NSW Food Authority

General Guidelines for the Development and Implementation of a Food Safety Program

Table of Contents

The Use of NSW Food Authority Assistance Materials

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General Guidelines for Developing and Implementing a Food Safety Program

1. Introduction

This guideline has been prepared by the NSW Food Authority to assist businesses in developing and implementing a food safety program. This is based on the Hazard Analysis and Critical Control Point (HACCP) system as outlined by Codex Alimentarius Commission. This HACCP based food safety program will fulfill the requirements of "Standard 3.2.1 Food Safety Programs" of the Food Standards Code (FSC).

This document should be read in conjunction with the "***Food Safety Program Template Book***" in which you can record the details of your program, and your "***Industry Guide***" which gives relevant information specific to your industry sector.

In addition, it is important to note that food businesses must meet the requirements specified in "Standard 3.2.2 Food Safety Practices and General Requirements" and "Standard 3.2.3 Food Premises and Equipment" of the FSC.

What is a food safety program?

A food safety program is a set of practices and procedures that your business will need in order to manage food safety while it is in your care.

What does it consist of?

For most businesses, the food safety program will consist of a HACCP plan along with a number of support programs.

Codex based HACCP requires an organised approach to food safety controls and has some additional requirements that are not required to be documented and monitored under FSC 3.2.1. It is strongly recommended that these additional requirements are included in a food safety program to maximise its effectiveness.

What is HACCP ?

HACCP is a system which clearly identifies hazards and establishes controls that will prevent, eliminate or reduce hazards to an acceptable level.

HACCP forms part of many food businesses quality assurance system and is increasingly being included in food safety legislation both nationally and internationally.

There are 7 Principles of HACCP and it is generally regarded that there are 12 steps in the logical sequence of developing a HACCP food safety system. These are:

1. Assemble the HACCP Team
2. Describe the product
3. Identify the intended use
4. Construct a flow chart
5. On-site confirmation of flow chart
6. Conduct a hazard analysis (**Principle 1**)
7. Determine the critical control points (CCPs) **(Principle 2**)
8. Establish critical limits for each CCP (**Principle 3**)
9. Establish monitoring systems for each CCP (**Principle 4**)
10. Establish corrective actions (**Principle 5**)
11. Establish verification procedures (**Principle 6**)
12. Establish documentation and record keeping (**Principle 7**)

2. Developing your Food Safety Program

For HACCP to be successfully put into practice it requires commitment from everyone in the food business. In addition, knowledge of the process, product and potential hazards is needed to ensure the system will work effectively. Information specific to your business has been provided in your ***Industry Guide***. You are also advised to gather further information to help you understand how to control the hazards related to your industry and products.

The food safety program should include all components outlined in this section. In addition, for the program to be successful it must have support programs established, such as cleaning and sanitation, personal hygiene etc (refer to Section 3 of this guide). These will serve as a solid foundation to the effective implementation of a food safety program.

The development of the HACCP plan(s) will also involve:

- Developing the necessary work instructions or procedures;
- Developing the necessary worksheets/checklists; and
- Training staff in the monitoring and recording of critical control points and corrective action.

If a business is having difficulty with developing their program, assistance from external parties or consultants should be considered. This would be especially important when performing the hazard analysis, deciding on control measures for the hazards and determining CCP's and critical limits.

In Section 1. Introduction of the *Food Safety Program template Book*, give a general introduction of your organisation and the organisations philosophy towards food safety and quality management.

2.1 HACCP Team

The HACCP team, responsible for developing and maintaining this food safety plan, must be identified.

Where possible, this should be a multidisciplinary team using expertise from various groups within the site(s).

NOTE: This is Step 1 of the 12 steps in developing a HACCP food safety system.

A business will need to study its food handling operations and relate them to the food safety issues applicable to its product(s). As no one person usually has the complete knowledge required, development and implementation of HACCP is best achieved by a group of people usually referred to as a HACCP team.

Depending on the size of the business, a HACCP team should ideally consist of between three to seven people all with some knowledge of the food-related operations within the business and/or knowledge of the food safety hazards associated with the product. In addition, a HACCP team leader is usually nominated.

This person ensures that the HACCP process progresses as required and often deals with problems faced during the development and implementation of the program.

For some businesses this may be difficult, as the business may consist of only one or two people. In these cases all the people in the business would be involved in the development of the program.

In Section 2.1 of the *Food Safety Program template book*, record the people involved in your HACCP team.

2.2 Scope and Purpose

The scope and purpose of the HACCP food safety program should be defined.

At this stage it is also important to define the scope and purpose of the program. The scope is a statement outlining the products and processes covered by the HACCP plan and the parts of the operations it covers (the start and end point). The scope of the plan is important, as it is a reference point for many of the following steps involved in developing other HACCP plans in the business.

The purpose of the food safety program should also be defined. The purpose is a statement of the reason the program has been put into practice. For example: to ensure food safety and to enhance quality.

In Section 2.2 of the *Food Safety Program Template book*, record the scope and purpose.

Your *Industry Guide* may be able to provide you with more information.

2.3 Product Description and Intended use

The products covered by the program and their intended use must be defined.

NOTE: This is Steps 2 and 3 of the 12 steps in developing a HACCP food safety system

The product(s) should be described and the intended use(s) outlined as these assist in determining what hazards are associated with your product by describing the nature of the product.

Most businesses will need to state here if the product is to be cooked prior to consumption by the consumer, further processed by another business and/or served without any further processing.

It is also important to consider who will eat the food. If the business sells its product to the general public, then it could be expected that the product would be consumed by anyone. If it sells directly to at-risk groups, then this should be stated in the intended use.

At-risk groups are those who may be more prone to food poisoning and would include young children, pregnant women, the immunocompromised and the elderly (eg If food is sold directly to nursing homes or child care centres).

Your product description and intended use (Product Specifications) may include information such as:

- Product name (eg name used on the product)
- Ingredients used
- Form in which the product is sold (eg fresh/frozen/shelf-stable)
- Type of primary and secondary packaging (eg primary: packaging in contact with product, secondary: outer pack)
- Preservation methods (if any)
- Shelf life
- Storage and transport conditions required for the product
- Labelling (eg noting of any known allergens if required)
- The intended use by the consumer (eg indicate if the food is ready-to-eat or requires further processing)
- The consumers of the product (eg general population or specific group, such as a vulnerable population)

In Section 2.3 of the *Food Safety Program template book*, record the Product Description and Intended Use for each product you produce.

Your *Industry Guide* may be able to provide you with more information.

2.4 Process Flow Chart

A process flow chart must be constructed.

NOTE: This is Step 4 of the 12 steps in developing a HACCP food safety system.

The purpose of a process flow chart is to provide a simple, clear description of the steps involved in your process, ensuring that all processes mentioned in your scope are covered.

You may choose to draw a process flow chart for each product you produce or group products which use a similar process. For example a food premises may have a separate process flow chart for a beef stew and a curry beef OR they may wish to group these and call their process flow chart – “Process Flow Chart for Wet Sauce Dishes”.

The flow chart you develop should include all steps the product goes through while under your control, and in order of operation. It should also include any inputs into the process including ice, salt, food ingredients and chemicals etc. Use of symbols (for operation, storage, transport etc) is optional.

The process flow charts must be confirmed to be accurate and complete on site. (charts are confirmed as accurate when they are authorised and dated for issue).

NOTE: This is Step 5 of the 12 steps in developing a HACCP food safety system.

It is important that the flow chart(s) are correct and complete as they are the basis for the hazard analysis.

The HACCP team should take the flow chart to the area(s) where the food is handled and follow through the operations using the flow chart to ensure it shows that the same process is actually happening. If the process is different to what has been documented in the flow chart, then the flow chart should be corrected to reflect actual process.

Businesses may find it useful to ask someone in the business that hasn't been involved in drawing the flow chart to check the diagram. Often a fresh set of eyes will see things overlooked by those more closely involved in the process.

In Section 2.4 of the *Food Safety Program template book*, draw your flow chart.

Your *Industry Guide* may be able to provide you with more information.

2.5 Hazard Analysis

Documented evidence must be provided to demonstrate that a Hazard Analysis has been conducted.

NOTE: This is Step 6 of the 12 steps in developing a HACCP food safety system and HACCP Principle 1.

There are many different formats used for recording Hazard Analysis and the table in the *Food Safety Program Template book* is one option. This process is supported by the use of a decision tree, as in Figure 1.

All potential hazards that may occur at each step outlined in the flow chart must be identified. This is one of the most important steps when developing the program, as hazards not identified and therefore not controlled may lead to an unsafe product. When deciding what hazards may occur, consideration should be given to:

- the process that is occurring;
- the particular properties of the product;
- any other raw materials added;
- equipment in contact with the food;
- amount of contact by food handlers; and
- packaging or storage containers.

When identifying the hazards, only consider what is happening at that step. If other food substances are added, hazards related with these ingredients would also need to be identified.

What is a hazard?

A hazard is a biological, chemical or physical agent, or condition of food with the potential to cause an adverse health affect. Typical hazards include:

- Growth of food poisoning microorganisms (pathogens)
- Microbial or physical contamination from food handlers
- Microbial or physical contamination from equipment
- Survival of food poisoning microorganisms

More information on hazards related with your industry is provided in your ***Industry Guide***.

Control measures

Once a hazard has been identified, the next step is to consider what control measure(s) can be used for each hazard. Control measures (also referred to as preventative measures) are anything that will prevent, eliminate or reduce the hazard from occurring. In some cases effective support programs are sufficient to control a hazard (eg a cleaning and sanitation program) and so these can be documented as the control measure. In other cases, specific activities other than support programs are required to control a hazard, these are referred to as critical control points and are discussed in detail further in Section 2.5.1.

More than one control measure may be used to control a hazard, and a control measure may be used for more than one hazard. Some typical control measures are provided in your ***Industry Guide***.

In Section 2.5 of the *Food Safety Program template book*, record your hazard analysis.

This will require you to write the name of the step in the table and next to each step, write any hazards associated with the step. Then, for each hazard, record the control measure(s).

This should be repeated for each step and for each of the hazards identified.

Your *Industry Guide* may be able to provide you with more information.

2.5.1 Determine Critical Control Points

As part of the hazard analysis, CCP's must be identified.

CCP's are defined as a step at which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.

NOTE: This is Step 7 of the 12 steps in developing a HACCP food safety system and HACCP Principle 2.

The next step in the hazard analysis is to determine critical control points (CCP's) from the hazards you have identified. CCP's are usually steps in the process where a control measure is critical to ensure safety. Determining if a CCP is needed can be achieved by using the CCP decision tree as shown on Page 11. The decision tree is a series of questions that should be asked for each hazard at each step to determine if a CCP is required at that step.

It would be expected that different types of businesses will have different CCP's, although generally speaking CCP's would include cooking, storage and transportation steps for ready-to-eat products.

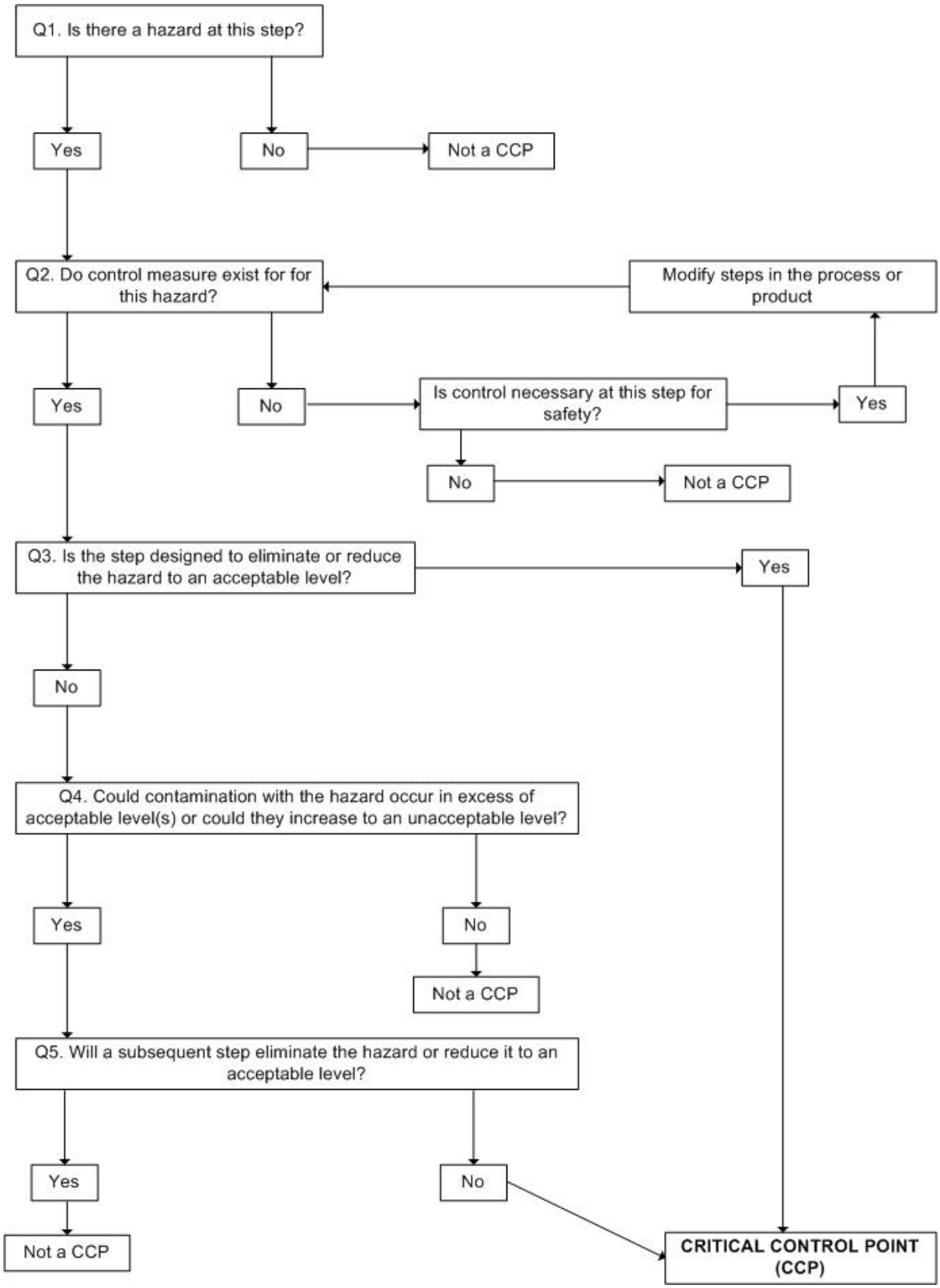
Sometimes, the CCP Decision Tree will identify a hazard as a CCP, but if an effective support program has been put in place (eg Cleaning and Sanitation Program) then the CCP can be classified as a support program instead.

For each of the hazards lists in Section 2.5 of the *Food Safety Program Template book*, use the CCP decision tree (Figure 1) to determine your CCP's. Record your results in the table in Section 2.5

Your *Industry Guide* may be able to provide you with more information.

For each CCP identified record the step, hazard and control measure in the corresponding heading in Section 2.6 Hazard Audit Table of the *Food Safety Program Template book*.

Figure 1: CCP Decision Tree (Codex Alimentarius Commission.1997).



2.6 Hazard Audit Table

The Hazard Audit Table is used to determine how you will control each of your Critical Control Points. For each CCP you will need to establish and document:

- The critical limit;
- How you will monitor it;
- What to do if you exceed the critical limit; and
- How you will record you CCP results. Note: All CCPs will need to be recorded.

2.6.1 Establish Critical Limits

Critical limits must be established and validated if possible for each CCP.

This information is noted on the Hazard Audit Table.

NOTE: This is Step 8 of the 12 steps in developing a HACCP food safety system and HACCP Principle 3.

Once a business has identified its CCP's, it must determine at what point the product may become unsafe at that particular step in the process. These are usually referred to as critical limits and are normally a measure (limit/specification/tolerance) that separates acceptable product from unacceptable product. Numerical values must include units and maximum, minimum or acceptable range of values.

Critical limits usually refer to a parameter that can be checked while the step is occurring (eg. time) so that if the limit is exceeded, effective corrective action can be taken immediately to correct the process and to prevent the unsafe product from reaching the consumer. For this reason, microbiological testing is usually not a critical limit, as results may not be available before the product has been passed on to the buyer and possibly consumed by the customer. Therefore hazards that relate to food poisoning micro-organisms are typically controlled by effective temperature control and/or control of chemical parameters of the food (eg pH and salt). Examples of typical critical limits include:

- Temperature and time parameters for cooking
- Temperature for storage and transportation
- Chemical testing such as pH and salt measurements
- Physical checks such as the presence of foreign objects

Critical limits are usually set based on scientific information. For example, it is generally accepted that perishable food should be kept at or below 5°C to stop most food poisoning micro-organisms from growing. Therefore the critical limit for the storage and transportation of foods is usually 5°C or less.

Critical limits must be referenced, validated and based on recognised standards such as regulatory requirements or scientific data.

If you are unsure of what the critical limit for the CCP will be you may refer to:

- Information from the Industry Guide,
- Industry Codes of Practice,
- Regulatory requirements or
- Published scientific information such as recognised scientific papers or literature.

In addition, some businesses may find it worthwhile obtaining external assistance.

It is essential to check that the control measures in the food safety system are achieving their aim and keeping food safe.

Validation (Justification) of Critical Limits.

It is important to remember that the critical limit **must** control the hazards. Unless the critical limit is a commonly accepted limit, such as the storage temperature of foods in accordance with the Food Standards Code, businesses will need to show proof that the critical limit will differentiate between safe and unsafe food.

This will usually involve having some documented information outlining the source reference, or a validation study showing data, to justify each critical limit. A table summarising the justification for each CCP is recommended.

Validation of processes may consist of a number of components:

- Reference to industry guidelines and Codes of Practice eg accepted time temperature parameters for cooking.
- Reference to regulated standards eg compliance to the *Food Standards Code 3.2.2.*
- Intensive product testing may be used to validate a change to a process.
- Environmental testing may be used to validate the effectiveness of a cleaning system.

This documented evidence should be maintained and revised whenever any changes to the product or process are made to support the justification of the critical limits established for the food safety program.

In Section 2.6 of the *Food Safety Program template book*, record the critical limit for each CCP.

A justification table for each CCP should be set up and documented – Refer to 2.6.1 of Template.

Your *Industry Guide* may be able to provide you with more information.

2.6.2 Establish Monitoring Procedures

Monitoring is the scheduled measurement or observation of a CCP against its critical limits.

This requirement is noted on the Hazard Audit Table.

NOTE: This is Step 9 of the 12 steps in developing a HACCP food safety system and HACCP Principle 4.

Once the critical limits have been determined, requirements for measuring against the critical limit needs to be established (eg monitoring procedure). The monitoring procedures must state:

- **What** is to be monitored;
- **When** the monitoring will occur (frequency);
- **Who** performs the monitoring; and
- **How** it will be monitored.

Examples of monitoring procedures include:

- Temperature checks;
- Measuring the chlorine concentration in water;
- Measuring the pH of a food;
- Measuring the salt concentration;

The data collected must be recorded accurately (eg on a recording form – refer to Form 2 of the template) as per Section 2.6.5 and kept on file at all times.

In Section 2.6 of the *Food Safety Program template book*, record the monitoring procedures for each CCP.

Your *Industry Guide* may be able to provide you with more information.

2.6.3 Establish Corrective Actions

You must determine and document corrective actions to be taken when monitoring shows that critical limits are not met.

This information is noted on the Hazard Audit Table.

NOTE: This is Step 10 of the 12 steps in developing a HACCP food safety system and HACCP Principle 5.

If the monitoring reveals that the critical limit has not been met, a business will need to have corrective actions in place that rectifies the situation. The corrective action procedure should state:

- How to bring the process back under control;
- What to do with product produced while the process was not controlled; and
- Who is responsible for the corrective action?

Product produced while the process was not under control should either be reworked/reprocessed or rejected.

Reworking or reprocessing the product should only occur if the business can assure that the hazard(s) can be eliminated or reduced to a safe level.

A record of the corrective action(s) taken must be maintained.

In Section 2.6 of the *Food Safety Program template book*, record the corrective action for each CCP.

Your *Industry Guide* includes some examples of monitoring procedures for some steps.

2.6.4 Establish Verification Procedures

Procedures for verification must be established. This includes checks to verify that the HACCP food safety program is achieving its purpose of providing safe food.

Verification activities should be documented, for example on the Hazard Audit Table or on a separate table.

NOTE: This is Step 11 of the 12 steps in developing a HACCP food safety system and HACCP Principle 6.

One of the final steps involved in the HACCP system is to establish verification procedures. This can include verifying CCP's and support programs are effective. Verification procedures are post-process checks on the program to ensure it meets its objective to control food safety. Examples of checks you may undertake:

- Review of records to ensure monitoring is occurring in accordance with the HACCP plan and when necessary, corrective actions are taken;
- Internal audit of support program(s); and
- Testing of product/process to ensure CCP's are effective in controlling the safety of the food (an example of a testing schedule is included in the Appendix of the *Food Safety Program Template book)*. This may include chemical testing as well as process testing.

The frequency of verification activities will differ depending on the activity undertaken. You may check your records weekly to ensure recording is occurring. Confirmation of this could simply be a signature of the person checking on the bottom of each weekly record.

You should ensure that the entire system is reviewed at least annually and whenever there are changes to the product or process. This would include:

- Ensuring all product is covered by the HACCP program;
- Reconfirming the flow chart;
- Reviewing hazard analysis
- Reviewing monitoring procedures and recording; and
- Reviewing corrective actions and recording.

Should the verification activities reveal that the system was not working correctly then revisions of the system should occur. For example:

- If records of monitoring and/or corrective actions were not taken then it may be necessary for the business to retrain the person involved;
- If the internal audit reveals that the flow chart does not reflect the process, then the HACCP program would need to be revised;

- If product testing reveals that the hazard was not being controlled then it would be necessary to revise the HACCP program, in particular the CCP's and critical limits; and
- The review of the hazard analysis may result in changes to the CCP's.

In Section 2.6 of the *Food Safety Program template book*, record the verification activities established for each CCP.

Your *Industry Guide* may be able to provide you with more information.

You should review this Section and ensure that you comply with the CCP.

See Table 2.6.2 in Template book to record your verification activities.

As an example of a verification activity, a schedule for final product testing is shown in the Appendix of the *Food Safety Program template book* (Form 11 – Product Testing Schedule).

2.6.5 Establish Documentation and Record Keeping

Efficient and accurate record keeping is essential to the application of a HACCP system.

NOTE: This is Step 12 of the 12 steps in developing a HACCP food safety system and HACCP Principle 7.

The last step in developing your HACCP plan involves preparing the documentation required. Most businesses will need to have:

- Your process flow chart(s), hazard analysis and hazard audit tables documented;
- Instruction sheets or procedures for its processes, detailing how to perform the activity, monitoring procedures and corrective actions;
- Records for each monitoring activity and corrective action taken; and
- Verification procedures documented.

It is important that monitoring sheets used to record CCP's are designed to collect the information when the process is occurring. Information can be recorded on paper manually or by computer. It is important that actual information is collected at the time, data is not transposed (re-written) onto a "clean" sheet and that the data is not lost.

The *Food Safety Program template book* has been developed to allow you to document your program.

In Section 2.6 of the *Food Safety Program Template book* record all the necessary monitoring information.

Your *Industry Guide* may be able to provide you with more information.

For further related information on document and data control refer to Section 3.11 below.

3 Support Programs

Support programs are the general food safety and hygiene requirements which all food businesses must follow.

They include Good Manufacturing Practices (GMP) or Good Hygienic Practices (GHP) and are necessary to support the controls for establishing food safety.

What do Support Programs cover?

The support programs include a wide range of activities and programs essential to ensure food safety, and may include:

- Maintenance – including design, construction and condition of premises, equipment, vessels or vehicles;
- Approved Supplier Program;
- Good Food Handling Practices;
- Cleaning and Sanitation;
- Pest Control Program;
- Personal Hygiene Program;
- Product Recall Program;
- Staff Training Program;
- Calibration Program;
- Internal Audit Program;
- Document and Data Control Program;
- And others as required.

There may also be support programs specific for your industry sectors. These have been included in your *Industry Guide*.

Details of Support Programs should be recorded in Section 3 of the *Food Safety Program template book*.

You will need to develop your own procedures for support programs based on the information below. The *Industry Guide* may be able to provide you with more information.

3.1 Maintenance Program

Maintenance of buildings and equipment is important to minimise the risk of food contamination.

The Food Standards Code 3.2.3 sets out the requirements for Food Premises and Equipment.

The premises and food handling equipment should be designed, constructed and maintained in a way that will reduce the chance of food becoming contaminated.

Poorly maintained or damaged equipment and buildings may result in possible physical, chemical and biological contamination of food.

A maintenance program should be established and should include:

- A system to regularly review condition of building structure and equipment (eg monthly maintenance check by the manager or delegated employee to ensure the integrity of the building and equipment; and daily checks prior to work commencing in the premises and operation of equipment to ensure it is satisfactory to use. This information is to be recorded).
- Ensure that all corrective action is documented.
- Monthly maintenance check.
- Preventative maintenance where machinery servicing is scheduled.
- Ensure changes made to buildings and equipment that may impact food safety is documented. For example:
  - Building construction activities may increase the risk of contamination from bacteria, pests or foreign matter.

NOTE: New equipment or changes to existing equipment may require new verification studies, such as re-evaluating temperature controls.

In Section 3.1 of the *Food Safety Program template book*, document the Maintenance Program for your organisation.

3.2 Approved Supplier Program

Controls should be in place to ensure that the safety of supplies is acceptable.

Businesses need to set up a system for approving and reviewing their suppliers. Your business may choose some of the following approaches:

- Some businesses may decide to purchase high risk foods only from suppliers who have a food safety system in place.
- Businesses should have a list of all suppliers used, their contact details and materials they supply. This would assist with traceability.
- Ideally the performance of suppliers should also be monitored – this may include a history of their ability to supply within an agreed specification.

- Ideally a record of all suppliers and a copy of their HACCP certification to prove accreditation status.

Suppliers test results, where applicable, are to be available for audit. Supplier certification may be an appropriate alternative.

All information should be recorded along with any correction action taken.

In Section 3.2 of the *Food Safety Program template book*, document the Approved Supplier Program for your organisation.

3.3 Good Food Handling Practices

It is essential to ensure good handling practices are maintained throughout the whole process.

All foods are to be stored and transported under the conditions prescribed in the Food Standards Code 3.2.2. They must meet temperature and hygiene requirements.

A business should establish policies and procedures for good handling practices in the following areas:

- packaging
- storage
- handling practices
- temperature monitoring procedures
- waste management
- food disposal

Some of the types of issues and checks may include:

- A Pre-Operational Checklist – an example can be found in the Appendix (Form 8) of the Food Safety Program Template book. This type of check can be used at the commencement of each shift/day to ensure the premises and equipment are satisfactory to use. Also refer to the Hygiene and Sanitation Program.
- Receival of Raw Materials - all raw materials are checked to ensure product quality and all relevant information along with any correction action taken is recorded – an example of a Product Receival Sheet can be found in the appendix (Form 5) of the Food Safety Program Template book. Also refer to the Approved Supplier Program.
- Storage - there are three important factors to consider when storing food:
  - Appropriate temperature control
  - Stock rotation
  - Prevention of contamination

- If storing and transporting refrigerated food, ensure temperature is at 5°C or less. As an example, prior to dispatch of the product, the temperature is recorded on the Product Despatch Sheet (Refer to Appendix (Form 7) of the Food Safety Program Template book).

Further examples of workplace activities regarding good handling practices are shown in Forms 5, 6 and 7 in the Appendix.

In Section 3.3 of the *Food Safety Program template book*, document the Good Food Handling Practices for your organisation.

Examples of good handling policies are outlined in Appendix 5 of this document.

3.4 Cleaning and Sanitation Program

Proper cleaning and sanitation will decrease the likelihood of the food becoming contaminated and will discourage pests from the premises and vehicles.

Cleaning *The removal of waste, dirt and grease from equipment, premises and vehicles.*

Sanitation *Reduces the number of microorganisms present.*

A cleaning and sanitation program should be set up to include a cleaning schedule and cleaning procedures which are documented. The schedule procedures should cover processing areas, amenities, coolrooms, storerooms, wash rooms etc. as well as utensils and equipment, floors, walls, drains etc. The following should be addressed in the procedure:

- How is the cleaning/sanitation conducted,
- frequency of cleaning,
- use of chemicals,
- other points to consider regarding your cleaning and sanitation program.

Cleaning detergent solution strengths, times and temperature requirements are to be in accordance with the manufacturer's specifications.

All chemicals used for cleaning and sanitation should be stored away from any food.

Generally, food handling areas should be cleaned at least daily and food contact surfaces, equipment and utensils should be sanitised more frequently if required.

The verification of the effectiveness of cleaning should be determined; this may include visual assessment and regular environmental swabbing as part of the verification program (refer to Section 2.6.4).

A pre-operational hygiene check of the premises may be carried out to ensure that all surfaces are clean prior to use and recorded on a Pre-operational Checklist (refer to Food Safety Template book appendix Form 8).

Evidence that all chemicals used in the processing area and hand wash stations are suitable for use with food products should be available. Chemicals must be well labelled at all times.

Material Safety Data Sheets (MSDS) for all chemicals stored and/or used should be kept. It is suggested that a list be kept of all chemicals used on site, their suitability for use in food processing areas (if the chemical is to be used in a food handling or processing area) and where the chemical is used.

In Section 3.4 of the *Food Safety Program template book*, document the Cleaning and Sanitation Program for your organisation.

3.5 Pest Control Program

Animals and pests including insects and rodents must be excluded from the premises.

A Pest Control Program must be established and documented. It must be effective without posing any risk to food safety.

Listed below are issues regarding pest control and chemical application you must comply with. You must also document this information in a documented procedure.

This Pest Control Program should include:

- A documented procedure for regular inspections. It should cover the effectiveness of flyscreens, doors, insectocutors, air locks etc. and results recorded.
- You should document the location of bait and insect stations used.

  NOTE: Bait and insect stations are not permitted to be placed in areas where food is stored or processed. Instead a perimeter border of bait stations around the building can be used. Any bait stations are checked regularly in accordance with an inspection program.

When using chemicals ensure that:

- All chemicals are used in accordance with the manufacturer's instructions;
- Chemicals are not used near food; and
- Chemicals are not applied to food contact surfaces. If chemicals contaminate food contact surfaces and equipment, affected areas must be washed well before use.
- All chemicals used for pest control must be stored away from any food.

  NOTE: Chemicals used for pest control can be extremely hazardous and there are other government regulations you must comply with (eg. NSW Workcover). You should seek expert advice before using chemicals to control pests.

If premises are treated by a pest control company the business will need to:

- Ensure chemicals are not applied during food processing
- Obtain a report from the pest control company and retain for audit.

Records of pest control contractor visit, pest control treatments and contract details must be held on site.

In Section 3.5 of the *Food Safety Program template book*, document the Pest Control Program for your organisation.

Your *Industry Guide* may be able to provide you with more information.

3.6 Personal Hygiene Program

Personal hygiene, staff clothing and headwear must comply with Food Standards Code 3.2.2 requirements.

Policies and procedures should be established to ensure that staff and their conduct do not adversely impact on food safety.

Procedures must be in place to ensure that activities of food handlers who may be suffering from a food-borne disease or are a carrier of a food-borne disease is in accordance with FSC 3.2.2 (14).

In Section 3.6 of the *Food Safety Program template book*, document the Personal Hygiene Program for your organisation.

An example of a personal hygiene policy is provided in Appendix 4 of this document.

3.7 Product Recall Program

The FSC 3.2.2 (12) requires that wholesale suppliers, manufacturers and importers have a recall system that will ensure that unsafe food is returned to the supplier.

A product recall program must be developed to enable the retrieval of unsafe product that has been distributed to other businesses and/or the consumer in order to protect the consumer.

Hence, it is essential to be able to trace products to the manufacturer and the raw materials used.

Product may need to be recalled if it is:

- Not from an approved source
- Contaminated with harmful microorganisms
- Contaminated with harmful chemicals
- Contaminated with physical matter (eg glass, wood)
- Has been tampered with.

Therefore records may need to be kept of:

- Batch codes of ingredients and raw materials used
- Batch coding, volumes produced etc to allow for in-process traceability
- List of all customers and sale information as well as invoices for product delivered and/or despatch records in order to identify where product has been delivered to (if relevant)

In the event of a product recall, the program will need to be controlled by the manager or delegated employee of the business and the system as defined in the guide *Food Recall Protocol* prepared by Food Standards Australia New Zealand (FSANZ) should be used. A copy of this document should be held with this manual.

A list of Government Food Recall Officers supplied by FSANZ must be held. FSANZ is to be contacted in the event of a recall. They can be contacted on 02 6271 2222 during normal business hours or on weekends / after hours on 0412166965

The NSW Food Authority should also be contacted in the event of a recall on (02) 9741 4777.

All packages of food are required to be labelled in accordance with the Food Standards Code, Part 1.2 Labelling and other information requirements.

Care should be taken to ensure labelling requirements are met. It is particularly important to declare ingredients to prevent potential adverse health reactions (eg allergic reactions) and to correctly label date codes etc for the purposed of traceability and to facilitate potential product recalls.

Details on the requirements of food labelling can be found at the following website:

http://www.foodstandards.gov.au/assistanceforindustry/userguides/index.cfm

In Section 3.7 of the *Food Safety Program template book*, document the Product Recall Program for your organisation.

3.8 Staff Training Program

A food business must ensure that persons undertaking or supervising food handling operations have skills in and knowledge of food safety and hygiene matters commensurate with their work activities.

All staff must be trained to enable them to perform their job safely and competently.

All new staff should receive an induction covering instructions on how to perform their duties to ensure good food handling procedures are followed.

Training can be conducted internally or externally and may include:

- Good personal hygiene;
- Food handling procedures; and
- Cleaning and sanitation, including:
  - Correct storage and handling of chemicals;
  - Correct make up of the chemicals; and
  - Procedure for cleaning and sanitation.

Training of staff should be recorded and show the dates training was completed and proposed future training for all staff. A simple table recording staff knowledge, training and ability (a training matrix) is recommended see eg in *Food Safety Program template book*).

In Section 3.8 of the *Food Safety Program template book*, document the Staff Training Program for your organisation.

3.9 Calibration Program

All equipment used at the premises must be calibrated and maintained in working order.

The accuracy of all equipment used to conduct inspections and testing must be monitored to ensure that it is reading correctly. For example, if a thermometer used to check a critical heating temperature is not reading accurately, you may not know that process requirements are not being met.

All equipment used to conduct food safety system checks must be calibrated. This may include scales, thermometers.

Calibration procedures, for both internal and external (contracted) calibration, must be documented. Records of all calibration must be kept and be available for review during audits.

Calibration procedures must include:

- A master list of all equipment to be calibrated
- The frequency of calibration for each instrument.
- Each instrument that is calibrated must be uniquely identified in the calibration documents and on the instrument.
- Equipment which is not calibrated must be clearly identified.

- The maximum error allowed before corrective action is required must be stated.
- The corrective action to be taken when instruments are found to be out of specification.

In Section 3.9 of the *Food Safety Program template book*, document the Calibration Program for your organisation.

An example of a calibration method and calibration intervals is outlined in Appendix 3 of this document.

3.10 Internal Audit Program

Internal Audits are conducted to ensure that practices comply with the requirements of the food safety program (the manual) and are adequate to ensure food safety.

Internal audits should review the entire system. They review compliance to the system described in the food safety manual and the ability of the system to achieve its purpose. They also identify areas of non-compliance (so that corrective and preventative action can be taken).

Internal audits are generally conducted by staff within the organisation. Where possible, these staff should be independent of the operation being audited.

An internal audit is conducted:

- When the products that are produced changes;
- When the process changes; or
- At least annually

An internal audit checklist may be used (see example in the *Food Safety Program template book)*

The findings of the internal audits must be documented, retained and available for audit for four years.

The findings must be brought to the attention of personnel responsible for the section being audited. Managers responsible for the area are to take timely corrective action on deficiencies found during the audit. A record must be kept of action taken.

In Section 3.10 of the *Food Safety Program template book*, document the Internal Audit Program for your organisation.

3.11 Document & Data Control Program

Effective document and data control ensures that

- *people can be confident that they are using the current version of a document, and*
- *the information contained in these documents has been approved by management*

The following should be followed:

- All documents should be identified, authorised and dated.
- Obsolete and/or invalid documents must be removed
- Current documents may be held in a master manual which can be a "working" manual or held electronically.
- Diaries are an accepted document in smaller operations.
- Ticks or crosses are generally not acceptable records.
- Data entry / records are to be signed.

Records of HACCP checks and compliance to procedures provide evidence to auditors and management that the system is being complied with. Records could include data recorders, cleaning, cool room temperature data and temperature loggers.

Records can be held electronically but must be accessible and retained for a minimum of 12 months.

In Section 3.11 of the *Food Safety Program template book*, document the Validation Program for your organisation.

Appendix 1 - Glossary

Codex Alimentarius Commission – The Commission was created by FAO/WHO to develop food standards, guidelines and related codes of practice. In 1993 the Commission adopted the Codex Guidelines for the Application of HACCP. This document refers to Codex HACCP.

Critical Control Point (CCP) – a step at which an essential control process can be applied which will prevent, reduce to an acceptable level or eliminate a food safety hazard or reduce it to an acceptable level.

Food Safety Program - as described by FSC 3.2.1 and/or Codex Based HACCP.

HACCP (Hazard Analysis and Critical Control Point) – a system that identifies, evaluates, controls and prevents specific hazards to ensure the safety of food.

Hazard – a biological, chemical or physical agent in, or condition of food, with the potential to cause an adverse health effect.

Pathogen – an agent, such as bacteria, that can cause disease.

Retrieval – product that may be considered a risk to consumers and may need to be recalled or retrieved.

Vulnerable Populations - the elderly (70 and over), the immunocompromised, pregnant women, and children aged four years or less (as described by the FSANZ Advisory Group).

Appendix 2 - References / Bibliography

The following publications may be useful:

- Hazard Analysis and Critical Control Point (HACCP) System and Guidelines for its Application, Alinorm 97/13 Appendix II
- Food Standards Code – Food Standards Australia New Zealand www.foodstandards.gov.au
- Food Recall Protocol – Food Standards Australia New Zealand.
- NSW Food Act 2003
- Food borne Microorganisms of Public Health Significance. Hocking AD (ed) AIFST (NSW Food Microbiology Group) 6th Ed. 2003
- Microorganisms in Foods 4. Application of the Hazard Analysis Critical Control Point (HACCP) System to Ensure Microbial Safety and Quality. International Commission on Microbiological Specifications for Foods (ICMSF). Blackwell Scientific Publications. 1st Ed. 1988.
- Microorganisms in Foods 5. Characteristics of Microbial Pathogens. International Commission on Microbiological Specifications for Foods (ICMSF). Aspen Publishers. 1st Ed. 1996.
- Microorganisms in Foods 6. Microbial Ecology of Food Commodities. International Commission on Microbiological Specifications for Foods (ICMSF). Aspen Publishers. 1st Ed. 1998.
- Microorganisms in Foods 7. Microbiological Testing in Food Safety Management. International Commission on Microbiological Specifications for Foods (ICMSF). Kluwer Academic. 1st Ed. 2002
- Basic Text on Food Hygiene. Codex Alimentarius Commission.1997.

Appendix 3 - Example of Calibration Methods for Thermometers

Thermometer/temperature gauge calibration

Hand-held thermometers are calibrated monthly and results recorded on the Monthly Maintenance Checklist (Form 1). If in-house calibration of the temperature gauges on coolrooms/freezers occurs then this is also recorded on the same checklist.

Thermometer gauges on coolrooms, freezers and ice rooms are calibrated every 6 months and the calibration result recorded in the records diary.

Thermometers used to measure the temperature of both cold and hot potentially hazardous foods are calibrated using an 'Ice Point Check' and a 'Boiling Point Check".

An example of calibration intervals is outlined:

Fixed and / or digital thermometers	6 monthly
Hand held thermometers	Monthly

Handheld Thermometer Calibration Method:

Ice Point Check:

- Make sure that the thermometer has been at ambient room temperature for at least 10 minutes.
- Fill a small insulated container (eg. small foam esky) with crushed ice that has been made from potable water (town drinking water is OK).
- Add a little water to the container, no more than one third the quantity of ice, to start the ice melting. Pour off the excess water.
- Place the thermometer probe in the centre of the container so that the point of the probe is in contact with the ice. The point of the probe should not touch the base of the container.
- Leave for about 10 minutes to obtain a steady reading.
- Read the temperature on the thermometer. If:
    - The thermometer is accurate it should read 0^{o}C.
    - The temperature is not at 0°C note the difference in the temperature reading. For example, if the thermometer is 0.5C, then the difference is -0.5C.
    - The temperature is greater than 1°C or colder than -1°C, it is recommended that thermometers be replaced or returned to the manufacturer for servicing.
- When using the thermometer the difference must be used as a correction factor. For example, if the difference of the thermometer was -0.5°C and the product temperature was 4.0°C, then the correct temperature would be 4.0 – 0.5 = 3.5°C

Boiling Point Check:

- Make sure that the thermometer has been at ambient room temperature for at least 10 minutes.
- Boil an amount of water in a saucepan/pot.
- Place the thermometer probe in the centre of the pot so that point of the probe does not touch the base of the saucepan/pot.
- Leave until a steady reading is obtained.
- Read the temperature on the thermometer. If:
    - The thermometer is accurate it should read 100^{o}C.
    - The temperature is not at 100°C note the difference in the temperature reading. For example, if the thermometer is 100.5C, then the difference is -0.5C.
    - The temperature is greater than 1°C or colder than -1°C, it is recommended that thermometers be replaced or returned to the manufacturer for servicing.
- When using the thermometer the difference must be used as a correction factor. For example, if the difference of the thermometer was -0.5°C and the product temperature was 90.0°C, then the correct temperature would be 90.0 – 0.5 = 89.5°C

Chiller/Freezer Gauges Calibration Method

- Once the handheld thermometer is calibrated it can also be used to check the accuracy of any temperature gauges on equipment such as coolrooms and freezer. This should be done at least 6 monthly and can be done by:
- Placing the thermometer in the coolroom/freezer, with the thermometer probe placed as close to the gauge probe as possible, for at least 5 minutes (making sure not to open the door during this period).
- After this period, read the temperature on the thermometer (taking into account any difference noted during the calibration of the handheld thermometer).
- Read the temperature on the gauge and determine any difference between the handheld thermometer reading and the gauge, as above.

NOTE:

Temperature monitoring procedure

- Prior to taking the temperature, the probe is to be:
    - Checked to ensure it is clean. If not, it is to be cleaned with warm water and a mild detergent and dried with a clean cloth.
    - Once clean the probe is sanitised using an alcohol swab or hot water at >77°C.
- The probe is then allowed to air dry without touching anything.

- The temperature of the food is then taken by inserting the probe into the item and allowing it to stabilise for one minute before reading the temperature. For packaged product, the probe is placed between two packages.
- After each temperature measurement the probe is cleaned and re-sanitised as above, and stored in a safe and clean area.

Appendix 4 - Example of Personal Hygiene Policy

The following is a general guide for all personnel including visitors:

- Clean clothing is to be worn by everyone entering the food handling area. Coverings such as aprons are not worn outside the food handling area. Disposable coverings are changed and disposed of regularly, especially when changing work duties, taking breaks and when going to the toilet.
- Hair must not be able to contaminate food. Long hair must be tied back or covered with a hair net. Beards are to be kept tidy or beard snoods used.
- All people must wash their hands prior to handling of food. Where gloves are used, they are kept clean and intact.
- Fingernails are kept short and clean with no nail polish or false nails.
- Only plain wedding band rings are worn in the food handling area.
- People with sores, boils, cuts or abrasions must not handle food unless:
  - The affected area is covered with a waterproof adhesive dressing; and
  - The food cannot be contaminated.
- All persons must ensure they:
  - Do not eat over food or food handling surfaces;
  - Do not smoke in food handling areas; and
  - Do not sneeze, blow or cough over uncovered food or food contact surfaces.
- All personnel handling food shall be knowingly free from infectious diseases or skin conditions, which may be transmitted through the handling of food products.

Any personnel suffering from a transmittable condition or symptoms of food borne disease (such as diarrhoea or vomiting) shall not engage in food handling if there is any possibility of them contaminating the products being processed/delivered.

Appendix 5 - Examples of Good Handling Policies

Below are listed some issues for consideration when developing policies relating to Good Handling Practices.

Storage

- As soon as supplies are received they should be placed in the appropriate storage area (freezer, coolroom or dry storage area).
- Packaging materials must be stored in a manner that prevents contamination by dust, vermin and chemicals. Opened boxes of packaging material must be sealed between production days.
- All stock should be rotated to ensure the oldest stock is used first. Prior to use, any expiry dates are checked and if the product has expired it is not to be used.
- Products should be either stored in the original packaging or transferred to food-grade packaging. If product is not packaged/sealed, then it should be covered.
- Raw food is stored separately to ready-to-eat food – if separate storage areas are not available, ready-to-eat food is stored above raw.
- All dry products are stored in a manner to prevent contamination from moisture, dust, dirt, pests and rodents.
- All perishable/refrigerated/frozen foods must be stored under temperature control.
- Refrigerated products – stored at 5°C or less
- Frozen products – stored at 18°C or less
- All products are stored and transported at 5°C or less.

Waste management

Procedures for handling waste materials and cleaning waste bins should be documented.

Food disposal

Unsafe product is to be disposed of properly to ensure that it is not included with food for sale.
Food may need to be disposed of because:

- Of a product recall;
- The product has exceeded its shelf life; or
- The product does not comply with your food safety program.

If food is to be disposed of but cannot be discarded immediately it is marked clearly with ‘HOLD’ for disposal, and separated from other food.

Equipment

- Unsealed wood and timber are not to be used in food handling areas.
- All equipment should only be used for what it was intended and should be kept clean and well maintained.
- Equipment such as coolrooms, freezers and ice rooms should be serviced and temperature gauges should be calibrated regularly (eg every six months).
- If food transport vehicles are used they must be maintained in a clean and sound condition so that food does not become contaminated.
- If refrigerated food is transported, vehicles with refrigeration units may be used and should be serviced regularly to ensure the vehicle will maintain food at 5°C or less. Records of maintenance activities should be kept.