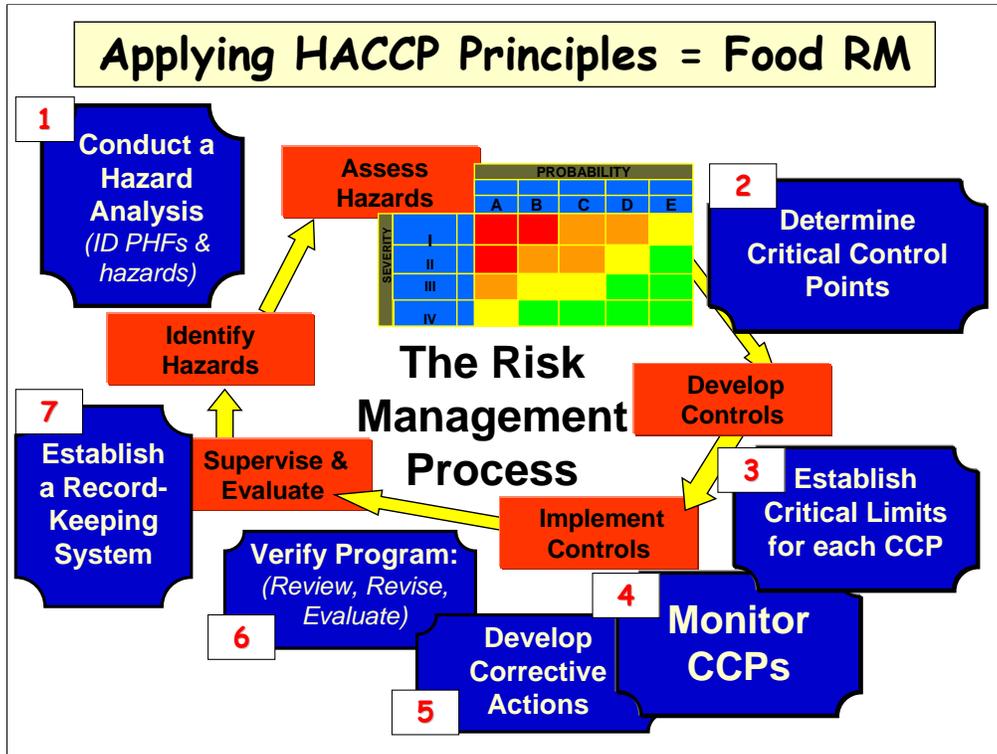
Control Point - Any step at which biological, chemical, or physical factors can be controlled.

Critical Control Point (CCP) - An Essential Point at which Control can be Applied so that a Food Safety Hazard can be PREVENTED, ELIMINATED, or REDUCED to an Acceptable Level.

CCP – The last step in the flow of food where a hazard can be controlled.

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Here are some basic terms and definitions to help us understand the HACCP process.



Remember, HACCP is simply applying the risk management principles outlined in FM 100-14. The steps may be labeled differently, but the process is still the same.

- [Identify and Assess the Hazard] -- Conduct a hazard analysis
- [Develop Controls] -- Determine critical control points; Establish critical limits
- [Implement Controls] – Monitor CCPs; Develop corrective actions
- [Supervise & Evaluate] – Verify the program; Establish a record keeping system

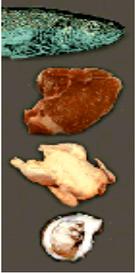


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Step 1: Hazard Analysis



- ◆ Examine Menu
(*starting point*)
- ◆ Identify Potentially Hazardous Foods
- ◆ Assess Hazards
 - Determine limitations (*equipment & staff*)
 - Examine recipes for clarity and completeness
 - Identify specific hazard (*type of bacteria*)



- ◆ Chart the Flow of Food
 - Receive
 - Store
 - Prepare
 - Cook
 - Cool
 - Reheat
 - Hot Hold
 - Serve

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8

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Conduct Hazard Analysis

In developing a food safety system, you need to identify the hazards that exist in the flow of foods in your operation from receiving to serving.

Hazards include:

pathogens or toxins present in food when you receive them,

- pathogens that may be introduced during preparation (example: using a raw animal food as one ingredient),
- pathogen growth or toxin production during storage, preparation, or holding.
- pathogens or toxins that survive heating, and
- contaminants, (i.e., pathogens, chemicals, physical objects), that are introduced to food by food workers or equipment.

By identifying the hazards, we will be able to determine which control points are CRITICAL! Also, knowing the specific bacterial hazards, we can determine the CRITICAL LIMITS.



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Process Approach to HACCP

Typical Food Processes:

1. **Receive - Store - Prepare - Serve (No Cooking)**
2. **Receive - Store - Prepare - Cook - Hold - Serve**
3. **Receive - Store - Prepare - Cook - Hold - Serve - Cool - Re-heat - Hold - Serve (Leftovers)**

- ◆ Review all recipes
- ◆ Make a chart of the food flow processes
- ◆ Group items with similar flow processes
- ◆ List the hazards at each step in the flow chart
- ◆ Mark the CCPs in the flow chart

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9

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HACCP is a very easy tool to apply to food processors which is one of the reasons the government has been able to mandate it. Most producers are handling only one product, like beef or milk. **Now in a food service facility numerous foods are being worked together to produce the meal; therefore, conducting a hazard analysis using the methods or processes common to specific operation seems to work quite well. This is called the process approach.**

What are some typical food flow processes?

Overview of the Process Approach

The process approach to the use of HACCP principles can best be described as dividing the many flows in an establishment into broad categories, analyzing the risks, and placing managerial controls on each grouping. The food that flows through retail food establishment operations can be placed into the three following processes:

Your HACCP system must provide food safety controls for all hazards within each of these processes. Some operational steps, such as cooking, require procedures to control various hazards related to several different products. Therefore, a single operational step may have multiple control limits for multiple, product-specific hazards. For example, at the cooking step, poultry requires a final internal cooking temperature of 165°F for 15 seconds to control for Salmonellae. Ground beef, however, requires a final cooking temperature of 155°F for 15 seconds to control for *E. coli* 0157:H7.

At the same time, some process steps, such as refrigerated storage, may encompass food safety procedures and critical limits that apply to all foods at that point in the flow of food.

Based on this understanding, you can blend a product-specific or menu-item HACCP approach into a process-oriented approach. Controlling the hazard within each of these processes is equivalent to preparing a HACCP plan for each individual product, **often a time- and labor-intensive job.**

Prelude to Step 2

Determine Control Points

Considerations during the flow of food

RECEIVING: Temperature of perishable products

STORING: Time-Temperature

PREPARING: Thawing process; Hand washing

COOKING: Internal cooking temperature

HOLDING: Temp of holding unit (140 °F)

SERVING: Post-cooking contamination

COOLING: Product density

REHEATING: Equipment; 165 °F w/in 2 hrs

Prior to determining your critical control points, you must establish your control procedures for each control point in the flow of food. Here are some considerations.



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Step 2: Identify the CCPs

...in the flow of food.

| At this step, can... | Can the identified hazard be... |
|---|--|
| <ul style="list-style-type: none"> → Food become contaminated? → Contaminants increase? → Contaminants survive? | <ul style="list-style-type: none"> → Prevented, eliminated, or reduced by an operation taken before, during, or after this step? → Monitored? → Measured? How? → Documented? |

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11

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A CCP is the last step in the flow of food where biological hazards, such as bacteria, can be prevented, eliminated or reduced to a safe level. If contaminants can be destroyed or reduced to safe levels at this point and you can answer yes to all of the other questions at this particular step in the flow of food, then this point is probably your CCP.

A no response means that there is probably another point in the flow of that particular food item that will better control or reduce the hazard.

Most flow process begin at receipt and end at cooking. Cooking is the CCP because bacteria is destroyed at this stage. All point of food handling prior to cooking can only control the growth of bacteria.

If hot foods will be retained as leftovers, Cooling also becomes a CCP because rapid cooling is crucial to preventing the growth of new bacteria introduced to food by worker's hands and preventing residual bacterial spores from reverting back to a living growth form.

Reheating leftovers is also considered a CCP because it provides the same level of control as Cooking.

A CCP for ready to eat foods that are commercially prepared and need no further cooking would be Storing or if frozen, Thawing. These are the only points from



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Step 3: Establish Critical Limits

Can be immediately monitored by
Measurement or Observation.

- ◆ Critical Limits for CCPs must be Specific.
- ◆ Measurements to consider:
 - ◆ TEMPERATURE (internal product)
 - ◆ TIME (PHFs held in TDZ)
 - ◆ Chlorine Concentration (ppm)
 - ◆ pH

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A critical limit is a maximum and/or minimum value to which a biological, chemical or physical parameter must be controlled at a CCP to prevent, eliminate or reduce to an acceptable level the occurrence of a food safety hazard. A critical limit is used to distinguish between safe and unsafe operating conditions at a CCP.

Critical Limits are standards that are employed at each control point.

Each CCP will have one or more control measures to assure that the identified hazards are prevented, eliminated or reduced to acceptable levels. Each control measure has one or more associated critical limits. Critical limits may be based upon factors such as: temperature, time, physical dimensions, humidity, moisture level, water activity (a), pH, and available chlorine. They may be applied in the following categories: handwashing, personal hygiene, cleaning & sanitizing, storage, thawing, preparation, cooking, holding, serving, cooling, and reheating.

Critical limits must be scientifically based.

The critical limits and criteria for food safety may be derived from sources such as TB MED 530, Food Service Field Manuals, regulatory standards and guidelines, literature surveys, experimental results, and experts.



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Step 4: Monitoring Procedures

**One of the critical factors in controlling
bacteria in food is controlling
temperature**

- ◆ **What will be monitored?**
- ◆ **How will it be monitored?**
- ◆ **Who will monitor? How often?**

**Determines loss of control and
when a deviation has occurred.**



**The only reliable way to ensure safety and to
determine the "doneness" of most foods.**

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13
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Monitoring is a planned sequence of observations or measurements to assess whether a CCP is under control and to produce an accurate record for future use in verification. Monitoring serves three main purposes. First, monitoring is essential to food safety management in that it facilitates tracking of the operation. If monitoring indicates that there is a trend towards loss of control, then action can be taken to bring the process back into control before a deviation from a critical limit occurs. Second, monitoring is used to determine when there is loss of control and a deviation occurs at a CCP, i.e., exceeding or not meeting a critical limit. When a deviation occurs, an appropriate corrective action must be taken. Third, it provides written documentation for use in verification.

An unsafe food may result if a process is not properly controlled and a deviation occurs. Because of the potentially serious consequences of a critical limit deviation, monitoring procedures must be effective. Ideally, monitoring should be continuous, which is possible with many types of physical and chemical methods.



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Step 5: Establish Corrective Actions

- ◆ Determine and correct the cause of non-compliance.
- ◆ Determine the disposition of the non-compliant product.
- ◆ Record actions that have been taken.

Continue to Cook

Reheat to 165 °F

Discard

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14

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The HACCP system for food safety management is designed to identify health hazards and to establish strategies to prevent, eliminate, or reduce their occurrence. However, ideal circumstances do not always prevail and deviations from established processes may occur.

An important purpose of corrective actions is to prevent foods which may be hazardous from reaching consumers.

Where there is a deviation from established critical limits, corrective actions are necessary. Therefore, corrective actions should include the following elements:

(a) determine and correct the cause of non-compliance; (b) determine the disposition of non-compliant product and (c) record the corrective actions that have been taken.



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Step 6: Record Keeping

**Documents program, procedures,
measurements, & actions.**

- ◆ **QC File**
- ◆ **QC Plan**
- ◆ **Inspection Reports**
- ◆ **Equipment Calibration & Time/Temp Logs**
- ◆ **Training Records**
- ◆ **SOPs**

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The sixth HACCP principle is Record Keeping. Without records you have not continuity in your program.

- SOPs keep people on the same sheet of music
- Inspection reports from self audits, COR/QAE evaluations, and Preventive Medicine help identify trends and problematic issues.
- Training records helps to identify future training needs.
- Temperature logs also provide trend analysis data and can justify work order requests.



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Step 7: Verification

How do you verify Contractor Compliance?

- ◆ **Review documentation**
- ◆ **Inspections**
 - ✓ Inspection Schedules used?
 - ✓ Random & Planned Inspections used?
 - ✓ Employees following procedures
 - ✓ Review Preventive Med inspections
 - ✓ Corrective Actions?

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The last HACCP principle is Program Verification.

Again, reviewing records is a good starting point to identify problems and trends. Examination of the records provides a more comprehensive look at the overall operation, rather than just a snap shot of one day.

Verification is needed to validate the HACCP program. Your HACCP plan should be an evolving process that is continuously being improved upon.



The video will take you through each point in the food flow; will identify the biological hazard of concern, and specify the food safety procedures and critical limits necessary to prevent bacterial growth or contamination.



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Army Minimum Food Risk Management Requirements

- ◆ **Reference:** AR 30-22; DA PAM 30-22, para. 3-7
- ◆ **Incorporation of HACCP principles:**
 - Monitoring Procedures
 - Application of Critical Limits
 - Record Keeping
- ◆ **Defined Processes for Monitoring:**
 - Cold holding & storage
 - Hot holding
 - Cooking
 - Cooling (leftovers, pre-prepared items)

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The food risk management criteria outlined in DA Pam 30-22 is the Army's first step towards development of a HACCP program. Currently, only 3 HACCP principles must be applied by the FOS:

- Monitoring procedures
- Applying Critical Limits
- Record keeping

Realize that the hazard analysis, determining critical control points, and establishing critical limits has already been done for you through the TB MED 530 and the defined monitoring processes outlined in Table 3-1, DA Pam 30-22.

- Cold holding and storage (in refrigerators, on salad bars, breakfast bars, dessert bars, or sandwich bars)
- Hot holding (in warmers and on serving line)
- Cooking and re-heating leftovers
- Cooling (all leftovers being refrigerated and all pre-prepared items not commercially procured.)



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Table 3-1: Minimum Monitoring Requirements

| Responsible Agent | Process | Number of Samples & Frequency | | Monitoring Criteria |
|------------------------------------|--------------|-------------------------------|--|---|
| Food Operations Sergeant / Manager | Cold Storage | All units | Once each meal period <i>(Breakfast, Lunch, Dinner)</i> | <ul style="list-style-type: none"> • Monitor all refrigeration units... • Verify the ambient temp... • Record temperature on data log. |
| Food Operations Sergeant / Manager | Cooking | 3 menu items | Each meal period | <ul style="list-style-type: none"> • Spot-check at least 1 meat,... • Spot-check 2 or more other... • Monitor internal product temp... • Record internal food temp... |
| Food Operations Sergeant / Manager | Cold Holding | 3 items | Each meal period | <ul style="list-style-type: none"> • Spot-check at least 1 meat,... • Spot-check 2 or more other... • Monitor same menu items... • Record internal food temp... |

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Table 3-1 identifies the minimum monitoring requirements.

- It shows the processes to be monitored and the responsible agent (FOS or FPM)
- Monitoring does not have to be cumbersome; only a few items need to be monitored to verify food safety procedures and standards are being met. The table prescribes the number of samples that must be checked and the frequency that monitoring must occur.
- Monitoring criteria is also provided to ensure key foods that are potentially hazardous are being checked.



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DA 7458 - Cooking



**DA 7459 –
Hot/Cold Holding
& Storage**



**DA 7460 -
Cooling**

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20
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DA Forms 7458 (Cooking), 7459 (Hot/Cold Holding & Storage), and 7460 (Cooling) are available for documenting minimum food risk management requirements.



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Contract Requirements

- ◆ Part of Quality Control Plan
- ◆ Apply HACCP principles as part of routine duties
- ◆ Documentation of HACCP plan
- ◆ Records (*SOPs, training, work orders...*)

**Part of the Gov't Quality
Assurance Plan**



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The Last Word!

“The best HACCP plan in the world isn’t going to eliminate risk; but it will help us reduce the potential for risk and its magnitude.”

-H. RUSSELL CROSS, PH.D.



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Hazard Analysis Critical Control Point

Point

Summary



- ◆ Define HACCP
- ◆ Understand HACCP Principles
- ◆ Identify Control Points & Critical Control Points
- ◆ Know Contract Requirements

? Questions ?

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