IFSA
INTERNATIONAL FLIGHT SERVICES ASSOCIATION

WORLD FOOD SAFETY GUIDELINES FOR AIRLINE CATERING 2022

INTERNATIONAL FLIGHT SERVICES ASSOCIATION

IFSA
World Food Safety Guidelines
2022
Version 5

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Preface

The World Food Safety Guidelines (WFSG) evolved from the collaboration between the airline catering industry and federal regulatory agencies with major roles in setting the safe operating standards for catering, customer and crew consumption of food, drink and water provided on the airlines. The federal government agencies and departments were the United States Department of Agriculture (USDA), Centers for Disease Control and Prevention (CDC), United States Food and Drug Administration (FDA) and the Environmental Protection Agency (EPA), along with Federal Aviation Administration (FAA).

The current regulations administered by the U.S. Food and Drug Administration (FDA) found in 21 CFR Parts 1240, Control of Communicable Diseases and 21 CFR Part 1250, Interstate Conveyance Sanitation are the primary enforcement regulations that apply to airline caterers directly. The other regulations are administered by EPA, CDC, FAA, and USDA.

The WFSG global collaborations began with FDA's use of the 1976 Food Service Sanitation Manual used to audit and score the operations of airline caterers, passenger trains and vessels under U.S. flag. The CDC established the same program in collaboration with the International Cruise Lines under foreign flags operating from U.S. ports under the same principles and regulations. This common basis for public health protection and auditing functions demonstrated the domestic and international application of the same public health principles regarding the operations of all passenger carriers worldwide. These efforts were also the impetus for the publication of the WHO Guide to Hygiene and Sanitation in Aviation: https://www.who.int/publications/i/item/9789241547772. This publication covers catering, waste, water, sanitation, communicable disease control in aviation internationally.

Currently, the IFSA Government Affairs Education Committee (GAEC) has global participation from caterers and airline members with expertise in food safety, quality management and airline catering. The collaborative efforts of the GAEC working team resulted in the WFSG 2022 update that builds on the WFSG 2016 document. WFSG 2022 incorporates elements from a globally recognized Global Food Safety Initiative (GFSI) scheme Food Safety System Certification (FSSC 22000) specifically ISO 22000:2018, ISO / TS 22002-2:2013 and FSSC 22000 Version 5.1, November 2020

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1. Introduction

WFSG 2022 is designed to assist the airline catering industry enhance their current food safety programs. It may also be used as a reference to prepare for GFSI certification as part of the food safety program evolution. This document incorporates the requirements of ISO 22000:2018, ISO / TS 22002-2:2013 and FSSC 22000 Version 5.1, November 2020. It provides a high-level overview of food safety management system (FSMS) requirements and food safety programs that will ensure that boarded products meet a high standard of quality and food safety consistently.

A WFSG Implementation Guide that contains Standard Operating Procedures (SOPs) and Form Templates has been developed to assist organizations with updating their current FSMS. A reference to applicable supporting documentation can be found at the end of each section.

A summary of changes between WFSG Version 4 and WFSG 2022 can be found at the end of this document in Section 16.

2.
Purpose and Scope

The World Food Safety Guidelines (WFSG) provides the framework, operating standards and essential program elements needed to ensure food is sourced, prepared, and served safely. Suppliers, Caterers and Airlines are committed to delivering safe, high-quality food that meets customer expectations. This WFSG revision incorporates FSSC 22000 requirements.

The food produced and boarded out of supplier facilities and flight kitchen operations based in the United States is regulated by the Food and Drug Administration (FDA), and the United States Department of Agriculture (USDA).

Food produced and boarded out of non-United States flight kitchens are subject to national and local food regulations applicable to the country.

As such, the WFSG utilizes HACCP principles and reflects the highest food safety standards. The most stringent requirements to meet national and local regulations as well as customer contracted requirements should be used.

3.
Programs and SOPs

Section 4 through 13 outline programs and standard operating procedures encompassing the World Food Safety Guidelines.

4.
Context of the Organization

4.1 Understanding the Organization and its Context

4.1.1. The organization should identify internal and external issues that are relevant and could affect its ability to achieve the results as defined by the Food Safety Management System. Review information and update on these issues and use it as an input to risk-based thinking and decision-making processes.

4.2 Understanding the Needs and Expectations of Interested Parties

4.2.1. The organization should identify interested third parties that are relevant to the FSMS, and their requirements. Review and update this information and use it as input when reviewing and making decisions related to the FSMS.

4.3 Determining the Scope of the Food Safety Management System

4.3.1. The organization should consider the information from internal and external issues, and requirements of the interested third parties identified within the scope of the food safety management system. Define the organization scope to include the products and services, processes and production sites included in the food safety management system. The scope of the FSMS should be documented.

4.4 Food Safety Management System

4.4.1. The organization's FSMS must be designed to ensure the provision of safe, quality products and services to customers. The FSMS ensures that food safety hazards are identified, evaluated, and controlled to prevent safety problems from occurring.

4.4.2. Communication channels should be established for information having to do with product safety issues. This includes information for development, implementation and updating of the FSMS. The system should be evaluated and updated to make sure that activities are accurately reflected and that the most recent information on food safety hazards is incorporated into the system.

4.4.3. All outsourced processes should be controlled to clearly identify the work assigned to external parties according to the FSMS.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P-400-001	Context of the Organization
F-400A-001	Context of the Organization
F-400B-001	FSMS Process List
F-400C-001	Process Planning

5.
Leadership

5.1 Leadership and Commitment

5.1.1. *Top management shall be fully committed to the development and implementation, of the FSMS, and be committed to maintaining and continually improving its effectiveness. Top Management should provide adequate resources and ensure that the importance of meeting requirements is communicated throughout the organization. This includes all regulatory, statutory and customer contracted requirements. The Leadership Procedure outlines and defines management's role in the FSMS.*

5.2 Food Safety Policy

5.2.1. *Establishing the Food Safety Policy:*

5.2.1.1. Management shall formulate the Food Safety Policy appropriate to the context of the organization and establish business objectives to support food safety. The food safety policy must have evidence that management developed and approved the policy.

5.2.2. *Communicating the Food Safety Policy:*

5.2.2.1. Management shall formulate the Food Safety Policy appropriate to the context of the organization and establish business objectives to support food safety. The food safety policy must have evidence that management developed and approved the policy;

5.2.2.2. The policy is communicated, implemented, and maintained throughout the organization. It should be reviewed at regular intervals to make sure that it continues to be suitable to the organization.

5.2.3. *Food Safety Culture:*

5.2.3.1. Leadership shall ensure a Food Safety Culture is developed and promoted throughout the organization in various ways including but not limited to:

- Communication about food safety policies and responsibilities;
- Training;
- Employee feedback on food safety related issues;
- Performance measurement.

5.3 Organizational Roles, Responsibilities, and Authorities

5.3.1. *Management ensures responsibilities for roles are communicated to ensure effective operation of the system, responsibilities, and authorities for all activities in the FSMS are defined and documented in the Organizational Chart, Job Descriptions, and Procedures.*

5.3.2. Food Safety Team Leader:

5.3.2.1. A Food Safety Team Leader (FSTL) shall be designated on the organizational chart. The food safety team leader manages the food safety team, organizing its work and making sure that all members have relevant training and competencies related to the food safety education. The food safety team leader is responsible for making sure that the FSMS is established, implemented, maintained, updated and reports to top management on the effectiveness and suitability of the system.

5.3.3. Reporting:

5.3.3.1. All employees are responsible for reporting problems with the FSMS, and specific responsibility for initiating and recording actions designated in the Continual Improvement Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P-500-001	Leadership
F-500A-001	FSMS Scorecard Table
F-500B-001	Food Safety Policy

6. Planning

6.1 Actions to Address Risks and Opportunities

6.1.1. The organization should consider the issues and requirements of interested parties to determine the risks and opportunities to be addressed to ensure that the FSMS is effective and achieves intended results and continual improvement.

6.1.2. The organization should plan for and develop processes to provide safe products. These processes are documented as part of the FSMS. All planned activities should be evaluated are done within the control of the FSMS, to ensure the effectiveness of activities and any changes to the activities.

6.2 Objectives of the Food Safety Management System and Planning to Achieve Them

6.2.1. Objectives are established for the FSMS and support the food safety policy. They should be communicated and implemented throughout the organization and measured and monitored to inform management on the performance of the FSMS. They should be maintained and updated when necessary.

6.2.2. Planning for objectives includes identification of what will be done, the resources required, responsibilities, goals for completion and evaluation of performance results.

6.3 Planning of Changes

6.3.1 The need for changes to the FSMS should be identified during management review, as the result of internal audits or corrective actions, review of the HACCP plan, external information, or other sources of information. When changes are needed, they are carried out and communicated in a planned manner.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P-600-001	Planning
F-600A-001	Risk Assessment Workbook - Organizational Risks
F-600B-001	Risk Assessment Workbook - Process Risks

7.
Support

7.1 Resources

7.1.1. *The organization should be committed to the FSMS and provide the resources needed to maintain the effectiveness and make updates to the system. Resources include Human resources, Infrastructure and Work Environment.*

7.1.2. *People:*

7.1.2.1. The organization should assign qualified people to activities impacting food safety. Typically, Human Resources ensures that the personnel have the required training, education, skills, and experience for their position. The food safety team is made up of qualified individuals designated by top management;

7.1.2.2. When expertise is not available within the organization, external experts may be used. Records should be maintained defining the responsibility and authority of these external experts.

7.1.3. *Infrastructure:*

7.1.3.1. Infrastructure is recognized as an important part of food safety and the organization should provide the resources needed to establish and maintain the infrastructure required to comply with the requirements of the FSMS.

7.1.4. *Work Environment:*

7.1.4.1. Work Environment is also recognized to be an important part of food safety and the organization should provide the resources needed to maintain the work environment in the manner that allows compliance with the requirements of the FSMS.

7.1.5. *Externally Developed Elements of the Food Safety Management System:*

7.1.5.1. If the organization uses externally developed elements of the FSMS should ensure that they are in conformance with the requirements of the standard, and are applicable to the site, processes, and products. The food safety team should adapt the elements to reflect processes and products. As part of the FSMS they are implemented, maintained, updated and retained as documented information.

7.1.6. *Control of Externally Provided Processes, Products, or Services:*

7.1.6.1. When products or services are provided by external parties, the organization should manage them according to the procedures for Management of Services and Management of Supplied Materials to ensure that the products or services do not adversely affect the ability to meet the requirements of the FSMS.

7.2 Competence

7.2.1. *The organization should identify the competencies, including external providers required for all personnel in Job Descriptions. The procedure, Competence, Awareness and Communication includes suggested food safety training topics for new employees, management as well as refresher training. Each organization should define the training curriculum and the frequency of training. Training should define the process for qualification and training of personnel to make sure that all requirements are met. The procedure must include a process for evaluating the implementation and effectiveness of all the training and qualification activities. Corrective action should be taken when it is necessary.*

7.3 Awareness

7.3.1. *All employees must be trained on the food safety policy, the relevance and importance of their activities on the safety of the products, their responsibility to report problems with the food safety management system, and on the requirements for effective communication. Records of training are maintained.*

7.4 Competence

7.4.1. *General:*

7.4.1.1. The organization should implement internal and external communication systems for information relating to the FSMS including methods to identify what must be communicated, when and how to communicate and who is responsible for various communications. Responsibilities are documented in procedures and job descriptions.

7.4.2. *External Communication:*

7.4.2.1. The organization should ensure effective communication throughout the food chain, communicating with suppliers, contractors, customers, statutory and regulatory authorities, and others that have an impact on or will be affected by the status of the FSMS. Communication provides information related to products including food safety issues and hazards that must be controlled by others in the food chain;

7.4.2.2. The Competence, Awareness and Communication Procedure should define responsibilities and authorities and document the system for making food safety requirements available, providing information on food safety, and including information obtained for system updating **and** management review.

7.4.3. *Internal Communication:*

7.4.3.1. Internal communication processes, documented in the Competence, Awareness and Communication Procedure should be implemented to effectively communicate food safety issues within the organization. The process should ensure that the food safety team is informed of changes that have an effect on the FSMS. The food safety team is responsible for including the information obtained in Management Review and updating of the FSMS.

7.5 Documented Information

7.5.1. *General:*

7.5.1.1. The FSMS is documented in a FSMS Manual, Procedures, and Records. These include documented statements of the Food Safety Policy and Objectives.

7.5.2. *Creating and Updating:*

7.5.2.1. Documents should be clearly identified and reviewed and approved before release for use.

7.5.3. *Control of Documented Information:*

7.5.3.1. The organization document control process should ensure that all the FSMS documents are controlled. All proposed changes should be reviewed for their effect on food safety and on the FSMS and approved before implementation. This process is documented in the Document Control Procedure;

7.5.3.2. The procedure defines document control including document approval, review, update and re-approval of documents, identification of changes and current revision, availability of current documents at point of use, legibility and identification of documents, control of documents of external origin and prevention of unintended use of obsolete documents;

7.5.3.3. This process addresses the steps required to establish and maintain the records to demonstrate conformance to the FSMS requirements as well as regulatory requirements. The procedure defines identification, storage, protection, retrieval, retention time, and disposition methods.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P-710-001	Resources
P-716-001	Management of External Products, Processes and Services
F-716A-001	Contract Service Register List
F-716B-001	Approved Supplier Register List
F-716C-001	Approved Supplier Questionnaire
P-720-001	Competence, Awareness and Communication
F-720A-001	Employee FSMS Training Log
F-720B-001	Training Action Plan and Record
P-750-001	Documented Information and Control
F-750-001	Master Document List

8.
Operation

8.1 Operational Planning and Control

8.1.1. The organization should plan for and develop processes to provide safe products. These processes are documented in the FSMS. All planned activities are done within the control of the FSMS, ensuring the effectiveness of activities and any changes to the activities.

8.2 Prerequisite Programs (PRPs)

8.2.1. PRPs are established to provide a foundation for the HACCP program and should be implanted in products, processing, and work environment to help control the risk of introducing food safety hazards. The PRPs must be implemented according to the Prerequisite Program procedure.

8.2.2. The procedure documents requirements for the PRPs and defines programs that are appropriate to meet the food safety needs, size, products, and applicable statutory and regulatory requirements. The PRPs are implemented across the entire facility and are approved by the food safety team.

8.2.3. The organization should consider all appropriate information when PRPs are established. This includes statutory and regulatory requirements, customer contracted requirements, recognized guidelines, Codex Alimentarius Commission (Codex) principles and other applicable standards.

8.2.4. The procedure should also identify the specific information that must be considered when establishing PRPs, the process for verifications and modifications, how the activities are managed, and what records must be maintained.

8.3 Traceability System

8.3.1. The organization should ensure that all applicable statutory, regulatory and customer contracted requirements are identified. The traceability system should provide the ability to trace food from raw materials to delivery. Boarded product should be matched to ingredients, food contact packaging (disposable items), processing and delivery records. The system identifies incoming material from suppliers and distribution. Records are maintained for system assessment, handling of unsafe products and product recall.

8.3.2. The traceability system is documented in the Traceability Procedure. The organization should verify and test the effectiveness of the traceability system at the frequency defined in the procedure.

8.4 Emergency Preparedness and Response

8.4.1. *The Emergency Preparedness Procedure should be established to manage potential emergency situations, incidents or accidents that could impact food safety. Examples of emergency situations that can affect food safety and / or production are natural disasters, environmental accidents, bioterrorism, workplace accidents, public health emergencies and other accidents (e.g., interruption of essential services such as water, electricity or refrigeration supply.) Documented information should be maintained to manage these situations and incidents.*

8.5 Hazard Control

8.5.1. *Preliminary Steps to Enable Hazard Analysis:*

8.5.1.1. The organization should use a Hazard Analysis Critical Control Point (HACCP) system to ensure product safety. All the information needed to conduct this analysis is collected, maintained, updated, and documented according to the Information for Hazard Analysis Procedure;

8.5.1.2. Materials that are in contact with product or are used in product as ingredients are described fully to allow hazard analysis. These descriptions are documented and kept up to date, and all related statutory and regulatory food safety requirements are identified. Required information is detailed in the Preliminary Steps Hazard Analysis procedure;

8.5.1.3. Descriptions of end product groups are also documented. The descriptions are kept up to date and all related statutory and regulatory food safety requirements are identified;

8.5.1.4. The intended use of each product group is defined, along with possible misuse or mishandling of the product that could be expected to occur. Users of the product are identified, along with any groups especially vulnerable to a food safety hazard. These descriptions are documented;

8.5.1.5. Flow diagrams are prepared and used as a basis for evaluating food safety hazards. They are prepared for each product group or process category in the FSMS. Flow diagrams should be updated where appropriate and retained as documented information. The accuracy of the diagrams is verified through on-site checking by the Food Safety Team;

8.5.1.6. The flow diagrams identify the existing control measures, process parameters or procedures that influence food safety as well as relevant external requirements.

8.5.2. *Hazard Analysis:*

8.5.2.1. The Hazard Analysis is performed by the Food Safety Team and determines which hazards must be controlled, to what degree and in what combination they are needed to ensure the safety of the product. The process is documented in the HACCP procedure. For each type of product group and process category the Hazard Analysis identifies the food safety hazards that are expected to occur and the step where the hazard is introduced. The determination is based on the preliminary information collected, experience, external information, and information from the food chain. During the analysis, the steps and links in the food chain preceding and following the operations being analyzed are considered, as well as the equipment, services, and surroundings;

8.5.2.2. The analysis considers statutory and regulatory requirements, customer contracted requirements, the intended use, and other relevant data and if possible, determines an acceptable level of the food safety hazard in the product group;

8.5.2.3. Each food safety hazard that is identified is assessed to determine if elimination or reduction is necessary for a safe product, and if it must be controlled to meet acceptable levels. The team also evaluates the hazards based on the severity and likelihood of adverse health effects;

8.5.2.4. The team identifies appropriate preventive controls to prevent, eliminate or reduce the food safety hazards to the defined acceptable levels. Existing control measures identified during the preliminary steps are reviewed for effectiveness against the safety hazard.

8.5.3. Validation of Control Measure and Combinations of Control Measures:

8.5.3.1. Before implementing control measures, and after any change in the HACCP plan, the effectiveness of control measures is validated. Validation must show that the control measures can achieve and ensure acceptable control of the hazard they are designed to protect against;

8.5.3.2. If validation is unsuccessful, modifications are made, and control measures reassessed. The organization validation process, requirements and responsibilities are documented in the HACCP Procedure.

8.5.4. Hazard Control Plan:

8.5.4.1. The organization should establish and document a HACCP plan. The plan identifies the hazards to be controlled at each control point, the control measures used, critical limits, the monitoring procedures, the corrections, and corrective actions to be taken if limits are exceeded. The HACCP procedure documents the responsibilities, authorities and records relating to the HACCP Plan;

8.5.4.2. For each monitoring point a critical limit is determined, and the rationale for that limit is documented. The critical limit is set to ensure that an acceptable level of the hazard is not exceeded;

8.5.4.3. A monitoring system is designed and documented for each CCP to demonstrate that the CCP is in control. This system consists of procedures, work instructions and records defining the measurements or observations, timeframes, monitoring devices, calibration methods, frequency, responsibilities and authorities, and records. The monitoring systems identify when the critical limits have been exceeded in time for the product to be isolated before it is used or consumed;

8.5.4.4. The HACCP Plan identifies what corrections or corrective actions must be taken when results exceed critical limits. The cause of the nonconformity is identified; the out-of-control parameter is brought back under control and preventive action taken to ensure that the nonconformity does not reoccur;

8.5.4.5. The Non-conforming Product procedure details the procedure for handling of potentially unsafe products, so the products are not released until they are evaluated.

8.6 Updating the Information Specifying the PRPs and Hazard Control Plan

8.6.1. The organization updates process information as necessary including product characteristics, intended use, flow diagrams, process steps and control measures. The HACCP plan and procedures specifying PRPs are amended as needed.

8.7 Control of Monitoring and Measuring

8.7.1. The organization should follow the Control of Monitoring and Measuring procedure to ensure that the monitoring and measuring methods and equipment used are adequate to meet the requirements. The procedure outlines the process used for verification and calibration of measuring equipment, records requirements and actions taken if equipment is found to be nonconforming. Capability of software used for measuring and monitoring is confirmed according to the procedure and reconfirmed as necessary.

8.8 Verification Related to PRPs and the Hazard Control Plan

8.8.1. Verification:

8.8.1.1. Verification activities are carried out according to the HACCP plan. The food safety team reviews the results.

8.8.2. Analysis of Results of Verification Activities:

8.8.2.1. The food safety team also reviews the results of verifications such as internal and external audits. This review ensures that overall system performance meets planned arrangements and management system requirements. The review is also used to identify the need to update or improve the FSMS, identify trends indicating higher incidence of potentially unsafe products, establish information for planning the internal audit program and provide evidence that corrections and corrective action have been effective;

8.8.2.2. The results of the analysis are documented and provided as an input to management review.

8.9 Control of Product and Process Nonconformities

8.9.1. General:

8.9.1.1. The organization shall ensure that data derived from monitoring of OPRPs and CCPs are evaluated by competent people who have the authority to initiate correction and corrective actions.

8.9.2. Corrections:

8.9.2.1. Products are identified and controlled any time preventive control parameters are not met, CCPs are exceeded, or there is a loss of control of operational PRPs. The correction process is detailed in the Hazard Analysis and HACCP Plan. It includes identification and assessment of affected end products and review of the corrections carried out. Products manufactured under conditions where critical limits have been exceeded are handled according to this procedure. They are evaluated and evaluations recorded. All corrections are approved by the responsible person and are recorded along with information on the cause and consequence of the nonconformance and any information needed for traceability.

8.9.3. Corrective Actions:

8.9.3.1. The food safety team leader reviews data from the OPRPs and CCPs to initiate corrective actions. Corrective actions are initiated if critical limits are exceeded or when there is nonconformance with OPRPs.

8.9.4. Handling of Potentially Unsafe Products:

8.9.4.1. Any product that is potentially unsafe is handled according to the procedure. This procedure defines the actions taken to prevent any nonconforming product from entering the food chain unless it has been determined that the food safety hazard has been reduced to stated acceptable levels or will be before entering the food chain or that the product meets acceptable levels despite of the nonconformity;

8.9.4.2. All food that may have been affected by a nonconformity are held under control until they have been evaluated;

8.9.4.3. Food that is affected by nonconformities will only be released as safe after evaluation has been completed. Evaluation must show that evidence other than monitoring demonstrates that the control has been effective, combined effect of control measures for that product complies with performance intended, or the results of sampling, analysis or other verification demonstrate that the product complies with acceptable levels for the hazard;

8.9.4.4. Any lot of products that is not acceptable for release is handled according to the Control of Nonconforming Product procedure. The procedure defines the process for reprocessing or further processing to ensure that the hazard is eliminated or reduced to acceptable levels and methods for destruction or disposal of the product.

8.9.5. Withdrawal / Recall:

8.9.5.1. The organization should have a documented procedure for conducting withdrawal of the product to be used whenever the product is identified as unsafe. This procedure defines responsibility for and the process for executing the withdrawal including notification of relevant parties, handling of withdrawn products and affected lots of product in stock and the sequence of actions to be taken;

8.9.5.2. Withdrawn products are secured until they are destroyed or dispositioned according to the procedure. The cause, extent and result of withdrawals are recorded and reported to management. The effectiveness of the withdrawal process is verified and documented.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P-810-001	Operational Planning
P-820-001	Prerequisite Programs
F-820-001	Prerequisite Program (PRP) Table
P-830-001	Traceability
P-840-001	Emergency Preparedness and Response
F-840-001	Emergency Response Plan
P-851-001	Preliminary Steps to Hazard Analysis
P-852-001	Hazard Analysis and HACCP Plan
F-851-001	Master HACCP Plan Workbook
P-870-001	Control of Monitoring and Measuring
P-880-001	Verification
F-880-001	Verification Schedule
P-890-001	Control of Product and Process Nonconformities
F-890A-001	Corrective and Preventive Action Form
F-890B-001	Non-Conforming Product Log
P-894-001	Handling of Potentially Unsafe Products
P-895-001	Recall and Withdrawal
F-895A-001	Product Recall and Withdrawal Plan
F-895B-001	Product Recall and Withdrawal Log
16.1 Appendix I	Food For Temperature Control

ISO 22000:2018	
Document #	**Document Name**
16.2 Appendix II	Flow Chart and Master Process Description
16.3 Appendix III	Hazard Analysis Risk Assessment
16.4 Appendix IV	Master HACCP Plan
16.5 Appendix V	Microbiological Guidelines

9. Performance Evaluation

9.1 Monitoring, Measurement, Analysis, and Evaluation

9.1.1. General:

9.1.1.1. The FSMS documentation identifies the need for monitoring, measurement, analysis, and evaluation. The documentation defines what needs monitoring and measuring, the methods, frequency and the analysis and evaluation of results. The results are documented and maintained and used to evaluate the effectiveness of the performance of the FSMS.

9.1.2. Analysis and Evaluation:

9.1.2.1. Data from the monitoring and measuring is analyzed by the Food Safety Team. The team evaluates the results of verification activities for PRPs, the HACCP Plan and internal and external audits. The team determines if the performance of the system meets the objectives and identifies the need for updating or improving the system;

9.1.2.2. The team analyzes trends that may indicate a higher incident of potentially unsafe product or process failures. They use this information for planning the internal audit program and to evaluate the effectiveness of corrections and corrective actions. The information is maintained as documented information and reported to top management as an input to management review.

9.2 Internal Audit

9.2.1. Internal audits are conducted to verify the effectiveness of the FSMS. Audits determine whether the FSMS conforms to requirements of ISO 22000:2018, the organization FSMS requirements and planned arrangements. Effective implementation and updating is also verified.

9.2.2. An Internal Audit procedure describes the audit process, responsibilities, and authorities. The audit program takes into consideration the importance of processes and areas to be audited. The procedure defines the criteria, scope, frequency, and methods used for the audit process. Methods used and selection of auditors ensures impartiality and objectivity.

9.2.3. Management is responsible for ensuring that timely corrective actions and follow-up are taken on any nonconformances identified in their area. Information from the audits is also used to make any necessary updates to the FSMS to maintain and improve the effectiveness of the system.

9.3 Management Review

9.3.1. Management Review should be carried out periodically to review the effectiveness, adequacy, and continuing suitability of the FSMS. Management evaluates the food safety policy, opportunities for improvement and the need for changes to the FSMS. The process for management review including review inputs, review outputs, responsibilities and authorities are documented in the Management Responsibility Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P-910-001	Monitoring, Measurement, Analysis and Evaluation
F-910-001	Monitoring and Measuring FSMS Processes
P-920-001	Internal Audit
F-920A-001	Internal Audit Plan
F-920B-001	Internal Audit Report
F-920C-001	Internal Audit Checklist
P-930-001	Management Review
F-930-001	Management Review Meeting Agenda and Minutes

10. Improvement

10.1 Nonconformity and Corrective Action

10.1.1. The Corrective Action and Improvement Procedure specifies appropriate actions to identify and eliminate the cause of nonconformities and eliminate these causes preventing recurrence and to bring processes back into control. The corrective action process includes review of nonconformities and trends in monitoring results, determining causes, evaluating need for action, implementing actions, recording results, and reviewing corrective action to ensure effectiveness.

10.2 Continual Improvement

10.2.1. The organization shall continually improve the suitability, adequacy, and effectiveness of the FSMS. Continual improvement of the FSMS is achieved through the use of the elements of the FSMS. This includes management review, internal audits, evaluation of verification results, analysis of results of verification activities, validation of control measure combinations, corrective actions and FSMS updating.

10.3 Update of the Food Safety Management System

10.3.1. The food safety team evaluates the FSMS at planned intervals ensuring it is kept updated and current. The team determines if it is necessary to review the hazard analysis, the operational PRPs and the HACCP plan. All system updating is recorded and reported as an input to management review.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P-1000-001	Corrective Action and Improvement

11.
Critical Control Points (CCP)

Based on the hazard assessment, the organization shall select an appropriate control measure or combination of control measures that will be capable of preventing or reducing the identified significant food safety hazards to defined acceptable levels. The organization may determine that additional CCPs are needed to ensure food safety in their operation.

11.1 CCP 1 Cooking

11.1.1. The organization must have documented procedures for temperature control of high-risk items to ensure a thermal kill or reduction of pathogenic bacteria and elimination of viruses and parasites.

11.1.2. Follow all national and local food regulations and customer contracted requirements for high-risk products applying the most stringent.

2. MINIMUM REQUIRED INTERNAL COOKING TEMPERATURE FOR RAW ANIMAL FOODS – GUIDELINES			
Food Group	**Internal Cooking Temperature**	**Holding Time**	**Reference**
Fish, Pork and Meat	63°C / 145°F	15 seconds	FDA Food Code (2017 page 732) Chart 4-A Summary Chart for Minimum Cooking Food Temperatures and Holding Times Required by Chapter 3
Intact Meat			
Commercially Raised Game Animals, Rabbits			
Eggs (not prepared for immediate service)	70°C / 158°F	<1 second	
Comminuted Meat, Fish, or Commercially Raised Game Animals	68°C / 155°F	17 seconds	
Comminuted Raised Game Animals	66°C / 150°F	1 minute	
Mechanically Tenderized Meats	63°C / 145°F	3 minutes	
Injected Meats			
Poultry	74°C / 165°F	Instantaneous	
Wild Game Animals			
Stuffed Fish, Meat, Pork, pasta, ratites and poultry			
Stuffing Containing Fish, Meat, Ratites and Poultry			

SURFACE TEMPERATURE FOR SEARED STEAKS – GUIDELINES			
Food Group	**Surface Temperature**	**Holding Time**	**Reference**
Seared Steak	63°C / 145°F Seared to achieve a cooked color change on all external surfaces.	Not required	FDA Food Code (2017 page 434)

NOTE FROM FDA FOOD CODE 2017 PAGE 432: The provision for allowing seared steaks was reviewed by the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) and USDA. Paragraph 3-401.11(C) includes their recommendations. USDA comments included, "For the purposes of this discussion, steak is a whole beef muscle. It does not include whole beef muscle that has been pinned, injected, or chopped and formed. It may be cut cross grain, such as sirloin, chuck, or porterhouse; or it may be cut with the grain, such as flank, skirt, or Chateaubriand. Other species, such as poultry, pork, and lamb are not included.

11.1.1. Check and record food core temperature of each batch upon completion of cooking or surface color change where food has been seared.

11.1.2. If critical limit is not met, continue cooking until limit is met and document corrective action.

11.1.3. Audit of cooking must be completed by randomly selecting some foods being cooked and verify compliance by core temperature monitoring. Randomly select some foods and verify control documentation.

11.1.4. Parasites are destroyed in pork and fish by recommended temperatures above. As an exception, customers requesting raw fish requires the alternative process of destroying potential parasites by freezing in accordance to the following FDA Food Code standards (US specific):

- -20°C / -4°F for seven days;
- -35°C / -31°F until solid and stored at -20°C / -4°F for 24 hour;
- -35°C / -31°F or below until solid and stored at -35°C / -31°F or below for 15 hours.

11.1.5. Additional requirements are in the Cooking Procedure.

11.2 CCP 2 Chilling

11.2.1. The organization must have a control system for safe chilling of high-risk foods after cooking to prevent growth of vegetative pathogenic bacteria during the post-cook chilling processes for all in-house cooked time / temperature control for safety food (TCS foods). Follow national and local regulations and customer contracted requirements as appropriate, applying the most stringent.

11.2.2. Food core temperature to pass temperature interval of 60°C / 140°F to 10°C / 50°F within four hours or 57°C / 135°F to 21°C / 70°F (core) within two hours and from 21°C / 70°F to 5°C / 41°F in an additional four hours. (FDA Food Code).

11.2.3. Check and record time and core food temperature at the thickest part of the product at start and finish of process. If temperature requirements are not met the food must be discarded.

11.2.4. Audit of chilling must be completed by randomly selecting some foods (preferably dense (e.g., mashed potatoes, meat loaf, lasagna, etc.) being chilled and verify compliance. Randomly select TCS foods in the refrigerator that have been cooked / chilled within the past 24 hours and verify control documentation.

11.2.5. Additional requirements are in the Procedure Chilling.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
16.1 Appendix 1	Food for Temperature Control
P11.1- 001 CCP 1	Cooking
P11.2- 001 CCP 2	Chilling
F11.1/2-001	Cooking / Chilling Temperature Checks

12. Operational Prerequisite Programs (OPRP)

Based on the hazard assessment, the organization shall select an appropriate control measure or combination of control measures that will be capable of preventing or reducing the identified significant food safety hazards to defined acceptable levels. The organization may determine that additional OPRPs are needed to ensure food safety in their operation. The Codex decision tree may be utilized.

12.1 OPRP 1 Produce Wash and Sanitation

12.1.1. A procedure must be in place to reduce contamination on raw unwashed fruit and vegetables ensuring they are thoroughly washed to reduce physical, chemical, and microbiological surface contamination. Pre-washed / pre-cut fruit and vegetables must be purchased from suppliers after evaluation of their processes to ensure the quality and safety of fruit and vegetables.

12.1.2. Raw vegetables and fruits should be washed in clean, cold potable water. Where national and local regulations permit, a suitable chemical wash should be used in accordance with the chemical manufacturer's instructions.

12.1.3. Procedure steps include:

- Chemical sanitation of raw fruit and vegetable should be done in close proximity to time of use;
- Raw fruit and vegetables must be washed in clearly labeled, cleaned, and disinfected designated sinks or containers;
- The sinks or containers must be regularly cleaned and sanitized;
- Remove all exterior packaging / stickers such as rubber bands, films, plastic, wires, and twist ties;
- Remove layers or leaves of products such as lettuce, celery to ensure proper washing. Remove pineapple tops;
- Inspect items to remove debris, dirt, insects, and all extraneous material prior to washing;
- Inspect the final product to ensure it is visually clean and free of debris and dirt. If not, repeat the process;
- The chemical used must have concentration levels verified and recorded following chemical manufacturer's instructions or caterer's SOP.

12.1.4. All prepared fruit and vegetables must be date or day marked, covered, and stored under refrigerated conditions until ready to use.

12.1.5. Additional requirements are in the Procedure Produce Wash and Sanitation.

12.2 OPRP 2 Cold Chain Interruption during Food Production

12.2.1. The facility must have a time / temperature control system for safe handling of Time / Temperature Control for Safety (TCS), ready-to-eat (RTE) foods to prevent growth of pathogenic microorganisms to harmful levels during handling.

12.2.2. Follow national and local regulations and customer contracted requirements as appropriate. Typically, temperature guidelines are:

- Room temperature is <5°C / 41°F: No time or temperature control / record is required;
- Room temperature is > 5°C / 41 °F but < 15°C / 59°F: Cumulative food exposure time must not exceed 90 minutes;
- Room temperature is >15°C / 59°F but < 21°C / 70°F: Cumulative food surface temperature must not exceed 15°C / 59 °F or food exposure time must not exceed 45 minutes;
- Room temperature is >21°C / 70°F: Cumulative food surface temperature must not exceed 15°C / 59°F and food exposure time must not exceed 45 minutes.

12.2.3. Monitoring requirements are:

- Check and record room temperature;
- **If Critical Limit Option 1:** No additional checks;
- **If Critical Limit Option 2:** Check and record food exposure time;
- **If Critical Limit Option 3:** Check surface temperature at the end of process OR food exposure time at end of process;
- **If Critical Limit Option 4:** Check surface temperature at the end of process AND food exposure time at end of process.

12.2.4. If critical limit is exceeded, discard food.

12.2.5. Audit must be completed by randomly selecting foods / meals or batches and verify compliance. Randomly select foods in refrigerators and verify control documentation.

12.2.6. Additional requirements are in the Cold Chain Interruption during Food Production

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P12.1-001 OPRP 1	Produce Wash and Sanitation
F12.1-001 OPRP 1	Produce Wash Log
P12.2-001 OPRP 2	Cold Chain Interruption during Food Production
F12.2-001 OPRP 2	Food Preparation, Assembly and Tray Setup Records

13. Prerequisite Programs (PRP)

13.1 PRP 1 Workspace

13.1.1. Infrastructure:

13.1.1.1. The establishment and its facilities shall be of solid construction and maintained in good condition. All materials shall be such that they do not transmit any undesirable substances to the food. Materials should be cleanable and not permit retention of water, accumulation of water and pest harborage;

13.1.1.2. The establishment and its facilities should be located away from areas which may cause contamination from groundwater (e.g., dumping-ground, sewage drains, sewage treatment plants, and livestock farms) and areas susceptible to pest infestations;

13.1.1.3. The buildings and its facilities shall be designed and constructed with the functional characteristics, location, and layout that are suitable for the needs of each process that will be performed in the area. The operations shall be carried out under appropriate hygienic conditions from receipt of raw materials to consumption of the product;

13.1.1.4. The layout of the building shall be such that it prevents cross-contamination by separating operations from bathrooms, laundries, warehouses, machinery rooms, and waste storage rooms to avoid the risk of contamination of the food and food contact surfaces. The layout should ensure that the product flows in one direction.

13.1.2. Layout of Premises:

13.1.2.1. Different areas shall be designed to allow the proper arrangement of equipment and materials to avoid cross-contamination. For that purpose, work areas shall be clearly identified and marked, physically or functionally;

13.1.2.2. All areas shall be appropriately designed with adequate space to facilitate the food operations, as well as their cleaning and maintenance;

13.1.2.3. Receiving of materials shall be performed in a protected and clean area. The establishment should have a designated area for receipt of goods and this area should ensure the hygienic management of all goods;

13.1.2.4. Effective measures shall be taken by the establishment to avoid cross-contamination (e.g., ready-to-eat food shall be kept separate from raw or non-treated food.) Potentially hazardous raw products should be processed in a separate room, or in areas separated by a barrier, from areas used for preparing ready-to-eat foods.

13.1.3. Food Handling Areas:

13.1.3.1. Surfaces of walls, floors and ceilings shall be waterproof, non-absorbent, washable, materials without crevices; in addition, floors shall be made of non-slip material. Joints between the floors and the walls shall be vaulted or rounded, where appropriate. Doors shall be non-absorbent, resistant and have a smooth and undamaged surface. The use of materials that cannot be adequately cleaned and disinfected shall be avoided;

13.1.3.2. An adequate drainage system shall be provided, especially with regards to areas where a high volume of operations and continual transit of personnel and equipment takes place (e.g., wash-up areas, areas where dishes, utensils, and other equipment are washed);

13.1.3.3. Ceilings and overhead fixtures shall be constructed and finished to minimize the build-up of dirt and condensation, and the shedding of particles;

13.1.3.4. Windows and other openings shall be constructed to avoid accumulation of dirt and those which open shall be fitted with insect-proof screens. Screens shall be easily movable for cleaning and shall be kept in good condition. Internal windowsills, if present, shall be sloped to prevent use as shelves for storage;

13.1.3.5. Doors shall have smooth, non-absorbent surfaces, and be self-closing and close fitting to prevent ingression of pests. Doors should not be propped open.

13.1.4. Lighting and Ventilation:

13.1.4.1. All the areas shall be provided with an adequate lighting system. Lighting systems shall be designed so that they do not adversely affect food. Light fixtures shall be protected to ensure that materials, product, or equipment are not contaminated in case of breakage. The lighting provided (natural or artificial), shall allow personnel to operate in a hygienic manner and adequate for the work being done in the area;

13.1.4.2. Appropriate ventilation systems shall be designed for the particular process or product and shall be capable of maintaining the temperature and humidity requirements for the process or products. The direction of airflow, whether natural or artificial, shall pass from a clean to a dirty zone. All openings shall have protection devices and systems to prevent contamination based on risk assessment (e.g., laminar air flow, air curtains, and double doors). Good ventilation shall be provided in food preparation areas (e.g., cooking areas, to dissipate high thermal loads and vapor effectively);

13.1.4.3. Exhaust hoods that are easy to clean shall be provided to remove all vapor generated in the process.

13.1.5. Personal Hygiene Facilities and Toilets:

13.1.5.1. Personnel hygiene facilities shall be available to ensure that the degree of personal hygiene required to carry out the operations of the organization can be maintained safely. The number of facilities should be based on national and local regulations;

13.1.5.2. Hand Wash sinks and sinks used for washing food and equipment should be clearly identified and separated. Hand Wash sinks should preferably be activated by foot, knee, elbow, or sensor. Water temperature should meet national and local regulations. Water temperature of 40°C / 105°F is recommended;

13.1.5.3. Toilets should not open directly into production areas.

13.1.6. Maintenance:

13.1.6.1. Maintenance of the building, equipment, utensil and the entire facility including drainage to facilitate all hygiene procedures and not cause contamination of food is outlined in the Maintenance Procedure;

13.1.6.2. Additional details are provided in Workplace Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.1-001 PRP 1	Workspace

13.2 PRP 2 Water and Ice Supply

13.2.1. Water supply at adequate pressure and temperature shall be provided, as well as suitable facilities for its storage. Only potable water shall be used:

13.2.1.1. The ice used in direct contact with food or food contact surfaces shall be made from potable water and be transported, handled, and stored in a manner that protects it from contamination.

13.2.2. All non-potable water used shall be carried through adequate pipes thoroughly separated from those carrying potable water, without any transversal connections.

13.2.3. Microbiological analysis is the most appropriate method of verification of safe, potable water and ice. Ice may be made at catering units or may fall into the "purchased ready-to-eat foods" category and therefore must be sourced with certificates of analysis from the supplier. Analysis of water and ice may be performed by health authorities, the caterer, or the airline. Refer to established guidelines for drinking water quality standards: Follow national and local regulations and customer contracted requirements as appropriate.

13.2.4. Additional requirements are detailed in Water and Ice Supply Procedure. References:

- https://www.iata.org/whatwedo/safety/audit/Pages/idqp.aspx
- http://water.epa.gov/drink/standardsriskmanagement.cfm
- https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.2-001 PRP 2	Water and Ice Supply

13.3 PRP 3 Equipment and Utensils

13.3.1. Equipment and utensils shall be made of impervious and corrosion resistant materials that do not transfer toxic substances, odor, or flavor to food. The equipment and utensils shall be capable of withstanding frequent cleaning and disinfection operations, and shall be smooth and free from holes, crevices, or cracks. Portable equipment (e.g., spoons, beaters, pots, and pans, should be protected from contamination):

13.3.1.1. All the equipment and utensils shall be designed and built-in order to ensure general hygiene conditions and their surfaces shall be easy to clean and to disinfect;

13.3.1.2. Additional requirements are detailed in Equipment and Utensils Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.3-001 PRP 3	Equipment and Utensils

13.4 PRP 4 Personal Hygiene

13.4.1. Procedure:

13.4.1.1. A procedure must be in place to ensure personal hygiene standards are maintained in areas where open food or clean equipment is handled to prevent microbial and physical contamination of food and equipment. The policy must apply to all employees, visitors, and contractors.

13.4.2. Health:

13.4.2.1. The management of the food establishment shall ensure that the health of the personnel engaged in the activity does not have an adverse effect on the food. Any individual affected by a contagious illness or exposed wounds shall not be allowed to work in food-handling areas where there may be a risk of contamination of food.

13.4.3. Protective Clothing:

13.4.3.1. Suitable, clean protective clothing shall be worn;
13.4.3.2. The organization is to ensure that the protective clothing worn by staff handling open food is cleaned according to commercial laundry standards (e.g., including mechanical washing and rinse);
13.4.3.3. Provisions should be made for the storage of clean protective clothing to prevent contamination. Adequate provisions should be made for the complete segregation between clean and soiled protective clothing. A designated area for returned soiled clothing is to be provided;
13.4.3.4. Suitable footwear should be used. The use of disposable shoe covers or the implementation of a captive shoe program may be used;
13.4.3.5. For food processing employees and visitors protective clothing shall not be worn in restrooms or break rooms and clothing shall be exchanged if worn outside. In the cafeteria, protective clothing must be removed or protected upon return to food handling stations (based on risk assessment).

13.4.4. Employee Change Facilities:

13.4.4.1. Lockers are to be provided to secure personal possessions away from production areas;
13.4.4.2. Segregation of clean and dirty protective clothing;
13.4.4.3. Periodic checks should be carried out by management to ensure compliance;
13.4.4.4. No food and drinks shall be stored in employee personal lockers.

13.4.5. Protective Hair Covering:

13.4.5.1. Disposable protective or laundered hair covering should be worn by all persons working in or entering areas for handling of open food or clean equipment. Hair covering shall be applied prior to putting on a protective coat. Coat to be removed prior to removing hair covering;
13.4.5.2. Suitable head covering shall be provided and worn correctly to ensure complete enclosure of hair;
13.4.5.3. Beards and mustaches shall be covered with beard covers;
13.4.5.4. Armguards should be worn by all persons in contact with open food or clean equipment.

13.4.6. Hand Hygiene:

13.4.6.1. Employees and visitors shall be required to wash their hands prior to entering food production and clean equipment areas;
13.4.6.2. If hand sanitizers are used, they shall be applied after hand washing;
13.4.6.3. Fingernails shall be kept short, clean, and unvarnished. False fingernails are not permitted;
13.4.6.4. Visitors should be asked to wear gloves if wearing false fingernails or nail varnish;
13.4.6.5. Gloves, if worn, should be suitable, disposable and changed frequently. If gloves are worn, hands must be washed prior to donning. Their disposal should be controlled to avoid product contamination. Hands shall be washed, and gloves shall be changed when changing tasks, products or when contaminated;
13.4.6.6. Cuts, grazes, or wounds on exposed skin should be covered with a company issued blue or appropriate colored waterproof dressing and covered by a disposable glove.

13.4.7. Jewelry:

13.4.7.1. All employees and visitors shall follow the organization's procedure on jewelry when working in or entering food production / handling areas;
13.4.7.2. The organization's procedure must be based on the potential of physical and microbial contamination.

13.4.8. Eating, Drinking, or Smoking:

13.4.8.1. Employees and visitors should be advised that eating, drinking, and smoking are restricted to designated areas;
13.4.8.2. Additional details on requirements are provided in the Personnel Hygiene Requirements Procedure.

ISO 22000:2018	
Document #	**Document Name**
P13.4-001 PRP 4	Personal Hygiene

13.5 PRP 5 Health Monitoring

13.5.1. *Health monitoring procedures must be in place for employees, visitors, and contractors to prevent contamination of food through contact with infected people. National and local legislation on infection control varies greatly and that legislation may not allow certain sub-procedures, such as requiring employees to disclose previous or present diagnoses.*

Procedures must include:

13.5.2. *Control of Employees:*

Pre-Employment Control:	Prior to employment, new employees shall be screened for current health status (e.g., questionnaires) and briefed on infection reporting requirements depending on national and local regulations.
Annual Screening:	All employees are required to report to management whenever suffering from the specified symptoms. Confirm continued compliance by annual screening (e.g., questionnaire).
Corrective Action:	If an employee confirms suffering from any of the symptoms specified, the person shall not be employed or assigned for food handling or clean equipment handling until examined and subsequently cleared by a medical professional.

13.5.2.1. If there is confirmation of a reportable illness by a medical professional, the person may be employed or assigned for a non-food or clean equipment handling task while awaiting clearance by the medical professional.

13.5.3. *Control of Visitors:*

13.5.3.1. Visitors and contractors must not touch open food or equipment (exception applies for auditors) at any time in production food handling areas. They may however touch and / or eat food provided at a menu presentation held outside areas where open food is being prepared or handled. Visitors and contractors are required to follow all facility Good Manufacturing Practice (GMP) requirements.

Visitor Screening:	Contamination of food from visitors entering food handling areas shall be prevented by one of the following measures: Visitor completes a Health Questionnaire for Visitors before entry or Visitor is presented with written instruction before entry or Visitor is presented with verbal instruction before entry.
Corrective Action:	Visitors and contractors who confirm suffering from intestinal infection or flu-like symptoms should not be allowed to enter food production areas. Visitors and contractors who confirm suffering from other symptoms specified in the questionnaire may be allowed to enter food production areas, provided that the person agrees to put on proper protective gear (e.g., bandage, glove, etc.)
Audit:	The procedure should be audited periodically to verify that the documented procedure is in place and being followed. The health monitoring procedure may be separated or included in training. This should be acceptable provided that the message is clear and that employees demonstrate acknowledgement. Based on national and local legislation employees may not be required to discuss their health with auditors.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.5-001 PRP 5	Health Monitoring

13.6 PRP 6 Preventive Maintenance

13.6.1. The organization must have a preventive maintenance program procedure (PMP) to ensure that facility infrastructure and equipment is maintained by proactive monitoring at frequencies defined in the PMP to ensure that there is no food safety risk due to poor maintenance of the facility and equipment.

13.6.2. The PMP should include:

13.6.2.1. Frequency of checks done on infrastructure (e.g., doors, walls, floors, drains etc.) In addition, equipment used for food processing (e.g., ovens, steamers, blast chiller, cleaning and sanitation equipment like floor scrubbers, dish machines, etc.);

13.6.2.2. Documentation of completion of checks and corrective action taken to address any deficiencies;

13.6.2.3. Measuring devices with an impact on food safety should be included in the calibration program (e.g., thermometers, temperature probes and gauges, scales, etc.) Verification of the accuracy of hand-held thermometers as well as cold room, refrigerator and freezer thermometers are to be completed on a regular basis against a certified standard. This shall be completed by methods relevant to the appropriate equipment.

13.6.3. In general, the tolerance limits are:

- Probe thermometers (for CCP checks): +/- 1°C (+/- 1°F);
- Infrared thermometers: +/- 2°C (+/- 2°F);
- Refrigerators, cold rooms, and freezers: +/- 1°C (+/- 2°F);
- Or as stipulated in manufacturer's guidelines.

13.6.4. Thermometers shall be identified by numbers or usernames or similar, to ensure traceability of control. If verification shows thermometers are outside tolerance levels, the thermometer shall be calibrated or replaced.

13.6.5. Additional requirements are detailed in the Preventive Maintenance Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.6-001 PRP 6	Preventive Maintenance
F13.6A-001 PRP 6	Preventive Maintenance Schedule Log
F13.6B-001 PRP 6	Temporary repair log
F13.6C-001 PRP 6	Calibration Log

13.7 PRP 7 Purchasing Management

13.7.1. Supplier Assessment:

13.7.1.1. The organization must have an effective approval process in place to ensure safe food supply to ensure that food and packaging is bought from an approved source after quality and food safety of the facility and item has been verified following a defined procedure. National and local regulations must be followed to ensure that the requirements required are being met by the supplier;

13.7.1.2. All food and food contact packaging suppliers must be approved prior to use of the product;

13.7.1.3. Regarding airline nominated products, the approval process shall be determined between the airline and caterer during contract development. Proof of supplier approval documentation shall be provided to the caterer upon request;

13.7.1.4. Caterers are responsible for ensuring that all locally sourced items are purchased from an approved supplier following a defined procedure;

13.7.1.5. Approval process may be performed by:

- An "onsite audit" based on HACCP protocols, which includes an assessment of the HACCP control system as well as a physical inspection of premises;
- Assessment may also be undertaken by remote audit, consisting of an assessment of a supplier's documented food safety management system without physical inspection of the supplier's premises;

- Approval may also be authorized by assessment of a supplier's certification(s) by national authorities or by third party audits to a recognized accreditation standard or food safety standard;
- **Approval Frequency:** Suppliers of high-risk food (e.g., TCS, ready-to-eat food should be approved before deliveries commence.) The audit frequency shall be defined by risk assessment which includes audit results, certificate grading, microbiological analysis, complaints, and delivery reliability. Required records from suppliers (e.g., third party audit certification, kosher certification etc. must be kept current.)

13.7.2. Incoming Material Requirements (raw materials, ingredients, and packaging):

13.7.2.1. The conditions of raw materials, ingredients, food items, beverages, and packaging, in addition to the established criteria, expiration date, and packaging integrity shall be inspected, verified, and approved at point of receipt;

13.7.2.2. Raw materials ingredients, food items, beverages requiring special storage conditions (e.g., temperature), shall be controlled and records should be maintained to demonstrate that the proper storage conditions were provided;

13.7.2.3. Raw materials, ingredients or packaging batches that are non-compliant shall be immediately returned to the supplier. If this is not possible, these items shall be properly identified, labeled, and stored separately until further action can be decided;

13.7.2.4. Measures shall be taken to avoid contamination of prepared food during receipt of goods.

13.7.3. Additional requirements for supplier verification are detailed in the Supplier Verification Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.7-001 PRP 7	Purchasing Management
F13.7-001 PRP 7	Shipping and Receiving Form

13.8 PRP 8 Storage and Transport

13.8.1. The organization should have a procedure that defines the requirements for the loading, unloading, transport, and storage of raw materials, ingredients, food items, beverages, work in process (WIP), equipment and chemicals. The procedure also covers the transportation of materials.

13.8.2. The procedure requirements include:

13.8.2.1. All incoming materials, and ingredients shall be inspected, unloaded, transported, and loaded properly to prevent potential food safety concerns. Allergenic materials shall be stored separated from non-allergenic materials according to the allergen management program and following national and local regulations. It will follow "like above like" (store similar allergens together, for example all tree nuts, or all products containing dairy) procedures for allergenic materials storage;

13.8.2.2. Refrigerated raw materials of animal origin shall be stored at a temperature less than or equal to 5°C / 41°F;

13.8.2.3. Frozen raw materials not to be used immediately shall be kept or stored at −18 °C / 0° F;

13.8.2.4. Stocks of raw materials and ingredients should be subject to effective stock rotation according to FIFO.

13.8.3. Raw materials, ingredients, and packaging shall be stored off the floor and with sufficient space between the material and the walls to allow inspection and pest control activities to be carried out. Typically, 46cm / 18" from the back wall and 5cm / 2" from the ceiling is recommended.

13.8.4. Raw materials and ingredients that need to be transferred from their original packages shall be handled in an appropriate manner so that they remain protected and with the original label of the product intact.

13.8.5. Raw materials and ingredients shall be inspected and selected before cooking and, if necessary, laboratory tests shall be carried out to establish fitness for use. Only suitable raw materials and ingredients in good conditions shall be used in the preparation of food.

13.8.6. Catering establishments shall be provided with cooling and / or freezing equipment of sufficient capacity to keep food at the adequate temperature:

13.8.6.1. The refrigeration equipment shall have devices for measuring and monitoring the temperature of the air or products being cooled, and the devices shall be calibrated at regular intervals. Records of temperature monitoring shall be maintained.

13.8.7. Dry supplies shall be kept under adequate temperature and humidity conditions:

13.8.7.1. Food packaging materials and food contact materials should be protected from dust and from any other type of contamination;

13.8.8. Vehicles and containers intended for the transportation of cooked and / or cooled food shall be capable of maintaining the required temperatures:

13.8.8.1. Food-transporting vehicles and containers shall be designed to maintain the required temperature;
13.8.8.2. Where regional or national and local time or temperature regulations apply, these shall be used.

13.8.9. Hygienic requirements shall be applied to vehicles transporting finished, ready-to-eat products:

13.8.9.1. During transport, food shall be protected from dust and from any other type of contamination;
13.8.9.2. All chemicals used on site shall be stored away from raw materials, packaging materials and finished meals in an identified area with only authorized personnel accesses. All chemicals shall be stored in the condition according to Safety Data Sheet (SDS);
13.8.9.3. Monitoring procedures shall be in place and records shall be kept.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.8-001 PRP 8	Storage and Transport
F13.8-001 PRP 8	Cold Storage Temperature Record

13.9 PRP 9 Cleaning and Sanitizing

13.9.1. *The organization must have a Cleaning and Sanitizing Procedure to ensure that food is prepared in a clean and hygienic facility to prevent contamination and be based upon a cleaning and sanitization schedule also known as a Master Sanitation Schedule (MSS). The procedure should also outline requirements for cleaning of uniforms and linen.*

13.9.2. *The procedure outlines the requirements:*

13.9.2.1. A cleaning and sanitization program shall be in place for food contact surfaces and non-food contact surfaces. This typically includes specifying detergents and disinfectant concentrations, frequencies, responsibilities, cleaning instructions for specific equipment;

13.9.2.2. The cleaning and sanitization method must be fit for purpose and executed through the utilization of manual or automatic cleaning systems;

13.9.2.3. Cleaning and sanitization are understood to be effective by an adequate combination of the following parameters: mechanical action, temperature, chemical (detergent, sanitizer) and time;

13.9.2.4. Cleaning of uniforms and linen should be done using a documented procedure;

13.9.2.5. If cleaning and sanitation of the facility, equipment, laundering of uniforms and linen is outsourced, this should be covered under the supplier verification procedure with the requirements for these processes clearly defined between the organization and the third party.

13.9.3. *Scope:*

13.9.3.1. Airline equipment, kitchen utensils and facility surfaces (e.g. floors, walls, etc.).

13.9.4. *Thermal Sanitation:*

13.9.4.1. Hot water mechanical dish machines temperature, shall comply with manufacturer recommended temperature and pressures, final rinse water temperature shall be 82°C / 180°F;

13.9.4.2. The equipment surface temperature at exit shall indicate a time / temperature treatment corresponding to low pasteurization as verified by positive reaction of 71°C / 160°F (e.g., therma label) and documented (e.g., therma label used and recorded.)

13.9.5. *Chemical Sanitation:*

13.9.5.1. Approved chemicals should be used for cleaning and sanitation. SDS sheets should be available for all chemicals used. Chemical concentration and contact (dwell) time as defined by the manufacturer shall be monitored (e.g., indicator paper and recorded.) Chemical concentration / contact (dwell) time as defined by the chemical manufacturer shall be monitored and documented.

13.9.6. *Storage of Clean Equipment*

13.9.6.1. Equipment shall be stored as to permit quick drying and not in a manner such as wet nesting or stacking. Equipment shall be stored upside down allowing air to dry.

13.9.7. *Facilities:*

13.9.7.1. Utilize mechanical / physical for cleaning: surfaces to be visibly cleaned.

13.9.8. *Verification of Cleaning and Sanitation Effectiveness:*

13.9.8.1. Microbiological swabs and / or ATP testing protocols. Verify cleanliness of equipment and facility by visual observation, cleaning schedules, records. Review results of microbiological swabbing, impression tests or similar testing if in place.

13.9.9. *Additional details on requirements are provided in the Cleaning and Sanitation Procedure.*

ISO 22000:2018	
Document #	**Document Name**
P13.9-001 PRP 9	Cleaning and Sanitizing
F13.9A-001 PRP 9	Master Sanitation Daily Record
F13.9B-001 PRP 9	Master Sanitation Monthly Record
F13.9C-001 PRP 9	Master Sanitation Quarterly Record
F13.9D-001 PRP 9	Master Sanitation Weekly / Bi-Weekly Record
F13.9E-001 PRP 9	Master Sanitation Schedule Worksheet

13.10 PRP 10 Waste Management

13.10.1. The establishment shall have a procedure for waste management that outlines the requirements for effluent and waste disposal as well as handling of waste. Requirements for handling of international trash are outlined separately under International Waste procedure.

13.10.2. Effluent and Waste Disposal:

13.10.2.1. An adequate number of bins that are clearly labeled should be provided for the collection of waste. The collection bins used for waste disposal in preparation and storage areas of food should be provided with hands free covers. Waste should be disposed of at a regular frequency to prevent the accumulation of waste to prevent cross contamination. Areas both inside and outside food premises shall be kept appropriately clean;

13.10.2.2. Where possible, facilities should have distinct areas for food entry and waste exit of waste, different times for such entry and exit shall be determined;

13.10.2.3. All the disposal ducts shall be constructed to prevent the contamination of the potable water supply. All the ducts for residual water disposal shall be thoroughly siphoned and shall flow into a drainage system;

13.10.2.4. Grease traps and sewer shall be of compatible dimension for the volume of waste and shall be located outside the area of food preparation and storage and shall have adequate maintenance.

13.10.3. Waste Handling:

13.10.3.1. In kitchens or rooms where food is prepared, waste shall be placed in detachable, impervious, and resistant rubbish bags within properly identified containers. Those containers shall be kept covered with a lid and removed from the work area as soon as they are filled or after each work shift and disposed into covered containers which shall not be stored in the processing area;

13.10.3.2. Waste containers shall be kept in an enclosed area reserved for that specific purpose and separately from food stores. The temperature shall be maintained as low as possible and the area shall be provided with good ventilation, lighting, and protection from insects and rodents. It shall be easy to clean, wash and disinfect. Waste containers shall be cleaned and disinfected when necessary;

13.10.3.3. Empty packages and wrappers shall be disposed of in the same conditions as waste materials. Waste compacting equipment may be used and shall not be stored in the food-handling areas;

13.10.3.4. Food waste shall be stored in pest-proof containers and / or stacked above the ground and away from walls. Where appropriate, refuse should be stored in covered, pest-proof containers;

13.10.3.5. Used oil shall be stored in a suitably identified covered container.

13.10.4. Additional requirements for waste management are detailed in the Waste Management Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.10-001 PRP 10	Waste Management

13.11 PRP 11 International Waste

13.11.1. The organization should have a procedure for handling international waste that meets with national and local regulations.

13.11.2. Best practices for handling International Catering Waste (ICW) are outlined in ICW - A Case for Smarter Regulation. These practices should be incorporated into the procedure:

iata-cabin-waste-handbook---final-resized.pdf

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.11-001 PRP 11	International Waste Procedure

13.12 PRP 12 Pest and Animal Control

13.12.1. The organization must have a pest management system established to prevent and exclude pests from the facility. (Prevent food and clean food contact surfaces being contaminated by pests.)

13.12.2. The procedure should include:

13.12.2.1. Building design and maintenance prevents ingress of pests;
13.12.2.2. A robust plan ensures that the cleaning regimen is sufficient to prevent the harboring of pests.

13.12.3. An effective, documented pest control program that is conducted by a trained competent person with certification based on national and local regulation. If this activity is contracted to an external party, a contract outlining the scope of work should be established.

13.12.4. The pest control program should include:

13.12.4.1. Location plan and type of interior, non-toxic traps, and exterior bait stations on site map;
13.12.4.2. Location plan, list, and type of eradication devices (e.g., devices for elimination for rodents and insect light traps for flying insects);
13.12.4.3. Planned frequency of premises inspection;

13.12.4.4. Premises inspection report;
13.12.4.5. Pesticides and insecticides to be used for treatment and SDS available for these chemicals. Logs should be maintained for all applications;
13.12.4.6. Written evidence that corrective action is taken by both the contractor and caterer;
13.12.4.7. Staff shall be trained to report pest sightings and in appropriate trap handling to prevent damage and relocation of traps;
13.12.4.8. Site to have documented reviews of pest control performance: Review performance of the contractor through trend analysis, visual inspection of pest control operator (recommended twice per year or as needed).

13.12.5. Additional details on requirements are provided in the Pest and Animal Control Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.12-001 PRP 12	Pest and Animal Control

13.13 PRP 13 Thawing

13.13.1. The organization should have a procedure to outline the process for products to be thawed in such a way that prevents the growth of pathogens and cross contamination of all frozen and RTE food. National and local regulations must be followed for the thawing process.

13.13.2. Approved Thawing Methods: National and local regulations should be followed:

13.13.2.1. **Under refrigeration below 5°C / 41°F:** Record start and end time;
13.13.2.2. **Outside of Refrigeration:** The surface temperature of the food must not exceed 8°C / 46 °F and must be recorded. Once thawed using this method, the product must be immediately processed or sent to storage at or below 5°C /41°F;
13.13.2.3. **Under Cold Running Potable Water:** The product must be completely submerged in running water in a sealed package or a clean container. Water velocity must be sufficient to agitate and float off loose particles in the overflow. The surface temperature of the food must not exceed 5°C / 41 °F and must be recorded. To prevent the risk of cross contamination the sink must be clean and sanitized;
13.13.2.4. Automatic defrosting machines may be used provided the manufacturer's instructions are followed and the appropriate records are maintained.

13.13.3. Thawing of raw meat, poultry and seafood must be done while elevated on a drain rack (perforated trays) and not allowed to thaw in its own natural juices.

13.13.4. Decanting of meat, poultry and seafood shall be performed in a location that shall prevent cross contamination. It is recommended that this takes place inside the freezer if possible.

13.13.5. The procedure should define an internal shelf life for thawed products considering the freezing process leads to cell destruction which causes thawed items to spoil faster than fresh products.

13.13.6. Re-freezing of thawed products is only allowed after heat-treatment.

NOTE: Additional Seafood Constraints: (U.S. Specific) Frozen seafood packaged in reduced oxygen packaging (ROP) must be removed from the ROP state prior to thawing. Regular audit of the process should review the thawing process and check product labeling, check food surface temperatures, and verify control documentation.

13.13.7. Additional details on requirements are provided in the Thawing Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.13-001 PRP 13	Thawing

13.14 PRP 14 Food Preparation

13.14.1. The organization should have procedures in place to minimize microbiological contamination or growth, the introduction of physical contaminants or the introduction of chemical contamination during food handling to supply safe food. The procedure includes requirements for raw and ready to eat food.

13.14.2. Prevention of Microbiological Cross Contamination of Ready-to-eat Food from Raw Food must be followed by:

13.14.2.1. **Designated Handling Areas:** The areas for handling of raw foods and ready-to-eat foods shall be segregated by time or space;

13.14.2.2. **Designated Equipment / Utensils:** Work tables, cutting boards, sinks, food preparation machines, etc. for preparation and handling of ready-to-eat foods must be segregated from raw foods, unless a documented procedure of cleaning and disinfection of equipment used for raw foods is in place.

13.14.3. Prevention of Microbiological Cross Contamination of Ready-to-eat Foods from Food Handling Equipment:

13.14.3.1. Food handling equipment shall be cleaned and disinfected before use according to SOP: Cleaning and Sanitizing.

13.14.4. Prevention of Cross Contamination of Ready-to-eat Foods from Food Handlers:

13.14.4.1. Food handlers shall comply with the procedures of SOP: Health Monitoring and SOP: Personal Hygiene;

13.14.4.2. Food handlers shall be trained in food safety topics relevant to their job as required by **SOP Food Safety Training.**

13.14.5. Prevention of Microbiological Growth:

13.14.5.1. Food handling outside refrigeration shall be minimized. After receiving, goods shall be moved into refrigerated or freezer storage within a reasonable amount of time such that food safety is not compromised. Cold chain risk shall be assessed from food deliveries to the final passenger.

13.14.6. Prevention of Contamination from Environment:

13.14.6.1. The flow shall permit effective segregation between clean and unclean materials and processes. Some best practices include:

- Food handling environment shall be maintained, kept clean and free of pests;
- Outer packaging shall not enter food production areas;
- Wooden pallets shall not be used in food production areas.

13.14.7. Additional details on requirements are provided in the Food Preparation Procedure.

13.15 PRP 15 Portioning

13.15.1. The organization should have a procedure that defines strict hygiene conditions that shall be in place when portioning food. When portioning refrigerated products. Refer to OPRP 2 and follow national and local and customer contracted requirements as applicable:

13.15.1.1. Food portions shall be placed in single-use or reusable packages of suitable materials that have been properly washed and disinfected. Portioned food shall be covered with suitable food contact materials;

13.15.1.2. A system for portions must be implemented, indicating preparation and due dates and the identification of the portions. This system ensures identification of the age of food items so that the oldest stock with first expiration is always used first (FEFO) and that all food items - particularly time / temperature control for safety foods - are consumed before the designated shelf life of product has expired.

13.15.2. Stock rotation can be maintained and controlled using various date / day coding procedures suitable for the specific step in the process (e.g., bulk food items may have a manufacturer's product expiry date, which should be followed and adhered to throughout the complete supply chain.)

13.15.3. The process steps typically requiring date or day coding (but not restricted to) for stock control purposes are:

13.15.3.1. **Receiving:** Ensure that items in the warehouse are clearly labeled;
13.15.3.2. **Storage Prior to Use in the Kitchen:** Ensure that product is covered;
13.15.3.3. Thawing;

NOTE: Once thawed, items must be cooked or processed within its designated shelf-life for the product or according to the Thawing Procedure.

13.15.3.4. **Storage after Cooking and Chilling:** Label or equivalent system to record date prepared and use by date;
13.15.3.5. **In-Process Food Items:** Check the quality of the items prior to plating. If mold is present food item should be disposed of;
13.15.3.6. **Assembly / Tray Setup (TSU):** Create a gold standard to match TSU specification. Monitor portioning of items using scales as described in specification;
13.15.3.7. Final holding.

13.15.4. Shelf Life and Time Control:

13.15.4.1. The organization should establish internal shelf-life standards for foods to ensure food safety and quality. Follow national and local regulations and customer contracted requirements to ensure high quality foods are boarded. As a general guideline:

- Maximum 72 hours for hot food from cooking to the scheduled time of departure;
- Maximum 48 hours for cold food from start of preparation / end of thawing to scheduled time of departure;

- Airlines additionally need to consider the intended time until consumption depending on their time / temperature regime available on board until service to the passenger.

NOTE: Certain products, due to their pH value and / or water activity, may have a substantially longer shelf-life than stated above.

13.15.5. Date or Day Coding Methods:

13.15.5.1. The following are suggested methods but are not exhaustive. Many of the label options are commercially available as set out in product catalogs. Color coding for the day of the week, date labeling, colored marker pens (food grade) that correspond to day of the week, Manufacturers' "Use By" or "Best Before":

- Whatever system is used, it must be clearly documented in writing and all staff should receive appropriate training on the correct use of the date / day coding system(s);
- Standards must be followed, and outdated food discarded.

13.15.6. Additional details on requirements are provided in the Food Preparation Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.15-001 PRP 15	Portioning Procedure

13.16 PRP 16 Freezing, Storage, and Thawing

13.16.1. The organization must have a procedure that defines the process for in-house freezing to control pathogenic growth. National and local regulations and customer contracted requirements must be followed as applicable.

13.16.2. The procedure specifies that the finished product (that is specified as fresh) needs to be frozen, the caterer should obtain approval from the customer. Products that were previously frozen cannot be re-frozen.

13.16.3. In-house prepared products to be frozen following approved methods of freezing:

13.16.3.1. Conventional freezing under deep freezer conditions;
13.16.3.2. Accelerated freezing techniques (e.g., blast freezing, cryogenic freezing, liquid nitrogen, etc.)

13.16.4. The following requirements apply to in-house prepared products that are frozen:

13.16.4.1. Products frozen in-house need to be labeled with the original shelf life issued by the original manufacturer or by the caterer;
13.16.4.2. Products to be frozen in-house must be frozen as close as possible to the production date;
13.16.4.3. All products must be fully covered. Raw and cooked products must not be mixed in the same container;
13.16.4.4. Products must be frozen in small batch sizes to facilitate quick freezing (i.e., single layers, individual components, etc.);
13.16.4.5. Products must be labeled with the original production date, a 'Frozen On' date and a 'Use By' date;
13.16.4.6. As a guideline, in-house frozen products must not have longer than 12 weeks of shelf life. However, the caterer can deviate from this guideline by shelf-life testing or other recognized methods (e.g., through chemical analysis);
13.16.4.7. A method must be in place to ensure proper stock rotation and that products are used within their allotted shelf life;

13.16.4.8. Thawing of products must comply with the thawing process outlined in the Thawing Procedure.

13.16.5. Chilled Bought-In Products to be Frozen In-House:

13.16.5.1. To allow shelf-life extension, the original manufacturer shall provide written, evidence based, documentation supporting the additional time. Products frozen in-house shall be labeled with the original shelf life as issued by the manufacturer or caterer:

- Products must have a minimum of three days of shelf life remaining. Where possible, the original manufacturer's date marking must remain on the packaging to provide traceability and to demonstrate that the product has not been frozen on the last day of its shelf life;
- Products must be fully covered. Raw and cooked products shall be kept in separate containers;
- Products must be frozen in small batch sizes to facilitate quick freezing (i.e., single layers, individual components, etc.);
- Products must be labeled with a 'Produced On', 'Frozen On' and 'Use By' dates;
- Thawing of products must comply with the thawing process outlined in the Thawing Procedure.

13.16.6. Additional details are outlined in the Freezing, Storage and Thawing Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.16-001 PRP 16	Freezing, Storage, and Thawing

13.17 PRP 17 Transport

13.17.1. The organization should have a procedure to define the requirements for storage and transportation of meals to the aircraft. The control of temperature during dispatch, loading and aircraft catering will prevent the growth of pathogens in TCS foods. National and local regulations and customer contracted requirements will apply. Procedure requirements are:

13.17.2. Dispatch:

13.17.2.1. **Cold Food:** Ensure that surface temperature prior to dispatch does not exceed 5°C / 41°F;
13.17.2.2. **Hot Food:** Ensure that surface temperature prior to dispatch is not lower than 63°C / 145°F.

13.17.3. Transportation and Loading:

13.17.3.1. **Cold Food:** Food surface temperature does not exceed 10°C / 50°F;
13.17.3.2. **Hot Food:** Food surface temperature is not lower than 60°C / 140°F.

13.17.4. Monitoring Procedure:

13.17.4.1. Temperature is to be taken as close to the point of dispatch time as possible.

13.17.5. Transportation of food to the aircraft in refrigerated trucks is best practice to maintain the temperature of food. When a refrigerated truck is not provided, food temperatures are maintained using dry ice or an equivalent cooling method.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.17-001 PRP 17	Transport

13.18 PRP 18 Food Reheating

13.18.1. The organization should have a procedure that defines the requirements for reheating of food to prevent pathogenic growth. Where national and local time and temperature regulations exist, they shall be used when reheating food.

13.18.2. Where there are no regional or national and local requirements, the following can be used to maintain food safety. Food reheating shall be carried out rapidly. The reheating process shall be adequate, and the core temperature of the product shall reach 75°C / 167°F within one hour after removal from the refrigerator.

13.18.3. Heated food temperature shall be monitored at regular intervals.

*13.18.4. Reheated hot foods shall meet **temperature requirements as outlined in PRP 17 Transport and Loading 13.17.3**.*

NOTE: The quick reheating process raises the food rapidly through the interval of temperatures between 5°C / 41°F and 63°C / 145°F. For this purpose, high pressure air ovens or microwave or infrared heaters are generally used.

13.18.5. Additional requirements are detailed in the Food Reheating Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.18-001 PRP 18	Food Reheating

13.19 PRP 19 Food Service

13.19.1. The organization should have a procedure that outline the handling of food to ensure that food is kept safe, not mishandled and protected from contamination.

13.19.2. Food that is not to be consumed shall be discarded; therefore, it shall be neither reheated nor returned to cooling units (refrigerator or freezer).

13.19.3. Additional requirements are detailed in the Food Service Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.19-001 PRP 19	Food Service

13.20 PRP 20 Foreign Material Control

13.20.1. The organization should have a procedure that defines the processes that are implemented to prevent foreign material entering the product. Foreign material are physical contaminants (non-food objects) that compromise the safety of food and are potentially a choking hazard (e.g., hair, insects, plastic, metal etc.) Every measure should be taken by suppliers and caterers to ensure that foreign material does not enter food.

13.20.2. Additional requirements for foreign material control are defined in the Foreign Material Control Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.20-001 PRP 20	Foreign Material Control

13.21 PRP 21 Delay Procedure

13.21.1. The organization should have a procedure that defines the requirements to ensure the safety of food when an aircraft is significantly delayed after food has been catered.

13.21.2. The airline and the caterer must communicate delays and work together to ensure that time-temperature requirements for hot and cold food are maintained to keep food safe.

13.21.3. Additional requirements are defined in the Delay Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.21-001 PRP 21	Delay Procedure

13.22 PRP 22 Flight Attendant / Crew Inflight Training

13.22.1. The organization should have a procedure that defines the requirements to ensure the safety of food when handled by flight attendants and crew. The training should include handling of hot and cold food to prevent contamination.

13.22.2. Additional requirements are defined in the Flight Attendant / Crew Inflight Training Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.22-001 PRP 22	Flight Attendant / Crew Inflight Training

13.23 PRP 23 Allergen Management

13.23.1. The organization should have a procedure that defines the requirements for allergen management and control throughout the process from receiving to dispatch. National and local regulations must be followed.

13.23.2. Procedures must be in place to minimize the risk of undeclared allergen inclusion through cross contact in food and drink and to ensure that accurate, up to date allergen information is available for allergic passengers where legally required.

13.23.3. Procedures must ensure provision of accurate allergen information to enable passengers to make an informed food choice upon request - when departing from countries where legally required and according to countries' legislation. As well as to minimize allergen cross contamination for SPML's with allergen claims.

13.23.4. As a minimum the allergens controlled on site must conform to the requirements of the legislation in the country of operation.

EU Allergen List

- Cereals containing gluten (namely: wheat, rye, barley, oats, spelt, kamut or their hybridized strains)
- Egg
- Peanuts
- Milk
- Celery
- Sesame Seeds
- Lupine
- Mollusks (e.g., squid)
- Crustaceans (e.g., prawns)
- Fish
- Soybeans
- Nuts (namely: almonds, hazelnuts, walnuts, cashews, pecan nuts, Brazil nuts, pistachio nuts, macadamia or Queensland nuts)
- Mustard
- Sulfur Dioxide and sulfites at >10mg / kg

USA Allergen List

- Milk
- Fish (e.g., salmon, cod, etc.)
- Tree nuts (e.g., almonds, hazelnuts, etc.)
- Wheat
- Sesame (effective on January 1, 2023)
- Eggs
- Crustacean shellfish (e.g., prawns, etc.)
- Peanuts
- Soybeans

13.23.5. Additional allergen management requirements are detailed in the Allergen Control Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.23-001 PRP 23	Allergen Management

13.24 PRP 24 Environmental Monitoring

13.24.1. The organization should have a procedure that details the requirements of the facility environmental monitoring program. A seek and destroy program should be in place to monitor the environment. National and local regulations for environmental monitoring should be followed. Facilities must monitor listeria spp. or Listeria monocytogenes. The procedure may also include monitoring of other bacteria as appropriate (e.g., Salmonella, Enterobacteriaceae.)

13.24.2. *The procedure should include preventive measures such as risk-based hygienic zoning within the facility (e.g., high care [surfaces and areas where food is prepared)] and low care areas [areas located further away from food preparation areas: inbound and outbound docks, dirty side of dish room, toilets, etc.])*

NOTE: FDA listeria guidelines refers to EMP swab areas as Zone 1 to Zone 4. The procedure also includes process flow of employees, materials and equipment, color coding of tools used for cleaning and sanitation, swab site list, number of swabs for each zone to be taken as part of the monitoring plan.

13.24.3. *Corrective action to be taken when a positive result or OOS result is received must be documented with additional vector swabs and the procedure to confirm that the absence of listeria should be defined.*

13.24.4. *Employees taking environmental swabs must be trained.*

13.24.5. *Swabs may be tested in-house for routine monitoring with periodic proficiency testing at an external laboratory.*

13.24.6. *Environmental monitoring data should be trended to ensure that the program is effective to prevent the potential of inadvertent transfer of environmental bacteria to food.*

13.24.7. *Additional requirements for environmental monitoring are defined in the Environmental Monitoring Program Procedure.*

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.24-001 PRP 24	Environmental Monitoring

13.25 PRP 25 Complaint Management

13.25.1. *The organization should have a procedure to define the requirements for monitoring of food safety complaints received from customers. Complaints may relate to the quality of food (e.g., moldy, expired product or food safety [foreign objects, food borne illness]).*

13.25.2. *The procedure typically includes:*

13.25.2.1. Person responsible for completing the investigation to determine the root cause and implement corrective actions to prevent a recurrence. Investigations should be completed by competent personnel;

13.25.2.2. A checklist used to collect pertinent information regarding each incident. If possible, recover a sample or obtain a photo of the evidence;

13.25.2.3. A system for receipt and recording of customer complaints. In addition, based on the severity of the complaint, the investigation should be completed expediently;

13.25.2.4. A clearly defined process for the investigation and communication of complaints throughout the business unit;

13.25.2.5. A requirement that corrective action is taken when necessary and that investigation findings are communicated to the customer as appropriate;

13.25.2.6. The complaint handling procedure should ensure that regular reviews of complaint data are conducted to identify potential trends, to avoid recurrence and to aid continuous improvement of product safety.

13.25.3. Additional requirements are detailed in the Complaint Management Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.25-001 PRP 25	Complaint Management
F13.25-001 PRP 25	Complaint Management Log

13.26 PRP 26 Special Meals

13.26.1. The organization should have a procedure that defines the requirements for handling special meals where claims are made about the methods of production (e.g., Halal, Kosher, GFML, etc.) The site must maintain the necessary controls and certification on status in order to make the claim to ensure that safe food is boarded, and accurate information is provided to customers.

13.26.2. National and local regulations should be followed. If nominated food is supplied to caterers, airlines must ensure that certification can be provided to caterers upon request.

13.26.3. The following must be available to cabin crew for all special meals:

13.26.3.1. Special meal code;
13.26.3.2. Meal description;
13.26.3.3. Allergen information if applicable by regulation or mutually agreed customer requirement.

13.26.4. Additional requirements for Special Meals are defined in the Special meals Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.26-001 PRP 26	Special Meal Procedure

13.27 PRP 27 Roundtrip Catering

13.27.1. The organization should have a procedure that defines the requirements for round trip catering to minimize food safety hazards during return catering.

13.27.2. The procedure should consider requirements for the TCS that will be consumed on the return flight after catering has been completed. Time – Temperature control should be considered for all menu items based on kitchen departure time, duration of the flight, ground time and time of food consumption on the return flight.

13.27.3. Additional requirements are defined in the Roundtrip Catering Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.27-001 PRP 27	Round Trip Catering

13.28 PRP 28 Product Salvage

13.28.1. The organization should have a procedure that defines the requirements for salvage of shelf stable snacks, beverages, alcohol etc. when required by airlines.

13.28.2. The procedure should include:

13.28.2.1. List of items that can be salvaged to be re-boarded onto aircrafts. Ready to eat food and fresh items shall not be salvaged (e.g., unpasteurized products, sandwiches, etc.);
13.28.2.2. Inspection process to ensure that the product meets quality requirements (i.e., sealed, within expiration date, etc.);
13.28.2.3. Training requirements for employees conducting the salvage process.

13.28.3. Additional requirements are outlined in the Product Salvage Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.28-001 PRP 28	Product Salvage

13.29 PRP 29 Product Substitution

13.29.1. The organization should have a procedure that defines the requirements for substitution of menu items if the item required by the customer specification is not available. This process is important to ensure that the flight crew has product information to respond to customer inquiries.

13.29.2. The procedure includes:

13.29.2.1. Ensuring substitutions are approved by customers;
13.29.2.2. Defining the responsible person at the location responsible for approving substitutions;
13.29.2.3. Documentation required to be boarded when a substitution occurs.

13.29.3. Additional requirements are outlined in the Substitution Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.29-001 PRP 29	Product Substitution

13.30 PRP 30 Hazardous Meal Ingredients

13.30.1. The organization should identify ingredients that are known to pose a specific food safety risk to ensure through menu design and planning as well as procurement of semi-finished and finished products that the hazards are adequately controlled.

13.30.2. A procedure should be developed to ensure the absence of restricted ingredients during each meal presentation, menu design or similar event.

13.30.3. Additional requirements are outlined in the Hazardous Meal Ingredient Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.30-001 PRP 30	Hazardous Meal Ingredient

13.31 PRP 31 Product Design

13.31.1. The organization should have a procedure that defines the requirements for product design to minimize food safety hazards throughout the food chain to final consumption onboard the aircraft. All personnel involved with the product design process must be trained so that they understand the food safety requirements of the process.

13.31.2. Additional requirements for product design are defined in Product Design Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.31-001 PRP 31	**Product Design**

13.32 PRP 32 Finished Product Testing

13.32.1. The organization should have a procedure that defines the requirements for microbiological testing of finished product. If finished products are tested for pathogens, the facility must ensure that all ingredients used for the product have unique lot codes and have not been used for other products that have been boarded.

13.32.2. Additional requirements for product testing are defined in Finished Product Testing Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.32-001 PRP 32	Finished Product Testing

13.33 PRP 33 Food Defense

13.33.1. Top management is responsible for assigning a Food Defense Team. The Food Defense Team is responsible for establishing, implementing and maintaining procedures for the Food Defense Plan. The Food Defense Team is responsible for ensuring that security measures are in place and working to product quality and food safety.

13.33.2. Additional requirements are detailed in the Food Defense Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.33-001 PRP 33	Food Defense

13.34 PRP 34 Food Fraud Prevention

13.34.1. The Food Fraud Team is responsible for ensuring that intentional adulteration risks are controlled and mitigated for all raw materials, WIP products, packaging materials and finished products. The Food Fraud Team is responsible for conducting a Food Fraud Vulnerability Assessment.

13.34.2. Additional requirements are detailed in the Food Fraud Prevention Procedure.

REFERENCE WFSG IMPLEMENTATION GUIDE

ISO 22000:2018	
Document #	**Document Name**
P13.34-001 PRP 34	Food Fraud Prevention

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15.
Abbreviated Terms

CAPA	Corrective Action and Preventive Action
CCP	See Critical Control Point
Certificate of Analysis (COA)	Signed document showing results of analysis carried out on a product.
FEFO	First-Expired, First Out
FIFO	First-In, First Out
FSMS	Food Safety Management System
FSP	Food Safety Program
FSSC	Food Safety System Certification
GFSI	Global Food Safety Initiative
GMP	Good Manufacturing Practices
HACCP	Hazard Analysis Critical Control Point
IATA	International Air Transportation Association
ISO	International Organization for Standardization
NIST	National Institute of Standards and Technology
OPRP	Operational Prerequisite Program
OOS	Out of Specification
PCO	Pest Control Operator

PDCA	Plan-Do-Check-Act
PMP	Preventive Maintenance Program
PRP	Prerequisite Program
SDS	Safety Data Sheet
SOP	Standard Operating Procedure
SSOP	Standard Sanitation Operating Procedure
WIP	Work in Progress

16. Glossary

Adulteration:	A food product fails to meet regulatory standards.
Appendix:	Documents used to make a record of completing all or part of the process described in procedures and work instructions.
Approved Supplier:	Supplier approved to supply ingredients, packaging materials and food items after the manufacturing location has been verified to produce foods that meets national and local regulations.
Broker:	Intermediary party within the supply chain that sources and supplies ingredients, packaging materials and food items.
Calibration:	Checks to ensure that critical items such as scales and thermometers are accurate and precise.
Chilled Food:	Ready-to-eat meals that are delivered as chilled food and that require reheating on board.
Cold Food:	Ready-to-eat TCS meals and ready-to-eat meals that are delivered as cold food that will not be heated prior to consumption.
Comminuted:	Reduced to small fragments such as ground meat / minced meat.
Communicable Disease:	A disease that can be communicated from one person to another.
Context of the Organization:	The combination of internal and external factors and conditions that can influence an organization's approach to its products, services and investments of interested parties.
Contract Services:	Contract Services include pest control, sanitation services, storage and transport contractors.
Correction:	Action taken to eliminate a detected nonconformity.
Corrective Action:	Action taken to eliminate the cause of a nonconformance that has occurred, and prevent reoccurrence of the nonconformance.

Critical Control Point (CCP):	A step at which control can be applied and which is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level.
Critical Limit:	A criterion, which separates acceptability from unacceptability.
Danger Zone:	The temperature range between 41°F and 140°F (5°C to 60°C). Many foods pathogenic or food spoilage bacteria will multiply in food held within this range.
Deviation:	Failure to meet a critical limit.
Direct Food Contact Surfaces:	A surface of equipment with which food comes into contact.
Disinfectant:	A chemical, which reduces harmful bacteria to a safe level.
Disinfection:	The reduction, by means of chemical agents and / or physical methods, of the number of micro-organisms in the environment, to a level that does not compromise food safety or suitability.
Dispatch:	Time when product is removed from holding coolers to trucks for transport to aircraft.
Distributor:	Intermediary party within the supply chain that distributes ingredients, packaging materials and food items from approved suppliers to catering locations.
Emergency Situation:	An event that can have a negative impact on food safety that is not controlled by the day-to-day controls of the FSMS.
Environmental Monitoring Zones:	Areas in which there is aggressive search of environmental pathogens. Equipment and environment are divided in different zones in a zone chart based on level of risk of product contamination.
Final Holding:	The last storage period for food products that have been prepared and packaged or packed into boarding equipment for later transport to an aircraft. Generally, the final holding area for food products is a holding refrigerator where products are thoroughly chilled prior to transport to the aircraft.

Finished Product:	A product which has undergone all stages of manufacture including primary packaging.
Flight Kitchen:	A production kitchen facility operated by an in-flight caterer for the purpose of preparing food products for boarding onto passenger aircraft.
Flow Diagram:	A systematic representation of the sequence of steps or operations used in the production of a particular product.
Food:	Any substance, whether processed, semi-processed or raw which is intended for human consumption, including drinks, chewing gum and any substance which has been used in the manufacture, preparation, or treatment of "food". Excludes cosmetics, tobacco and substances used only as drugs.
Food Contact Packaging:	Disposable materials that are in contact with food.
Food Defense:	Protecting against ideologically driven adulteration of food.
Food Fraud:	Any suspected intentional action by businesses or individuals for deceiving purchasers.
Food Fraud Mitigation:	Protecting against economically motivated adulteration of food.
Food Handler:	Any individual working with food, food equipment, utensils or food contact surfaces and is therefore expected to comply with food hygiene requirements.
Food Handling Area:	An area used for handling of open food.
Food Safety Culture:	The shared values, beliefs and norms that affect mindset and behavior toward food safety in, across and throughout an organization.
Food Safety Plan (FSP):	The documents that make up the HACCP Plan.

Food Safety Management System-FSMS:	An all-encompassing food safety program which includes HACCP, SOPs, pest control and other pre-requisite components and provides a comprehensive framework by which an operator can effectively control risk factors.
Food Safety Team (HACCP Team):	The group of people who are responsible for developing, implementing, and maintaining the HACCP system.
Food Service:	The preparation, portioning, delivery, etc. of ready-to-eat foods.
Foreign Matter:	Anything physical that should not be in the product.
Foreign Supplier:	Supplier external to the country where the catering facility is located.
Forms:	Documents used to make a record of completing all or part of the process described in procedures and work instructions.
Good Manufacturing Practices (GMP):	The combination of manufacturing and management procedures aimed at ensuring that products are consistently manufactured to meet specifications and customer expectations.
HACCP (Hazard Analysis and Critical Control Points):	A system, which identifies, evaluates, and controls significant food safety hazards.
Handling of Food:	Includes the making, manufacturing, producing, collecting, extracting, processing, storing, transporting, delivering, preparing, treating, preserving, packing, cooking, thawing, serving, or displaying of food.
Hazard:	A biological, chemical, or physical agent in food with the potential to cause harm.
High Risk Area:	Areas of the facility where food items are prepared, cooked, chilled, and portioned.
High Risk Foods:	Foods, which have high protein content and readily support bacterial growth and will not be cooked again before eating.

Hot Food:	Ready-to-eat meals that are delivered at hot temperatures and that do not need further heating prior to consumption.
Hygienic Zoning:	A risk-based program designed to protect products by restricting movement of hazards from low-risk areas of the factory to medium-risk areas and then to high-risk areas over or near exposed product.
Infrastructure:	The facility building and grounds and includes all surfaces within the building (e.g., ceiling, walls, lights, vents, floors, etc.), as well as external to the building (e.g., roof, parking lots, landscape, etc.)
Item:	Ingredient, finished product, food contact packaging or beverage.
Lot:	A quantity of food, which is prepared or packed under essentially the same conditions usually: 1. From a particular preparation or packing unit; 2. During a particular time ordinarily not exceeding 24 hours. See also **Batch**.
Lot Identification:	Information which indicates, in a clearly identifiable form, the: 1. Premises where the food was packed or prepared; 2. Lot of the food in question.
Low-Risk Foods:	Foods which do not readily support bacterial growth, and which do not commonly contain microbial pathogens in harmful amounts.
Microbiological Pathogens:	Bacterium, virus, or other microorganism that can cause disease.
Monitor:	The act of conducting a planned sequence of observations or measurements of control parameters to assess whether a CCP is under control.
Non-Conformity:	A deviation from a specification, a standard or an expectation.

Operational Prerequisite Program (OPRP):	Control measure or combination of control measures applied to prevent or reduce a significant food safety hazard to an acceptable level, and where action criterion and measurement or observation enable effective control of the process and / or product.
Pathogen:	Any disease-producing organism.
Preparation:	Activities carried out on raw or cooked foods that include but are not limited to the following: slicing, dicing, chopping, mixing, piping, blending, mincing, coating, marinating, and cutting.
Prerequisite Programs (PRP):	Programs to manage the basic conditions needed to achieve a clean and hygienic environment needed to produce safe products.
Preventive Control:	Controls implemented to control a hazard identified in the hazard analysis including CCPs, PRPs and other HACCP controls.
Process:	A set of interrelated or interacting activities, which transform inputs into outputs.
Process Step:	See **Step**.
Processing:	The separate operations involved in the manufacture of a product.
Protective Clothing:	Clothing provided for wear in the workplace to protect food from contamination risks: overalls, coats, hat, gloves, shoes, boots, etc.
Quarantine:	Where a product, ingredient, equipment or any component is isolate.
Raw Material:	Any material, ingredient, starting material, semi-prepared or intermediate material, packaging material, etc., used by the manufacturer to produce a finished product.
Raw Food:	Foods of animal or vegetable origin, which normally require cooking (meats, poultry, eggs, fish, shellfish, certain vegetables) or washing (vegetables, fruit) prior to consumption.

Ready-to-Eat (RTE) Food:	Food that is in a form that is edible without washing, cooking, or additional preparation by the food establishment or the consumer and that is reasonably expected to be consumed in that form.
Recall:	A request to return product after the discovery of safety issues or product defects that might endanger the consumer or put the maker / seller at risk of legal action.
Records:	Data and information stating results achieved or providing evidence of activities performed.
References:	External documents or sources used in preparing documentation or completing work.
Root Cause Analysis:	Utilization of a process to identify what caused the process failure (e.g., Five Whys, Fishbone diagram, etc.)
ROP:	Reduced Oxygen Packaging: Placing food into a package, removing the oxygen from the packaging, and sealing it, to keep food fresher for a longer period of time.
Risk:	A function of the probability of an adverse effect and the magnitude of that effect, consequential to a hazard(s) in food. The risk of a hazard may in a simple way be expressed as the probability with which a hazard may occur.
Risk Analysis:	A process consisting of three components: risk assessment, risk management and risk communication.
Risk Assessment:	The scientific evaluation of known or potential adverse health effects resulting from human exposure to food-borne hazards.
Sabotage:	A deliberate action aimed at weakening a corporation through subversion, obstruction, disruption, or destruction.
Safety Data Sheet:	A document that contains information on the potential health effects of exposure to chemicals, or other potentially dangerous substances, and on safe working procedures when handling chemical products.
Salvage:	The transfer of packaged, safe to eat food and drink back into in-flight service.

Sanitation:	Treatment of a cleaned surface with a chemical or physical agent to destroy disease / spoilage causing organisms.
SOP:	Standard Operating Procedure. A detailed description of how a particular task is to be carried out.
Special Meals:	Meals prepared especially for a passenger's diet, taste or religious preference and prepared under the airline's specifications. International special meal codes and guidelines have been agreed upon by the airline industry in an effort to improve the consistency of special meals for passengers.
Specification:	The prescribed requirements to which a product or service must conform.
Statistical Process Control (SPC):	The use of statistical methods for collection, analysis, and display of process, product, or service variation data.
Step:	A point, procedure, operation or stage in the food production chain including raw materials, from primary production to final consumption.
Substitution:	Replacement of a food item, beverage or packaging material.
TCS:	Time and Temperature Control for Safety. Foods that need time and temperature control for safety.
Thawing:	A controlled process for defrosting frozen products.
Traceability:	The ability to track any item that is used for consumption, through all stages of production, processing and distribution through the food supply chain.
Top Management:	Senior management with the authority and responsibility for the facility and the ability to allocate resources to the FSMS.
Validation:	Obtaining and evaluating scientific and technical evidence a control measure, combination of control measures is capable of effectively controlling a hazard.

Variability:	The variation or inconsistency of a measurement.
Verification:	The application of methods, procedures, tests and other evaluations, in addition to monitoring, to determine compliance with the HACCP plan.
Waste:	Any item which is not fit for human consumption or any product or by-product which was never intended for human consumption, and which requires safe and legal disposal.
Withdraw:	Product withdrawal occurs when a product has a minor violation that would not be subject to FDA legal action, or equivalent.
Work environment:	The work environment and facility conditions that are conducive to meeting the requirements of the FSMS.
Work instruction:	Step by step directions on how a task should be done.

17.
Summary of Changes

As part of this revision to WFSG, a gap assessment was performed comparing WFSG Version 4 to the standards that comprise FSSC 22000 V5.1, November 2020 (ISO 22000:2018 and TS 22002-2:2013).

The Food Safety Management System requirements have been expanded to incorporate the requirements of ISO 22000.

Within Hazard Analysis Critical Control Points (HACCP), the Critical Control Points (CCP) remain the same- Cooking and Chilling, however, the concept of OPRP- operational prerequisite programs is further defined. OPRP are used to control significant hazards which can be mitigated by control measures, such as produce wash and sanitation and temperature control. All other support programs have been identified as prerequisite programs. A WFSG Implementation Guide accompanies the WFSG 2022 to support the successful implementation of FSSC22000 with relevant procedures and forms.

The table below shows the Table of Contents from WFSG Version 4 as compared to where the information can be found in WFSG 2022.

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1.2 User Guide	Introduction
1.3 Food Safety Management System	4. Context of the Organization 5. Leadership 6. Planning 7. Support 8. Operation 9. Performance Evaluation 10. Improvement
2.1 Accountability	5. Leadership
2.2 HACCP	8. Operation 11. Critical Control Points (CCP) 12. Operational Prerequisite Programs (OPRP) 13. Prerequisite Programs (PRP)
2.3 Critical Control Points	11. Critical Control Points (CCP)
2.4 Support Programs / Control Points (CPs) / Standard Operating Procedures (SOPs)	12. Operational Prerequisite Programs (OPRP) 13. Prerequisite Programs (PRP)
CP 1: Control at Food Receiving CP2: Control of Cold Storage Temperature CP3: Control of Food Processing	12.1 OPRP 2: Cold Chain Interruption during Food Production
SOP: Product Design	13.31 PRP 31 Product Design
SOP: Hazardous Meal Ingredients	13.30 PRP 30 Hazardous Meal Ingredients
SOP: Health Monitoring	13.5 PRP 5 Health Monitoring
SOP: Pest Control	13.12 PRP 12 Pest and Animal Control

Version 4	Version 5
SOP: Supplier Approval	13.7 PRP 7 Purchasing Management
SOP: Personal Hygiene	13.4 PRP 4 Personnel Hygiene
SOP: Food Safety Training	7. Support
SOP: Temperature Instrument Verification & Calibration	13.6 PRP 6 Preventive Maintenance
SOP: Cleaning and Sanitizing	13.9 PRP 9 Cleaning and Sanitizing
SOP: Physical Contamination (Foreign Object)	13.20 PRP 20 Foreign Material Control
SOP: Food Handling	13.14 PRP 14 Food Preparation
SOP: Stock Rotation / Date (Day) Coding / Time Control	13.8 PRP 8 Storage and Transport 13.15 PRP 15 Portioning
SOP: Washing Raw Fruit and Vegetables	12.1 OPRP 1 Produce Wash and Sanitation
SOP: Thawing	13.13 PRP 13 Thawing
SOP: Allergen Management	13.23 PRP 23 Allergen Management
SOP: In-House Freezing	13.16 PRP 16 Freezing, Storage and Thawing
SOP: Dispatch, Transport and Aircraft Loading	13.17 PRP 17 Transport
SOP: Return Catering	13.27 PRP 27 Round Trip Catering
SOP: Flight Attendant / Cabin Crew Training	13.22 PRP 22 Flight Attendant / Crew Inflight Training
SOP: Delay Handling	13.21 PRP 21 Delay Procedure
SOP: Product Recall	8.3 Traceability System
SOP: Food Safety Complaints	13.25 PRP 25 Complaint Management