**Facility: (INSERT COMPANY NAME AND ADDRESS)**

**Other retail facilities, farmer markets, etc.: (INSERT NAMES)**

**Purpose:**

This HACCP plan describes products and process used for Reduce Oxygen Packaging of Frozen Fish products. The establishment has a Specialized Meat Processing at Retail Food Establishment Variance that contains Good Manufacturing Practices (GMPs) and Standard Operating Procedures (SOPs) which are followed.

**Type of food(s):** Frozen Fish Products:

**Process Flow diagram:** see below

**Facility Layout:** see attached

**Equipment used:**

* Freezer
* Vacuum packaging machine (INSERT TYPE)

**Food employee and supervisory training plan addressing food safety issues of concern:** Employees are trained in proper food safety issues associated with reduced oxygen packaging of raw and cooked foods. This includes preventing cross-contamination throughout processing and packaging by doing cooked foods before raw food, properly cooling cooked foods, and freezing all reduced oxygen packages after packaging. Employees will be observed to make sure they follow practices.

**Standard Operating Procedures (SOP)**

Only fresh pre-portioned, frozen shall be used.

* Removed from package, in frozen state;
* Evaluate as necessary;
* Cut into individual portions as necessary, in frozen state;
* Reduced oxygen packaged (vacuum packaged), in frozen state;
* Labeled and return to freezer; and
* Held at frozen temperature until sale.

There will be no cross contamination between ready to eat (RTE) food products and raw food products.

Vacuum package machine (reduced oxygen packaging) is cleaned at the end of each processing shift or more frequently as needed according to our Specialized Retail Meat Processing Variance written Sanitation Standard Operating Procedure (SSOP).

Each package or unit will be appropriately labeled including a traceable lot code.

Product label will additionally include **“Important, keep frozen until used, open package and thaw under refrigeration immediately before use”**.

Product transport from processing facility to other company owned facility or farmer’s markets under refrigerated and/or frozen transportation. Product remains frozen during transportation and through sale.

**Each Critical Control Point (CCP)**

Temperature monitoring of food products in frozen storage

**Critical Limits for each Critical Control Point**

Food product temperature is less than or equal to 26°F or “firm to touch”.

**Method and frequency for monitoring and controlling each CCP and who**

Frozen product storage: Contact tip or equivalent calibrated thermometer used to measure food product temperature of a food package. Frozen product exterior of the package should be “firm” when “touched” by hand with a slight amount of force in frozen storage. Monitoring will be done to a package in the warmest part of the freezer a minimum of once per day of operation day by designated employee.

**Corrective actions**

* If the product temperature is greater than 26°F, determination of the cause of freezer malfunction will be found, corrected, or repaired.
* Product temperature is measured and action as followed:

|  |  |
| --- | --- |
| Product Temperature | Actions |
| > 26°F ≤ 31°F | Restore power supply, move to another freezer, place in insulated container with dry ice, or other appropriate actions to maintain frozen product temperature. |
| > 31°F ≤ 41°F | Re-freeze product.Open package(s), refrigerate product and utilize or sale within 7 days. |
| > 41°F | Dispose product.  |

**Records**

Food temperature log (see attached)

*Process Flow Diagram*

***Process Category: Raw Meat and Poultry Reduced Oxygen Packaging***

***2.*** *Receiving*

*Raw Fish*

***3.*** *Portion (optional)*

***4.*** *Storage (Refrigerated or Frozen)*

*Raw Meat/Poultry*

***6.*** *Package / Labeling*

***7.*** *Finished product storage (Frozen)*

***1.*** *Receiving Packaging Materials*

***5.*** *Storage of Packaging Materials*

***8.*** *Retail sales or transfer to other company locations*

CCP < 26°F or “firm to touch”

Note: Refrigerated storage prior to packaging requires a Variance

|  |  |  |
| --- | --- | --- |
| **(Faculty Name)** |  | **Frozen Food Temperature Log** |
| **(Faculty Address)** |  |
|  |  |  |  |  |  |
| **Product Name** | **Date / Time** | **Temperature (°F) Max. 26°F or “firm to touch”** | **Initials** |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
|   |   |   |   |  |  |

**Additional scientific data / supporting documentation as required**

**Tompkin paper**, Table 1, minimum temperatures for growth of bacteria of concern

Bruce Tompkin Ph.D. Armour Swift-Eckrich

Table 1. Minimum growth temperatures for selected foodborne pathogens.

 Minimum Growth

 Temperatures\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| Salmonellae1 | 7C | 44.6F |
| Pathogenic *E. coli* | 7-8C | 44.6-46.4F |
| *L. monocytogenes* | -0.4C | 31.3F |
| *Y. enterocolitica* | -1.3C | 29.7F |
| *Campylobacter jejuni* | 32C | 89.6F |
| *Staphylococcus aureus* | 7C | 44.6F |
| *Bacillus cereus*2 |
| psychrotrophic strains | 4C | 39.2F |
| *Clostridium perfringens* | 12C | 53.6F |
| *Clostridium botulinum* |
| nonproteolytic | 3.3C | 38F |
| proteolytic | 10C | 50F |

• 1One report of initial growth on bacon at 5C but then the population decreased.

• 2While growth of *B. cereus* occurs in milk at refrigeration temperatures (e.g., <7C), there is no evidence for this in meat and poultry. One study reported death of vegetative cells in ground beef at 12.5C (54.5F) and below.

• Parasites (e.g., *Trichinella spiralis*, *Taenia* spp., *Toxoplasma gondii*) and viruses do not multiply in meat or poultry products.

Source: International Commission on Microbiological Specifications for Foods. 1996.

Microorganisms in Foods: Microbiological Specifications of Food Pathogens. Blackie

Academic & Professional, New York.

**USDA Meat and Poultry Labeling Terms**

**FRESH POULTRY:**
"Fresh" means whole poultry and cuts have never been below 26 °F (the temperature at which poultry freezes). This is consistent with consumer expectations of "fresh" poultry, i.e., not hard to the touch or frozen solid.

In 1997, FSIS began enforcing a final rule prohibiting the use of the term "fresh" on the labeling of raw poultry products whose internal temperature has ever been below 26 °F.

The temperature of individual packages of raw poultry products labeled "fresh" can vary as much as 1 °F below 26 °F within inspected establishments or 2 °F below 26 °F in commerce.

Fresh poultry should always bear a "keep refrigerated" statement.

**Michigan Modified Food Code 2009**

1-201.10 Statement of Application and Listing of Terms.

 (1) "Fish" means fresh or saltwater finfish, crustaceans and other forms of aquatic life (including alligator, frog, aquatic turtle, jellyfish, sea cucumber, and sea urchin and the roe of such animals) other than birds or mammals, and all mollusks, if such animal life is intended for human consumption.

 (2) "Fish" includes an edible human FOOD product derived in whole or in part from FISH, including FISH that have been processed in any manner.

**3-201.11 Compliance with Food Law.**

(D) FISH, other than those specified in paragraph 3-402.11(B), that are intended for consumption in raw or undercooked form and allowed as specified in Subparagraph 3-401.11(D), may be offered for sale or service if they are obtained from a supplier that freezes the FISH as specified under § 3-402.11; or if they are frozen on the PREMISES as specified under § 3-402.11 and records are retained as specified under § 3-402.12.

3-201.14 Fish.

(A) FISH that are received for sale or service shall be:

(1) Commercially and legally caught or harvested; P or

(2) APPROVED for sale or service P

(B) MOLLUSCAN SHELLFISH that are recreationally caught may not be received for sale or service. P

Freezing 3-402.11 Parasite Destruction.

(A) Except as specified in ¶ (B) of this section, before service or sale in READY-TO-EAT form, raw, raw-marinated, partially cooked, or marinated-partially cooked FISH shall be:

(1) Frozen and stored at a temperature of -20°C (-4°F) or below for a minimum of 168 hours (7 days) in a freezer; P

(2) Frozen at -35°C (-31°F) or below until solid and stored at -35°C (-31°F) or below for a minimum of 15 hours; P or

(3) Frozen at -35°C (-31°F) or below until solid and stored at -20°C (-4°F) or below for a minimum of 24 hours.

3-502.12 Reduced Oxygen Packaging without a Variance, Criteria.

(C) Except for FISH that is frozen before, during, and after PACKAGING, a FOOD ESTABLISHMENT may not PACKAGE FISH using a REDUCED OXYGEN PACKAGING method.