United States Department of Agriculture

Food Safety and Inspection Service

September 1999
Revision 1

HACCP-5

Generic HACCP Model for Poultry Slaughter

Additional copies of the Guidebook for the Preparation of HACCP Plans and the Generic HACCP Models are available from:

U.S. Department of Agriculture
Food Safety and Inspection Service (FSIS)
Office of Policy, Program Development,
and Evaluation (OPPDE)
Inspection Systems Development Division
Room 202, Cotton Annex Building
300 12th Street SW
Washington, D.C. 20250-3700
Phone: (202) 720-3219
Fax: (202) 690-0824

This material is also available on the FSIS Homepage:
http://www.fsis.usda.gov/index.htm

United States Department of Agriculture
Food Safety and Inspection Service
Washington, D.C. 20250

September 8, 1999

TO THE USERS OF THESE VOLUMES

As some of you may know, the Food Safety and Inspection Service (FSIS) received a substantial package of comments on its Guidebook for Hazard Analysis and Critical Control Point (HACCP) Plan Development and the 13 Generic HACCP models, from a coalition of industry and trade associations. This package represents a large and thoughtful effort on the part of these organizations. FSIS intends to give it the careful attention and response that it deserves.

The comments included many technical suggestions for improvements in the FSIS documents. It also included reiteration of longstanding differing policy viewpoints that have been frequently discussed by the Agency and the regulated industry. For the first time, the comments revealed substantially differing expectations on the part of these organizations and FSIS with respect to the purpose of the FSIS documents and their intended use. We want to address some aspects of this latter point.

When the Pathogen Reduction/Hazard Analysis and Critical Control Point systems (PR/HACCP) final regulation was published on July 25, 1996, the DRAFT Guidebook was included as an appendix. The Generic Models, developed for FSIS under contract, were available shortly thereafter in April 1997. It was probably inevitable that there were significant differences between the final regulatory language of CFR Part 417 and the DRAFT Generic Models as they were developed independently. It would have been inappropriate for FSIS to discuss its final regulatory language with any outside group. The contractor was appropriately proceeding from what it knew best, the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) documents on the subject of HACCP. Therefore, FSIS accepted that work product with full knowledge that significant revisions would be necessary.

As time passed, FSIS managers became increasingly uncomfortable with the situation in which its major technical assistance documents did not appropriately and completely inform the regulated industry of Agency expectations regarding regulatory compliance. Because the intended audience for these technical assistance materials was primarily the very small establishments, which the Agency believed to have the least HACCP-experience, the Agency began the systematic revision of the documents to overcome this problem. We targeted the summer of 1999 as the completion date for this effort.

FSIS now believes that others had very different ideas about the purpose and use of the documents than it did. As is consistently reiterated in the documents themselves, they are not designed to be used "as is." That is, they cannot be copied and used by an establishment to meet all the regulatory requirements of 9 CFR Part 417. Nor were they designed to be the ultimate teaching and training materials, as some would suggest. The development of ideal generic models is left to others who may have an interest in doing so. The generic models are not

designed to extend or further interpret existing regulations; rather, they are designed to send the user back to the regulations so he/she can become familiar with the requirements as well as the flexibility they permit. The generic models are not designed to present new or alternative methods of producing and processing meat and poultry products. That is also left to others with an interest in doing so.

FSIS envisioned that the generic models might be used in the following way: Suppose a HACCP team leader of a three-person HACCP team in a very small establishment attended a training course, but the others on his/her team were not able to do so. Suppose the HACCP training course met all the requirements of 417.7 but did not provide participants with much in the way of "take away materials" like workbooks, practical questions and answers, access to follow-up resources, etc., which the Research Triangle Institute (RTI) needs assessment indicated were so important to these establishments. The trained HACCP team leader returns to the establishment and begins the process of attempting to develop HACCP plans for the company's products and processes. He/she is quite confident that he/she has grasped the material presented in the training course and begins to work with this team immediately, while the concepts are fresh in his/her mind.

First, he/she has the rest of the team review the Canadian video and the Guidebook from FSIS so that all members of his team have a basic level of information.

The team members begin their work, and as they proceed, some questions arise as to whether what they have developed is appropriate. This is the point when FSIS expects the team to pick up the appropriate generic model and get a sense of whether they are on the right track. They should be able to determine whether the forms that they have developed, while different from the various ones in the generic models and not the same as what other companies use, are acceptable because they include the required information. They will also be able to discover what are some typical food safety hazards that are reasonably likely to occur, as explicitly defined in 417.2, and how to think through the problems that these hazards represent for their own products. They can see how critical limits might arise from existing regulatory requirements like the ones for rapid chilling of poultry products. They can also see that in the absence of settled regulatory requirements, there may be several sources of scientific expertise, and they can choose to make a conservative decision to provide a good margin of safety. They can find out the essential differences between monitoring and verification and have a basis for making their choices about verification activities and their frequencies. FSIS believes that these are useful, beneficial and worthwhile functions for which its generic models can be used.

FSIS is publishing these updated revisions of the generic models, beginning with the Guidebook and the Generic Model for Raw, Ground Product, because a large backlog of requests exists for these two documents. FSIS intends to publish revisions of all the generic models no later than September 30, 1999. Moreover, as a result of public consultation, it may publish an additional revision of some of these models, but given the backlog and the impending HACCP implementation date, we considered it important to get a version of these documents out now.

We hope that these documents are helpful.

Table of Contents

GENERIC HACCP MODEL

FOR

POULTRY SLAUGHTER

Introduction

The Hazard Analysis Critical Control Point (HACCP) system is a scientific approach to process control. It is designed to prevent the occurrence of problems by assuring that controls are applied at any point in a food production system where hazardous or critical situations could occur. Hazards include biological, chemical, or physical contamination of food products.

The Food Safety and Inspection Service (FSIS) published a final rule in July 1996 mandating that HACCP be implemented as the system of process control in all inspected meat and poultry plants. As part of its efforts to assist establishments in the preparation of plant-specific HACCP plans, FSIS determined that a generic model for each process defined in the regulation would be made available for use on a voluntary basis by inspected establishments.

The generic models have been revised since their initial publication and distribution as DRAFTS. The most important change in the revised versions is to make certain that these models are
fully consistent with the features of the final regulation. Also, other technical and editorial improvements have been made.

Throughout this generic model, FSIS discusses a HACCP team with members from different departments. In many very small establishments, there will not be separate departments with different employees. But, there will be employees who perform these different functions – often several of them. For purposes of explaining concepts, it is easier to speak as if these were different people, even though in many cases, they may be the same person carrying out more than one responsibility.

Each generic model can be used as a starting point for the development of plant-specific plan(s) reflecting actual plant environments and the processes conducted. The generic model is not intended to be used "as is" for plant specific HACCP plans.

The generic models are designed for use in conjunction with the list of process categories found in the HACCP regulations in section 417.2(b)(1).

> *(b) The HACCP plan. (1) Every establishment shall develop and implement a written*

> *HACCP plan covering each product produced by that establishment whenever a hazard analysis reveals one or more food safety hazards that are reasonably likely to occur, based on the hazard analysis conducted in accordance with paragraph (a) of this section, including products in the following processing categories:*
>
> *(i) Slaughter--all species.*
>
> *(ii) Raw product--ground.*
>
> *(iii) Raw product--not ground.*
>
> *(iv) Thermally processed--commercially sterile.*
>
> *(v) Not heat treated--shelf stable.*
>
> *(vi) Heat treated--shelf stable.*
>
> *(vii) Fully cooked--not shelf stable.*
>
> *(viii) Heat treated but not fully cooked--not shelf stable.*
>
> *(ix) Product with secondary inhibitors--not shelf stable.*

This generic model is designed for use with the first process category: Slaughter.

The purpose of the process category listing in 417.2 is to set out the circumstances under which a HACCP team may develop a single HACCP plan for multiple products. This may be done when products are in the same process category, and food safety hazards, critical control points, and other features are essentially the same. There is a generic model for each process category, plus two for subcategories which present special issues: irradiated products and mechanically separated products.

In order to select the model or models that will be most useful for the activities performed in any specific plant, the following steps should be taken:

1) For slaughtering operations, select the model for the appropriate species.

2) For processed products, make a list of all products produced in the plant.

3) Examine the list and group like products, considering common processing steps and equipment used.

4) Compare the grouped products with the list of processes in the regulations; this step should reveal how many and which of the generic models might be useful.

Deciding on a generic model and which products can be covered by a single plan is an important achievement. If the team does it well, it can save a lot of unnecessary effort and paperwork.

Selecting an inappropriate generic model reduces its potential benefits. However, often the HACCP team will discover they have made this error when they develop their process flow diagram or during their hazard analysis. These are early stages in the process when it is relatively easy to make changes.

In any case, establishments must meet all regulatory requirements for their products.

Using This Generic Model

This generic model is designed to be used by establishments that slaughter, the first process category. The model can be used for all establishments that slaughter, but would be most useful to establishments that slaughter young chickens. The generic model is not suitable for products that fall into any of the other process categories.

The model will be most useful to a HACCP team that includes access to one trained individual, as specified in 417.7(b).

> *(b)The individual performing the functions listed in paragraph (a) of this section shall have successfully completed a course of instruction in the application of the seven HACCP principles to meat or poultry product processing, including a segment on the development of a HACCP plan for a specific product and on record review.*

It would be beneficial for other team members to have reviewed any of the various guidance materials available on how to develop a HACCP plan for your company, including several useful videos, handbooks, or computer programs. Once the HACCP team has prepared itself as thoroughly as possible in general HACCP principles and how to use them, this model should be helpful.

Note: This generic model includes a number of forms that can be used to record various types of required information. The forms themselves are samples; a company HACCP team can develop whatever forms it finds most useful. All the forms mentioned in this document are included in Appendix B; they appear in the order in which they are discussed in the text.

All FSIS generic models are designed to assist establishments in applying the seven HACCP principles to their meat and poultry processing operations **AND** to meet the regulatory

requirements of Part 417. Therefore, the definitions used in this and all other FSIS generic models are those found in 417.1:

> ***§ 417.1 Definitions.***
>
> *For purposes of this part, the following shall apply:*
>
> *Corrective action. Procedures to be followed when a deviation occurs.*
>
> *Critical control point. A point, step, or procedure in a food process at which control can be applied and, as a result, a food safety hazard can be prevented, eliminated, or reduced to acceptable levels.*
>
> *Critical limit. The maximum or minimum value to which a physical, biological, or chemical hazard must be controlled at a critical control point to prevent, eliminate, or reduce to an acceptable level the occurrence of the identified food safety hazard.*
>
> *Food safety hazard. Any biological, chemical, or physical property that may cause a food to be unsafe for human consumption.*
>
> *HACCP System. The HACCP plan in operation, including the HACCP plan itself.*
>
> *Hazard. SEE Food Safety Hazard.*
>
> *Preventive measure. Physical, chemical, or other means that can be used to control an identified food safety hazard.*
>
> *Process-monitoring instrument. An instrument or device used to indicate conditions during processing at a critical control point.*
>
> *Responsible establishment official. The individual with overall authority on-site or a higher level official of the establishment.*

Process Flow Diagram and Product Description

To begin using this model, the company's HACCP team should first describe the product(s) which are part of this process category and covered by this HACCP plan. The product(s) should be described in two ways:

(1) by a simple diagram which shows the steps the company uses when it produces the product,

and
(2) in a brief written description which provides key facts about the product and its use.

In this generic model, there is an example for young chicken slaughter, one of the species in this process category. FSIS has developed certain forms as part of the examples in the generic models; **company HACCP teams are not required to use these forms.**

Figure 1 is an example of a **PROCESS FLOW DIAGRAM** for the young chicken slaughter process in generic establishment X. Figure 2 is an example of a **PRODUCT DESCRIPTION** for the young chickens slaughtered by generic establishment X.

Once the company HACCP team in your establishment has prepared your Process Flow Diagram, they should verify it by walking through the establishment following the flow of product and making sure that all the steps of the process are included in the flow diagram. The team should also review the information provided on the Product Description to make sure all the key facts are included, such as identifying consumers, especially those with particular health problems or known to be at risk.

Note: If you are slaughtering young chickens and your process includes steps not included in this example, such as pre-evisceration spray or bacterial spray, those steps should be added. Also, if your process does not include all the steps identified in this example, those steps would be omitted when conducting the hazard analysis. That is generally, how you use these generic model examples--just omit the features which do not apply to your operation or if your operation includes features not included in this example, they should be added.

By completing a Process Flow Diagram and a Product Description, you have met the requirements of 417.2(a)(2). You can use the Process Flow Diagram in particular to help you complete the rest of the hazard analysis. Use the flow diagram to systematically review each step in the process and ask the question, "Is there a food safety hazard which is reasonably likely to occur which may be introduced at this step?" In answering the question, your HACCP team needs to consider biological (including microbiological), chemical, and physical hazards.

Hazard Analysis

Once your product(s) are accurately described through the flow diagram and product description, the HACCP team should begin work on the **HAZARD ANALYSIS**. The hazard analysis is fundamental to developing a good HACCP plan and one that meets regulatory requirements. The regulatory requirements for a hazard analysis are found at 417.2(a).

§ 417.2 Hazard Analysis and HACCP Plan.

> *(a) Hazard analysis. (1) Every official establishment shall conduct, or have conducted for it, a hazard analysis to determine the food safety hazards reasonably likely to occur in the production process and identify the preventive measures the establishment can apply to control those hazards. The hazard analysis shall include food safety hazards that can occur before, during, and after entry into the establishment. A food safety hazard that is reasonably likely to occur is one for which a prudent establishment would establish controls because it historically has occurred, or because there is a reasonable possibility that it will occur in the particular type of product being processed, in the absence of those controls.*
>
> *(2) A flow chart describing the steps of each process and product flow in the establishment shall be prepared, and the intended use or consumers of the finished product shall be identified.*

Generic establishment X, which we are using for our example, is capturing these regulatory requirements on a 6-column **Hazard Analysis Form (See Figure 3)**. A good way to use a form like this is to create the first column by using the Process Flow Diagram and the second by answering the question. Once the HACCP team has considered all the steps in the flow diagram and determined if a food safety hazard could be introduced, it needs to consider whether the hazard is "reasonably likely to occur", using the meaning of this phrase included in 417.2(a). On the 6-column form used by generic establishment X, the third and fourth columns address this issue. If the establishment's HACCP team has decided that the hazard is not reasonably likely to occur, they enter "No" in column three, explain the basis for their determination in column four, and do not need to further consider activity to address this hazard.

If, however, the team has determined there is a "food safety hazard reasonably likely to occur" introduced at a certain point in the process, column five is used to describe a measure which could be applied to "prevent, eliminate, or reduce to acceptable levels" the food safety hazard identified in column three. Column six is used when a critical control point (CCP) is identified based upon the decision made in the hazard analysis. Each CCP has a number – the order corresponds to steps in the process. For example, 1 is the first CCP in the process flow, 2 the next, etc. The letter indicates whether the hazard is biological – B; chemical – C; or physical – P.

Look at the entries for “Receiving – Nonmeat Ingredients/Packaging Materials” on the first page of the six column form; the HACCP team has determined that chemical and physical hazards may be associated with the nonmeat ingredients or packaging materials when they are received, but it put a “No” in the third column. Column four explains the basis for the team’s determination.

You will notice that on our generic hazard analysis for poultry slaughter, there are four instances

in which the HACCP team has identified a point in the process at which a food safety hazard is reasonably likely to occur. For each one of these they have identified a measure which can be used to control the hazard.

When your HACCP team has completed their hazard analysis (whether they use this format or not), it is a good idea to review the flow diagram, the product description and the hazard analysis itself to make sure they are complete. Part 417.2(a)(3) includes a list of sources from which food safety hazards might be expected to arise. Reviewing that list could help the HACCP team check for completeness.

Note: If you are using this generic model and slaughter a different species or if you use a different process flow, you may have different hazards which are reasonably likely to occur. For these different hazards, there may be different measures which could be used for control purposes.

This, and all other FSIS generic models, contains a list of references which can help your HACCP team in making sure the hazard analysis is complete. The references for poultry slaughter are found in Appendix A. A member of your HACCP team might want to review at least some of the references to make sure hazards have not been omitted from the hazard analysis.

Completing the hazard analysis is a very significant and important element in developing your HACCP system. Your HACCP team should feel a real sense of accomplishment when they get this far; this is like completing the foundation of a house.

Developing Your HACCP Plan

The company HACCP team can now take the materials it developed while doing the hazard analysis and use them to build the **HACCP Plan.** Remember that one of the important objectives of the FSIS generic models is to provide examples which illustrate **how to meet the regulatory requirements of Part 417**, as well as to correctly apply the principles of HACCP. Part 417.2 (c) and (d) are the regulatory requirements:

> *(c) The contents of the HACCP plan. The HACCP plan shall, at a minimum:*
>
> *(1) List the food safety hazards identified in accordance with paragraph (a) of this section, which must be controlled for each process.*
>
> *(2) List the critical control points for each of the identified food safety hazards, including, as appropriate:*

(i) Critical control points designed to control food safety hazards that could be introduced in the establishment, and

(ii) Critical control points designed to control food safety hazards introduced outside the establishment, including food safety hazards that occur before, during, and after entry into the establishment;

(3) List the critical limits that must be met at each of the critical control points. Critical limits shall, at a minimum, be designed to ensure that applicable targets or performance standards established by FSIS, and any other requirement set forth in this chapter pertaining to the specific process or product, are met;

(4) List the procedures, and the frequency with which those procedures will be performed, that will be used to monitor each of the critical control points to ensure compliance with the critical limits;

(5) Include all corrective actions that have been developed in accordance with §417.3(a) of this part, to be followed in response to any deviation from a critical limit at a critical control point; and

(6) Provide for a recordkeeping system that documents the monitoring of the critical control points. The records shall contain the actual values and observations obtained during monitoring.

(7) List the verification procedures, and the frequency with which those procedures will be performed, that the establishment will use in accordance with § 417.4 of this part.

(d) Signing and dating the HACCP plan. (1) The HACCP plan shall be signed and dated by the responsible establishment individual. This signature shall signify that the establishment accepts and will implement the HACCP plan.

(2) The HACCP plan shall be dated and signed:

(i) Upon initial acceptance;

(ii) Upon any modification; and

(iii) At least annually, upon reassessment, as required under § 417.4(a)(3) of this part.

Generic establishment X has prepared its HACCP plan for young chicken slaughter on a six column form (**See Figure 4**). You do not need to use this form, although some kind of a form is probably the easiest way to present your HACCP plan.

Identifying CCPs

The first column on this particular form is used to enter information developed and contained on the hazard analysis form. Part 417.2(c)(1) and (2) require that the food safety hazards identified in the hazard analysis be listed on the HACCP plan and that there be a CCP for each identified hazard. You will notice the hazard analysis form identified four points at which food safety hazards were reasonably likely to occur: physical contamination with fecal material and potential pathogen contamination at evisceration/presentation, pathogen contamination at reprocessing, pathogen cross-contamination and proliferation at chilling, and pathogen proliferation at finished products storage (cold). The establishment HACCP team has chosen to have four CCPs to address these four hazards: proper evisceration/presentation, proper reprocessing, proper chilling of product, and proper maintenance of finished product temperatures during storage.

After identifying its CCPs, the HACCP team proceeded to consider critical limits, monitoring procedures and their frequencies, and verification procedures and their frequencies, and HACCP records.

In deciding what would be the critical limits, the HACCP team first considered whether there were any regulatory requirements which had to be met and would function as critical limits. They found some regulatory requirements for chilling (§381.66), and realized that if the proper chiller procedures were not followed pathogen proliferation was possible. The HACCP team knew that the chilling process should start as soon as possible, so they set the critical limit for the temperature of product to reach 40° F or less within four hours from the stunning/killing step.

Once they had decided on their critical limits, they needed to identify how the monitoring procedures would be carried out and at what frequency.

For their chilling step, the establishment had the QA technician do a product temperature check at the end of the chilling procedure every hour of production. At the chilling step the carcass chiller and neck/giblet chiller temperatures are monitored continuously with recording charts.

These decisions by the HACCP team regarding critical limits, plus monitoring procedures and their frequencies are written up in columns two and three of the HACCP Plan.

The team then went on to consider appropriate verification procedures; the team knew that there were different types of verification and that Part 417.4(a)(2) included specific regulatory requirements for each. The regulatory requirements for ongoing verification are:

> *(2) Ongoing verification activities. Ongoing verification activities include, but are not limited to:*

(i) The calibration of process-monitoring instruments;

(ii) Direct observations of monitoring activities and corrective actions; and

(iii) The review of records generated and maintained in accordance with §417.5(a)(3) of this part.

The HACCP team decided they could verify the chilling of product by checking the Chilling Log once per shift. The team also had the maintenance supervisor verify the accuracy of the carcass chiller and necks/giblets chiller temperature recording charts once per shift.

There is a regulatory requirement (Part 417.4(a)(2)(i)) for including as a verification, the calibration of process-monitoring instruments. Each day QA checks the hand-held thermometers for accuracy in slush ice water and calibrates them to within 2° F accuracy.

The HACCP team described the verification procedures and their frequencies in the fifth column of their HACCP plan.

The HACCP team for generic establishment X knew that their HACCP Plan needed to provide for a recordkeeping system. They wanted their records to be easy to create and understand. They wanted to be sure their records met regulatory requirements, so they reviewed part 417.5(a) and (b):

§ 417.5 Records.

(a) The establishment shall maintain the following records documenting the establishment's HACCP plan:

(1) The written hazard analysis prescribed in § 417.2(a) of this part, including all supporting documentation;

(2) The written HACCP plan, including decision making documents associated with the selection and development of CCP's and critical limits, and documents supporting both the monitoring and verification procedures selected and the frequency of those procedures.

(3) Records documenting the monitoring of CCP's and their critical limits, including the recording of actual times, temperatures, or other quantifiable values, as prescribed in the establishment's HACCP plan; the calibration of process-monitoring instruments; corrective actions, including all actions taken in response to a deviation; verification procedures and results; product code(s), product name or identity, or slaughter

> *production lot. Each of these records shall include the date the record was made.*
>
> *(b) Each entry on a record maintained under the HACCP plan shall be made at the time the specific event occurs and include the date and time recorded, and shall be signed or initialed by the establishment employee making the entry.*

The HACCP team decided that their records would be kept on some simple forms, some of which the team itself devised.

The HACCP team decided that since QA had a form that they had been using for measuring chilling temperatures, that they would modify that form. The form was modified to provide spaces for all entries necessary for the monitoring and verification activities at the product handling step.

The Temperature Recording Chart for the carcass chill was already in use and the team knew that they needed to do some personnel training to ensure that all recordkeeping requirements are included on the recording chart.

QA already had a Thermometer Calibration Log and this form was modified to meet the HACCP regulatory recordkeeping requirements. The HACCP team decided that this form could be used by QA for more than one day because there are very limited numbers of thermometers issued for product temperature measurements. If at any time during the shift a thermometer is dropped or if the employee questions the accuracy of the thermometer he is to immediately take the thermometer to the QA lab for an accuracy check.

On its HACCP Plan, generic establishment X has listed the names of the forms it will be using for monitoring and verification records. The team also devised the antimicrobial intervention log to record monitoring results for pressure and antimicrobial concentrations.

There is one other form included in column four, where the establishment has described its recordkeeping system. That is the Corrective Actions Log; it is used to create the records of any corrective actions taken because of deviations from critical limits at CCPs. Column six references the planned corrective actions for each CCP. The HACCP team carefully reviewed the regulatory requirements for planned corrective actions found at 417.3(a):

§ 417.3 Corrective actions.

(a) The written HACCP plan shall identify the corrective action to be followed in response to a deviation from a critical limit. The HACCP plan shall describe the corrective action to be taken, and assign responsibility for taking corrective action, to ensure:

(1) The cause of the deviation is identified and eliminated;

(2) The CCP will be under control after the corrective action is taken;

(3) Measures to prevent recurrence are established; and

(4) No product that is injurious to health or otherwise adulterated as a result of the deviation enters commerce.

The HACCP team has developed a specific corrective action plan which will be followed whenever there is a deviation from a critical limit at a CCP; each of the planned corrective actions meets the four regulatory requirements of 417.3(a).

Planned Corrective Actions for CCP 3

1. QA will reject or hold product until temperature is achieved dependent on time and temperature deviation. For example, the ARS cooling program can be used to make a determination.

2. QA will identify the cause of the deviation and prevent reoccurrence by reassessment of the HACCP plan and review of the cause of the deviation. Monitoring will be more frequent to assure the process is in control.

3. QA will assure that no adulterated product has been shipped.

The HACCP team also develops planned corrective actions for each of the other CCPs and attaches them to the HACCP plan. Whenever a deviation from a critical limit occurs, company employees follow the corrective action plan and use the Corrective Action Log to create a record of their actions. The Corrective Action Log forms are available at CCPs, so they can be used immediately when an employee performing a monitoring check discovers and records a deviation. All Corrective Action Logs, which have been used during the day, are turned in to the HACCP coordinator.

There is one final verification/recordkeeping requirement which the company must perform; it is found at 417.5(c):

> *(c) Prior to shipping product, the establishment shall review the records associated with the production of that product, documented in accordance with this section, to ensure completeness, including the determination that all critical limits were met and, if appropriate, corrective actions were taken, including the proper disposition of product. Where practicable, this review shall be conducted, dated, and signed by an individual who did not produce the record(s), preferably by someone trained in accordance with § 417.7 of this part, or the responsible establishment official.*

In generic establishment X, product is shipped out, often in small lots, throughout the day. This means that pre-shipment verification checks must be as complete as possible when finished product is in storage, so that a shipment can be made up quickly and moved into distribution channels.

The establishment uses a half day lotting system and a midshift clean-up. While the midshift clean-up is being performed, QA personnel or the HACCP coordinator review results of monitoring and verification checks applied to that lot; if there were deviations from critical limits, they review the Corrective Action Logs to make sure all appropriate planned responses were carried out. If everything is in order and there are complete records showing that the establishment has controlled production of this product through its HACCP system, the HACCP coordinator will sign the pre-shipment review form which the HACCP team devised for this purpose.

Note: It is not a regulatory requirement that a separate form be used for pre-shipment review; in addition, FSIS has indicated that it will be very flexible in accepting a variety of arrangements for accomplishing pre-shipment review to reflect the variety of commercial practices which it has encountered in the industry. It is, however, important to remember that pre-shipment review is a regulatory requirement that must be met, as it indicates that the establishment is taking full responsibility for the product having been produced under a well-functioning HACCP system.

The HACCP team believes it has now completed preparation of the documents which are necessary to meet regulatory requirements for a Hazard Analysis and a HACCP Plan for their poultry slaughter production process. They have secured a copy of FSIS Directive 5000.1, Enforcement of Regulatory Requirements in Establishments Subject to HACCP System Requirements, the HACCP Basic Compliance Checklist which will be used by inspection program personnel. The HACCP team has modified the inspection form to make the statements into positives, and now has a checklist for its own use to make sure they have not omitted anything in their plan development and preparation. When they are confident that they have done what is necessary, they will turn their Hazard Analysis and HACCP Plan over to the establishment owner for decisions about implementation.

APPENDIX A

References for HACCP Teams

1. Agriculture Canada. *Food Safety Enhancement Program – HACCP Implementation Manual*. Camelot Drive, Nepean, Ontario, Canada, 1996.

2. American Meat Institute Foundation. *HACCP: The Hazard Analysis and Critical Control Point System in the Meat and poultry Industry.* Washington, D.C., 1994.

   Useful sections in particular are:
   Chapter 3 – microbiological hazards, pp. 15-26
   Chapter 4 – chemical hazards, pp. 27-32
   Chapter 5 – physical hazards, pp. 33-35
   Appendix A – NACMCF HACCP
   Appendix C – Model HACCP plans

3. Baker, D.A. *Application of Modeling in HACCP Plan Development.* Int. J. Food Microbiol. 25:251-261, 1995.

4. Corlett, D.A., Jr. and Stier, R.F. *Risk Assessment within the HACCP System.* Food Control 2:71-72, 1991.

5. Council for Agriculture Science and Technology. *Risks Associated with Foodborne Pathogens.* February 1993.

6. Easter, M.C., *et al. The Role of HACCP in the Management of Food Safety and Quality.* J. Soc. Dairy Technol. 47:42-43, 1994.

7. Environmental Protection Agency. *Tolerances for Pesticides in Foods.* Title 40, Code of Federal Regulations, Part 185. U.S. Government Printing Office, Washington, D.C., 1998.

8. Food and Drug Administration. *The Food Defect Action Levels*. FDA/CFSAN. Washington, D.C., 1998.

9. Food and Drug Administration. *Fish and Fishery Products Hazards and Control Guide* -- *Get Hooked on Seafood Safety*. Office of Seafood. Washington, D.C., 1994.

10. International Commission on Microbiological Specification for Foods. *HACCP in Microbiological Safety and Quality.* Blackwell Scientific Publications, Oxford, 1988.

Useful sections in particular are:
Chapter 10 – raw meat and poultry, pp. 176-193
Chapter 11 – roast beef, pp. 234-238
Chapter 11 – canned ham, pp. 238-242

11. International Commission on Microbiological Specification for Foods. *Microorganisms in Foods 4. Application of Hazard Analysis and Critical Control Point (HACCP) Systems to Ensure Microbiological Safety and Quality*. Blackwell Scientific Publications, Boston, 1989

12. National Advisory Committee on Microbiological Criteria for Foods. *March 20, 1992 -- Hazard Analysis and Critical Control Point System.* Int. J. Food Microbiol. 16: 1-23, 1993.

13. National Advisory Committee on Microbiological Criteria for Foods. Adopted August 14, 1997-- *Hazard Analysis and Critical Control Point Principles and Application Guidelines.* J. Food Protect. 61(9): 1246-1259, 1998.

14. National Advisory Committee on Microbiological Criteria for Foods. DRAFT document - *FSIS Microbiological Hazard Identification Guide for Meat and Poultry Components of Products Produced by Very Small Plants.* 1-22, August 1999.

15. National Advisory Committee on Microbiological Criteria for Foods. *June 1993 -- Report on Generic HACCP for Raw Beef.* Food Microbiol. 10: 449-488, 1994.

16. National Research Council. *An Evaluation of the Role of Microbiological Criteria for Foods and Food Ingredients.* National Academy Press, Washington, D.C., 1985.

Useful sections in particular are:
Chapter 4 – microbiological hazards, pp. 72-103
Chapter 9 – raw meat, pp. 193-199
Chapter 9 – processed meats, pp. 199-216

17. Notermans, S., et al. *The HACCP Concept: Identification of Potentially Hazardous Microorganisms.* Food Microbiol. 11:203-214, 1994.

18. Pierson M.D. and Dutson, T. Editors. *HACCP in Meat, Poultry, and Fish Processing.* Blackie Academic & Professional. Glasgow, 1995.

Useful sections in particular are:
Chapter 4 – meat and poultry slaughter, pp. 58-71
Chapter 5 – processed meats, pp. 72-107
Chapter 7 – risk analysis, pp. 134-154
Chapter 13 – predictive modeling, pp. 330-354

19. Pierson, M.D. and Corlett, D.A., Jr. Editors. *HACCP Principles and Applications*. Van Nostrand Reinhold, New York, 1992.

20. Stevenson, K.E. and Bernard, D.T. Editors. *HACCP: Establishing Hazard Analysis Critical Control Point Programs, A Workshop Manual.* The Food Processors Institute, Washington, D.C., 1995.

    Useful sections in particular are:
    Chapter 11 – forms for hazard analysis, CCPs, critical limits, HACCP master sheet, example HACCP for breaded chicken

21. Stevenson, K.E. and Bernard, D.T. Editors. *HACCP: A Systematic Approach to Food Safety. 3rd Edition.* The Food Processors Institute, Washington, D.C., 1999.

22. Tompkin, R.B. *The Use of HACCP in the Production of Meat and Poultry Products.* J. Food Protect. 53(9): 795-803, 1990.

23. Tompkin, R.B. *The Use of HACCP for Producing and Distributing Processed Poultry Products.* In Advances in Meat Research. Vol. 10. *Hazard Analysis Critical Control Point in Meat, Poultry and Seafoods.* Chapman & Hall, 1995.

References for Poultry Slaughter (Broiler Carcass & Turkey Carcass)

1. Baily, J. Stan. *Control of Salmonella and Campylobacter in Poultry Production*. A Summary of Work at Russell Research Center. Poult. Sci. 72: 1169–1173, 1993.

2. Benedict, R.C., et al. *Attachment and Removal of Salmonella spp. On Meat and Poultry Tissues*. J. Food Safety. 11: 135–148, 1991.

3. Blank, Greg, et al. *Microbiological and Hydraulic Evaluation of Immersion Chilling for Poultry.* J. Food Protect. 58: 1386–1388, 1995.

4. Carpenter, Sandra L., et al. *Survival of Listeria monocytogenes on Processed Poultry*. J. Food Sci. 54: 556–557, 1989.

5. Cherrington, Christina A., et al. *Persistence of Escherichia coli in a Poultry Processing Plant*. Letters Appl. Microbiol. 7: 141–143, 1988.
6. Clouser, C.S., et al. *The Role of Defeathering in the Contamination of Turkey Skin by Salmonella species and Listeria monocytogenes*. Poult. Sci. 74: 723–731, 1995.

7. Clouser. C.S. et al. *Effect of Type of Defeathering System on Salmonella Cross-Contamination During Commercial Processing*. Poult. Sci. 74: 732–741, 1995.

8. Dickens, J.A., et al. *The Effect of Air-Scrubbing on Moisture Pickup, Aerobic Plate Counts, Enterobacteriaceae, and the Incidence of Salmonella on Artificially Inoculated Broiler Carcasses*. Poult. Sci. 71: 560–564, 1992.

9. Franco, C.M., et al. *Determination of the Principal Sources of Listeria spp. Contamination in Poultry Meat and Poultry Processing Plant*. J. Food Protect. 58: 1320–1325, 1995.

10. Genigeorgis, Constantin A., et al. *Prevalence of Listeria spp. in Poultry Meat at the Supermarket and Slaughterhouse Level*. J. Food Protect. 52: 618–624, 1989.

11. Izat, A.L., et al. *Incidence and Level of Campylobacter jejuni in Broiler Processing*. Poult. Sci. 67: 1568–1572, 1988.

12. James, William O, et al. *Cost-Effective Techniques to Control Human Enteropathogens on Fresh Poultry*. Poult. Sci. 72: 1174–1176, 1993.

13. James, William O., et al. *Profile of Selected Bacterial Counts and Salmonella Prevalence on Raw Poultry in a Poultry Slaughter Establishment*. J. Am. Vet. Med. Assoc. 200: 57–59, 1992.

14. Kim, Jeong–Weon, et al. *Attachment of Salmonella typhimurium to Skins of Turkey that had been Defeathered through Three Different Systems: Scanning Electron Microscopic Examination.* J. Food Protect. 56: 395–400, 1993.

15. Kotula, Kathryn L., et al. *Bacterial Contamination of Broiler Chickens before Scalding*. J. Food Protect. 58: 1386–1388, 1995.

16. Lawrence, Lorna M., et al. *Incidence of Listeria spp. and Listeria monocytogens in a Poultry Processing Environment and in Poultry Products and Their Rapid Confirmation by Multiplex PCR.*. Appl. Environ. Microbiol. 4600– 4604, December 1994.

17. Lawrence, Lorna M., et al. *Characterization of Listeria monocytogenes Isolated from Poultry Products and from the Poultry-Processing Environment by Random amplification of Polymorphic DNA and Multilocus Enzyme Electrophoresis*. Appl. Environ. Microbiol. 2139–2144, June 1995.

18. Li, Yanbin, et al. *Electrical Treatment of Poultry Chiller Water to Destroy Campylobacter jejuni.* J. Food Protect. 58: 1330–1334, 1995.

19. Lillard, H.S. *Factors Affecting the Persistence of Salmonella during the Processing of Poultry*. J. Food Protect. 52: 829–832, 1989.

20. Lillard, H.S. *Incidence and Recovery of Salmonella and Other Bacteria from Commercially Processed Poultry Carcasses at Selected Pre- and Post-Evisceration Steps*. J. Food Protect. 52: 88–91, 1989.

21. Mead G.C., et al. *Microbiological Survey of Five Poultry Processing Plants in the UK*. Brit. Poult. Sci. 34: 497–503, 1993.

22. Mead, G.C., et al. *Use of a marker organism in poultry processing to identify sites of cross-contamination and evaluate possible control measures*. Brit. Poult. Sci. 35: 354, 1994.

23. Moye, C.J., et al. *Poultry Processing, An Innovative Technology for Salmonella Control and Shelf Life Extension.* Food Aust. 43: 246–249, 1991.

24. Raj, Mohan. *Poultry Slaughter. Meat Focus International*. Marck 1995:113-118, 1995.

25. Renwick, Shane A., et al. *Variability and Determinants of Carcass Bacterial Load at a Poultry Abattoir.* J. Food Protect. 56: 694-699, 1993.

26. Russell, S. M. *The Effect of Refrigerated and Frozen Storage on Populations of Mesophilic and Coliform Bacteria on Fresh Broiler Chicken Carcasses*. Poultry Sci. 75: 2057-2060, 1996.

27. Russell, S. M., et al. *Spoilage Bacteria of Fresh Broiler Chicken Carcasses*. Poultry Sci. 75:2041-2047, 1996.

28. Thayer, Stephan G., et al. *Evaluation of Cross-Contamination on Automatic Viscera Removal Equipment.* Poult. Sci. 72:741-746, 1993.

29. Tokumaru, Masakazu, et al. *Rates of Detection of Salmonella and Campylobacter in Meats in Response to the Sample Size and the Infection Level of each Species*. Int. J. Food Microbiol. 13: 41-46, 1990.

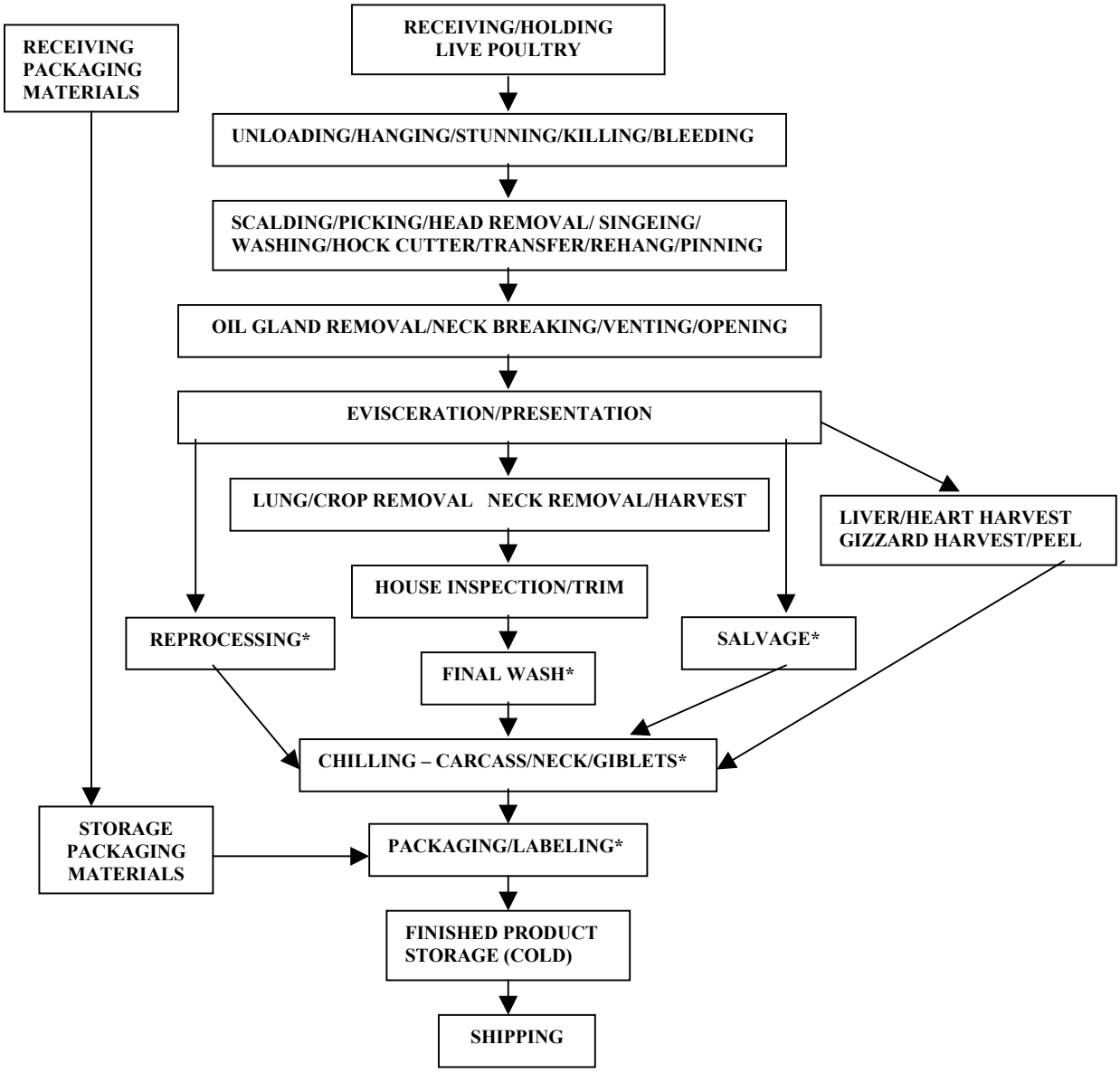
30. Villarreal, Mario E., et al. *The Incidence of Salmonella on Poultry Carcasses Following the Use of Slow Release Chlorine Dioxide (Alcide*). J. Food Protect. 53: 465–467, 1990.

31. Waldroup, A.L. *Summary of Work to Control Pathogens in Poultry Processing*. Poult. Sci. 72: 1177–1179, 1993.

APPENDIX B

PROCESS FLOW DIAGRAM Figure 1

PROCESS CATEGORY: SLAUGHTER
PRODUCT: YOUNG CHICKEN



*** Steps in the process where nonmeat ingredients (e.g., antimicrobials) are added to or comes in contact with product.**

PRODUCT DESCRIPTION

Figure 2

PROCESS CATEGORY: SLAUGHTER PRODUCT: YOUNG CHICKEN	
1. COMMON NAME?	CHICKEN
2. HOW IS IT TO BE USED?	READY TO COOK CARCASSES/PARTS
3. TYPE OF PACKAGE?	CARCASSES – VACUUM PACKAGED INDIVIDUALLY; PARTS – VACUUM PACKAGED, TRAY PACKS
4. LENGTH OF SHELF LIFE, AT WHAT TEMPERATURE?	3-6 MONTHS AT 0° F OR BELOW;7 DAYS AT 40° F
5. WHERE WILL IT BE SOLD? CONSUMERS? INTENDED USE?	WHOLESALE TO DISTRIBUTORS; RETAIL TO CONSUMERS
6. LABELING INSTRUCTIONS?	SAFE FOOD HANDLING LABELS; KEEP REFRIGERATED OR KEEP FROZEN; COOKING LABEL
7. IS SPECIAL DISTRIBUTION CONTROL NEEDED?	KEEP REFRIGERATED OR KEEP FROZEN

HAZARD ANALYSIS – YOUNG CHICKEN SLAUGHTER

Process Step	Food Safety Hazard	Reasonably Likely to Occur?	Basis	If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?	Critical Control Point
Receiving/Holding – Live Poultry	Biological – None				
	Chemical – None				
	Physical – None				
Receiving – Packaging Materials	Biological – None				
	Chemical – Not acceptable for intended use	No	Letters of guaranty are received from all suppliers and packaging materials.		
	Physical – Foreign materials	No	Plant records demonstrate that foreign material contamination has not occurred during the past several years.		
Storage– Nonmeat Ingredients/Packaging Materials	Biological – None				
	Chemical – None				
	Physical – None				

Figure 3

HAZARD ANALYSIS – YOUNG CHICKEN SLAUGHTER

Process Step	Food Safety Hazard	Reasonably Likely to Occur?	Basis	If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?	Critical Control Point
Unloading/Hanging/ Stunning/Killing/ Bleeding	Biological – None				
	Chemical – None				
	Physical – None				
Scalding/Picking/Head Removal/Singeing/ Washing/Hock cutter /Transfer/Rehang / Pinning	Biological – None				
	Chemical – None				
	Physical – None				
Oil Gland Removal/Neck Breaking/Venting/ Opening	Biological – None				
	Chemical – None				
	Physical – None				
Evisceration/ Presentation	Biological Pathogens (fecal and ingesta contamination from gut breakage).*	Yes	Significant contamination can occur from leakage of gut material, which may be associated with pathogens.	Proper adjustment of evisceration equipment and presentation training of employees will reduce the level of contamination. Visual inspection of carcasses for fecal contamination.	1B
	Chemical – None				
	Physical – None*				

Figure 3

* Revised April 2006

HAZARD ANALYSIS – YOUNG CHICKEN SLAUGHTER

Process Step	Food Safety Hazard	Reasonably Likely to Occur?	Basis	If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?	Critical Control Point
Unloading/Hanging/ Stunning/Killing/ Bleeding	Biological – None				
	Chemical – None				
	Physical – None				
Scalding/Picking/Head Removal/Singeing/ Washing/Hock cutter /Transfer/Rehang / Pinning	Biological – None				
	Chemical – None				
	Physical – None				
Oil Gland Removal/Neck Breaking/Venting/ Opening	Biological – None				
	Chemical – None				
	Physical – None				
Evisceration/ Presentation	Biological Pathogens (fecal and ingesta contamination from gut breakage).*	Yes	Significant contamination can occur from leakage of gut material, which may be associated with pathogens.	Proper adjustment of evisceration equipment and presentation training of employees will reduce the level of contamination. Visual inspection of carcasses for fecal contamination.	1B
	Chemical – None				
	Physical – None*				

Figure 3

* Revised April 2006

HAZARD ANALYSIS – YOUNG CHICKEN SLAUGHTER

Process Step	Food Safety Hazard	Reasonably Likely to Occur?	Basis	If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?	Critical Control Point
Lung/Crop Removal Neck Removal/Harvest	**Biological – None**				
	Chemical – None				
	Physical – None				
House Inspection/Trim	**Biological – None**				
	Chemical – None				
	Physical – None				
Reprocessing	**Biological – Pathogens** *Salmonella* Generic *E.coli*	**Yes**	**Potential for contamination and pathogen proliferation. Subsequent chilling will help reduce the risk of pathogen growth.**	**Proper washing (use of an antimicrobial), trimming, and temperature control will reduce the numbers and limit the growth of pathogens.**	**2B**
	Chemical – None				
	Physical – None				

Figure 3

HAZARD ANALYSIS – YOUNG CHICKEN SLAUGHTER

Process Step	Food Safety Hazard	Reasonably Likely to Occur?	Basis	If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?	Critical Control Point
Salvage	**Biological – Sep/Tox**	**No**	**Young chickens historically have a low incidence of sep/tox the only poultry disease of public health significance.**		
	Chemical – None				
	Physical – None				
Final Wash	**Biological – None**				
	Chemical – None				
	Physical – None				
Liver/Heart Harvest Gizzard Harvest/Peel	**Biological – None**				
	Chemical – None				
	Physical – None				
Chilling – Carcass/Necks/Giblets	**Biological cross-contamination** *Salmonella*	**Yes**	**Product to product contact. Literature indicates that improperly controlled chilling systems can result in higher prevalence of pathogens in the final product. FSIS performance standard for** *Salmonella* **can be met using an antimicrobial intervention at this process step.**	**Product will be chilled properly to prevent pathogen growth.** **Chlorine dioxide use can prevent further growth of** *Salmonella.*	**3B**
	Chemical – None				
	Physical - None				

Figure 3

HAZARD ANALYSIS – YOUNG CHICKEN SLAUGHTER

Process Step	Food Safety Hazard	Reasonably Likely to Occur?	Basis	If Yes in Column 3, What Measures Could be Applied to Prevent, Eliminate, or Reduce the Hazard to an Acceptable Level?	Critical Control Point
Packaging/Labeling	**Biological – None**				
	Chemical – None				
	Physical – None				
Finished Product Storage (Cold)	**Biological – Pathogens**	**Yes**	**Pathogens are reasonably likely to grow if temperature is not maintained at or below a level sufficient to preclude their growth.**	**Maintain product temperature at or below a level sufficient to preclude pathogen growth.**	**4B**
	Chemical – None				
	Physical – None				
Shipping	**Biological - None**				
	Chemical – None				
	Physical – None				

Figure 3

HACCP PLAN

PROCESS CATEGORY: SLAUGHTER
PRODUCT EXAMPLE: YOUNG CHICKEN

CCP# and Location	Critical Limits	Monitoring Procedures and Frequency	HACCP Records	Verification Procedures and Frequency	Corrective Actions
1P/B Evisceration/ Presentation	Zero visible fecal contamina-tion after processing; equipment kept properly adjusted; no gut breakage due to improper equipment adjustment; range of 20-50 ppm chlorine or other approved antimicrobial rinse on equipment and product.	Visible check (at least once per hour of production); check chlorine or other approved antimicrobial rinse at start up and every 2 hours using documented random sampling procedures to demonstrate control. Designated Quality Assurance employee will record results in appropriate Log. Equipment adjustment will be checked at start of each shift.	Plant Finished Product Standards Form Antimicrobial Log Equipment Maintenance Log Corrective Action Log	Once per shift the QA supervisor will review the Plant Antimicrobial Log and observe chlorine level testing. Twice per shift Maintenance Supervisor will review Equipment Maintenance Log	QA will reject or hold product until zero fecal tolerance is achieved. Equipment will be properly adjusted to assure contamination is not occurring after line is stopped. All suspect product will be visually examined between evisceration and after final wash. Contaminated product will be condemned or reconditioned. Equipment maintenance and adjustments will be reviewed and compared to flock size and manufacturers specs. QA will identify the cause of the deviation and prevent reoccurrence.

Signature: _____ Date: _____

Figure 4

HACCP PLAN

PROCESS CATEGORY: SLAUGHTER
PRODUCT EXAMPLE: YOUNG CHICKEN

CCP# and Location	Critical Limits	Monitoring Procedures and Frequency	HACCP Records	Verification Procedures and Frequency	Corrective Actions
2P/B Reprocessing	Zero visible fecal contamination after reprocessing; equipment kept properly adjusted; range of 20-50 ppm chlorine or other approved antimicrobial rinse on equipment and product.	Visible check on each lot (at least once per hour of production); check chlorine or other approved antimicrobial rinse at start up and every 2 hours using documented random sampling procedures to demonstrate control. Designated Quality Assurance employee will record results in appropriate Log.	Reprocessing Log (using Plant Finished Product Standards) Antimicrobial Log Equipment Maintenance Log Corrective Action Log	Once per shift the QA supervisor will review the Reprocessing Log and Antimicrobial Log. Twice per shift Maintenance Supervisor will review Equipment Maintenance Log	QA will reject or hold product until zero fecal tolerance is achieved. Product will be reworked and reinspected by QA for fecal contamination. Any equipment adjustments will be made. Frequency of monitoring will be reassessed and CCP will be monitored once per hour to assure it is under control. QA will identify the cause of the deviation and prevent reoccurrence.

Signature: _____ Date: _____

Figure 4

HACCP PLAN

PROCESS CATEGORY: SLAUGHTER
PRODUCT EXAMPLE: YOUNG CHICKEN

CCP# and Location	Critical Limits	Monitoring Procedures and Frequency	HACCP Records	Verification Procedures and Frequency	Corrective Actions
3B Chilling (All Products)	Temperature of 40° F or less will be reached within 4 hours on all product. Chlorine dioxide level in chiller will be maintained at > 20 ppm.	Product temperature check monitored by QA technician at end of chilling procedure (every hour of production). Chill water will be tested for Chlorine level every 2 hours by QA.	Chilling Log Carcass Chiller Recording Chart Neck/Giblet Chiller Recording Chart Thermometer Calibration Log Corrective Action Log Antimicrobial Log	Once per shift the QA supervisor will review the Chilling Log, Plant Post Chill Product Standards Form, and Antimicrobial Log. Maintenance supervisor will verify accuracy of the carcass chiller and neck/giblet chiller temperature recording charts once per shift. QA will verify the chlorine concentration in the chiller once per week. QA will check all thermometers used for monitoring and verification for accuracy daily and calibrate to within 2° F accuracy as necessary.	QA will reject or hold product dependent on time, temperature and or antimicrobial level deviation. QA will identify the cause of the deviation and prevent reoccurrence. Maintenance will check chiller circulation and water exchange rate and make adjustments as required. Any necessary repairs will be made. QA will monitor temperature and antimicrobial level in chiller every 2 hours until assured that process step is under control.

Signature: _____ **Date:** _____

Figure 4

HACCP PLAN

PROCESS CATEGORY: SLAUGHTER
PRODUCT EXAMPLE: YOUNG CHICKEN

CCP# and Location	Critical Limits	Monitoring Procedures and Frequency	HACCP Records	Verification Procedures and Frequency	Corrective Actions
4B Finished Product Storage (Cold) **(Continued on next page.)**	Finished product will not exceed 40° F.	Maintenance personnel will check product temperature on carcasses every two hours.	Chilling Log Thermometer Calibration Log Corrective Action Log	Maintenance supervisor will verify the accuracy of the product temperature log once per shift. QA will check all thermometers used for monitoring and verification activities for accuracy daily and calibrate to within 2° F accuracy as necessary. QA will observe maintenance personnel check finished product storage area once per shift.	If a deviation from a critical limit occurs, the following corrective actions will be taken: 1. The cause of the temperature exceeding 40° F will be identified and eliminated. 2. The CCP will be monitored hourly after the corrective action is taken to ensure that it is under control. 3. When the cause of the deviation is identified, measures will be taken to prevent it from recurring e.g., if the cause is equipment failure, preventive maintenance program will be reviewed and revised, if necessary.

Signature: _____ **Date:** _____

Figure 4

HACCP PLAN

PROCESS CATEGORY: SLAUGHTER
PRODUCT EXAMPLE: YOUNG CHICKEN

CCP# and Location	Critical Limits	Monitoring Procedures and Frequency	HACCP Records	Verification Procedures and Frequency	Corrective Actions
4B Finished Product Storage (Cold)					4. If product temperature exceeds the critical limit, the processing authority will evaluate the product time/temperature deviation before release for shipment. If time/temperature is not sufficient, product will be cooked in the establishment to ensure destruction of pathogens or condemned.

Signature: _____ Date: _____

Figure 4

REPROCESSING INSPECTION LOG

Date: _____ **Critical Limit: No visible fecal contamination entering chiller**

Time	Product ID	Results of Inspection	Monitor Initials	Verification Initials	Corrective Actions and/or Comments

Reviewed by: _____ **Date: _____**

CHILLING LOG

Date: _____ Critical Limit: Internal temperature of ≤40^0 F when product exits chiller

Time	Product ID	Internal Temperature	Monitor Initials	Verification Initials	Corrective Actions and/or Comments

Reviewed by: _____ Date: _____

THERMOMETER CALIBRATION LOG

Calibrate to 32^0 F while thermometer is in slush ice water

Date	Time	Department or Area	Thermometer ID#	Personal Thermometer Reading	Adjustment Required (Yes or No)	Initials	Comments *
6/15	1:00 PM	Carcass Chilling	2A	32°F	No	HK	

*** If a thermometer is broken or taken out of service, document this in the comment column**.

Reviewed by: _____ Date: _____

GENERIC ESTABLISHMENT X: ROOM TEMPERATURE LOG

ROOM:_____ **DATE**:_____

TIME	TEMP	Deviation from CL? (Check if yes)	If Yes, Action?	Monitored by:	Verified by:

ESTABLISHMENT X: Antimicrobial Intervention Monitoring Log							
Date	Lot #	Time	Solution Concentration	Pressure	Corrective Actions	Monitored by:	Verified by:

CORRECTIVE ACTIONS LOG

Product: _____ **Lot # _____**

CCP	Deviation/ Problem	Corrective Action Procedures/Explain	Disposition of Product	Responsible Person	Date/Time

SIGNATURE: _____ **DATE: _____**

PRE-SHIPMENT REVIEW LOG

Date:_____

PRODUCT	LOT ID	TIME RECORDS REVIEWED	BY WHOM	LOT RELEASED FOR SHIPMENT? SIGNATURE	COMMENTS *

*Monitoring frequency as per plan; Critical limits met; Certification (if applicable) as per plan; Deviations if occurred were reviewed for appropriate corrective actions; Records complete and accurate.