SECTION 2

AN INTEGRATED QUALITY MANAGEMENT PROGRAM (IQMP) FOR THE ON-BOARD HANDLING AND PROCESSING OF TUNA

2.1 INTRODUCTION

Due to the rising concerns by the different countries of the world, there will have to be in the very near future requirements to have in place an adequate safety assurance program for the on-board handling of fresh/frozen tuna. Vessel owners/operators will have to show in writing the procedures that they are using to identify hazards associated at each point in the processing operation of the catching, handling, storage of tuna; which points are critical control points; and the preventive measures they are taking to assure that the safety of their product is guaranteed.

A number of quality control systems exist to ensure the above, the best known is the Hazard Analysis and Critical Control Point (HACCP) system. This system, while an international standard, is a narrowly defined food safety system that requires a number of pre-requisite requirements and does not deal with quality or economic fraud. A more comprehensive program, which incorporates HACCP, its pre-requisite requirements, regulatory requirements, and market requirements, is the Integrated Quality Management program (IQMP).

The IQMP specifies a number of generic areas or control points where hazards may occur. Each of these areas must be examined to see if there is a control point or critical control point in the process in that area. Annex 4 gives the definitions used in this manual to describe "control points" and "critical control points", etc.

Vessel owners/operators should conduct a study of their operation using the IQMP as a guide, incorporate the IQMP into their quality control programme and submit this programme to the competent authorities for approval.

2.2 ESTABLISHMENT OF CONTROL POINTS OR INSPECTION POINTS

As part of GMP procedures, fishing vessel owners/operators should implement planned procedures for the monitoring of their operations at Control Points or Inspection Points where problems are noted. Detection of problems at the earliest opportunity allows the problems to be related to the factors that caused them and permits the most effective approach to correct them.

Control or Inspection Points represent the last opportunity before any other processing takes place with the tuna to evaluate compliance with requirements and take corrective action where necessary.

For each Control or Inspection Point the following information must be specified:

1) The requirements that are being complied with.
2) The standard that is being employed during inspection.
3) Evaluation of the monitoring procedures.
4) The system for collection data and record keeping.
5) Description of the corrective action that will be implemented when problems are discovered.

There are 11 areas in the on board handling operation of tuna that are required to be examined at control or inspection points to ensure compliance with GMP requirements. They are discussed as the following sections:

Fish	2.3
Ice	2.4
Cleaning Agents, Sanitisers, Lubricants	2.5
Vessel Design, Production Facilities	2.6
Operation & Sanitation	2.7
Process Control	2.8
Fresh Storage Facilities	2.9
Frozen Storage Facilities	2.10
Final Product	2.11
Recall Procedures	2.12
Employee Qualifications	2.13

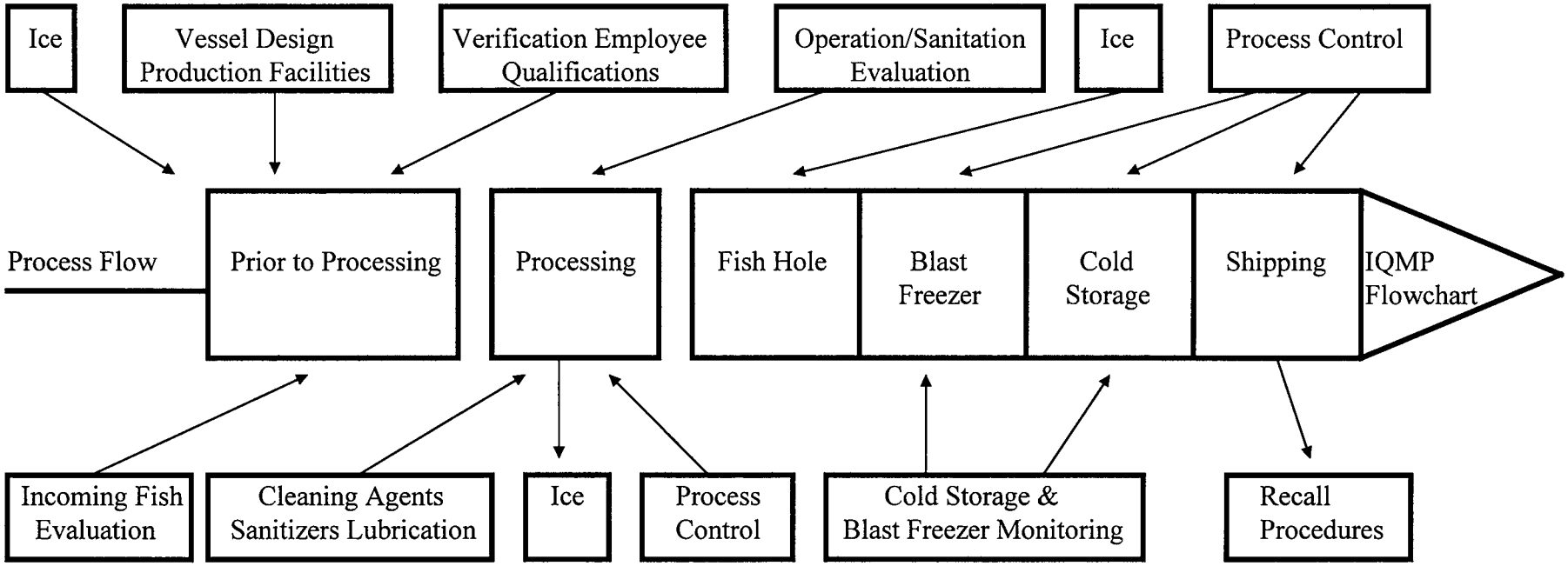
In establishing the Control or Inspection Points for the on-board operation of tuna, each owner must understand what hazards they are attempting to prevent and the location whereby an inspection or control procedure will provide the best opportunity to control the hazard.

A flow chart and table are found in sections 2.2.1 and 2.2.2. They provide an overview of where inspection or control points for each item may be established.

Section 2.2.3 is a form for setting up an individual IQMP program.

Annex 5 provides specific information regarding the potential critical control points for the on-board handling of fresh/frozen tuna.

2.2.1 Process Flowchart for Inspection or Control Points



2.2.2 Potential Inspection/Control Points

ITEM	HAZARDS	CONTROL POINTS
Fish	Health & safety risks tainted, decomposed, unwholesome tuna dead, non-compliance	Prior to processing, before catching
Ice	Contamination of tuna unsafe, unclean	Prior to use when received, during use
Cleaning Agents Sanitisers	Contamination of tuna with unapproved unsafe chemicals	Prior to use, when received, during application
Vessel Design Production Facilities	Contamination to tuna due to poor design of vessel	Prior to fishing, during fishing
Operation & Sanitation	Contamination to tuna due to poor operation & sanitation practice	Prior to catching, during operation, daily inspection
Process Control	Production of tuna that don't comply with safety quality, wholesomeness &/or fair trade requirements	During operation -washing, cleaning, cooling, icing, &/or freezing
Fresh Storage Facilities	Decomposition or contamination of tuna due to poor storage	During operation of fish hole
Frozen Storage Facilities	Decomposition or contamination of tuna due to poor storage	During operation of blast freezer/cold storage
Final Product	Production of tuna that does not comply with safety, quality & wholesomeness & fair trade requirements	Prior to unloading of fresh/frozen tuna
Recall Procedure	Unable to trace tuna to processor	During unloading, shipping
Employee Qualifications	Production of tuna posing health & safety risk	Prior to start up skilled fishery Personnel

2.2.3

IDENTIFICATION OF CONTROL POINTS

Type of Operation: _____

Check off those items which will be mentioned at a control point and identify where/when the point of time the inspection will occur.

ITEMS	POINT OF TIME OF INSPECTION
Fish	_____
Ice	_____
Cleaning Agents, Sanitisers Lubricants	_____
Vessel Design, Production Facilities	_____
Operation & Sanitation Process Control	_____
Fresh Storage Facilities	_____
Final Product	_____
Employee Qualifications	_____

Refer to the section indicated for completion of those control points that have been checked off.

2.3 FISH

2.3.1 Requirements

Under GOOD MANUFACTURING PRACTICES the following requirements are to be followed by the fishing vessel owner/operator, and crew.

1) No person shall take on board the fishing vessel any tuna that is decomposed, tainted or unwholesome.
2) When tuna is taken aboard the vessel it is required to be bleed properly.
3) After bleeding, the gut material must be removed. No tuna is to be kept on board of fishing vessel without being properly gutted and washed.
4) The gills from all tuna are to be removed properly.
5) Tuna should be placed in an insulated container containing two parts clean safe ice and one part clean safe salt water. The tuna should remain in this tank until the core temperature reaches 0°C.
6) After chilling, tuna intended for the fresh market must be placed into the fish hole. The belly of the tuna must be packed completely with good clean ice. The exterior skin must be completely covered with tuna paper to protect the outer surface.
7) After chilling, tuna destined for freezing must be placed in blast freezer either suspended by the head or placed flat with head first into blast air flow.
8) Every vessel is required to keep a record of each day's catch. The information that is required is as follows:

    A) The areas that were fished during the trip.
    B) The number of fishing hooks used or lines used each day.
    C) The number of live tuna landed each day.
    D) The number of dead tuna landed each day.
    E) The number of discard tuna for each day.
    F) The number and kinds of other fish caught while fishing tuna, for each day.
    G) There must be a fish hole chart showing the list of each day's catch, where they are stowed in the hole so as to ensure that the oldest tuna can be kept separate from the fresh tuna.
    H) There must be a log showing the monitoring of the temperature of the tuna as it is being placed in the fish hole. Also there must be a log to show the temperatures of the frozen tuna being removed from the blast for storage in cold storage.

Any equipment that is used in the processing of tuna that is damaged or can cause any damage or contamination to the tuna, cannot be used.

All fish handling equipment such as knives, chutes, fish conveyors, fish washers, tables and utensils, shall be of smooth, non-absorbent, non-corrodible materials. If wood is to come in contact with the tuna, it must be free from cracks and crevices and constructed in such a manner that it can be properly cleaned.

The contact surface of the fish hatch must be properly constructed so as it is of proper size. The contact surface in the fish hole must be properly insulated.

Both the fish hole surface and the fish hole hatch must be properly constructed of a smooth surface, free from cracks and crevices and made of non-corrodible material.

Only clean safe salt water is to be used in the washing and cleaning of tuna. Fresh water is not to be used due to the fact that if used, it will cause bleaching of the skin.

After the removal of the gut material from the fish, it is to be discarded immediately. It is not to be left around the tuna due to the fact that it can cause contamination to the fish.

Any area aboard the fishing vessel that can come in contact with the tuna must be of a smooth surface and kept in a clean and sanitary condition.

Fishing vessels must have a proper overhead canopy in place so as to protect the tuna from direct contact with the sun.

2.3.2 Defect Deficiency

A tuna which is taken on board in whole state is considered defective if there is any trace of fuel oil or other critical contamination of the flesh odour which is indicative of decomposition or taint.

Critical contamination is the presence of any material or distinct and persistent odour or flavour of any material which has not being derived from fish and which poses a threat to human health.

Tuna which is not bled, cleaned or chilled properly can also become a defect fish.

2.3.3 Monitoring Procedures

The following procedures shall be used in determining the condition of the tuna:

- Each tuna is examined for contamination by fuel oil or other critical contamination source likely to be a threat to human health at time of taking the tuna on-board.

- In regards to dead tuna that are taken on board at time of catching, these fishes must be inspected to see that there are no contamination arising from the fish being dead. When these fish have being dressed the belly section must be inspected to ensure that the fish is still fit for human consumption.

- Dead tuna after being processed aboard the vessel must be marked and separated so as when product is landed, it can be reinspected by the receiving plant.

2.3.4 Corrective Action

When there is a problem with the tuna there should be a corrective action report filled out describing the problem and what action has been taken. An example of a Corrective Action reporting form is found in 2.3.6.

The fishing vessel will identify the position responsible for taking corrective action and the position responsible for ensuring that the corrective action was carried out. If the vessel owner wants to use its own forms it must provide an example of the forms that will be used to record the corrective action.

For each instance of non-compliance the fishing vessel must have a record of the corrective action that took place and that the records must provide the following information:

- A description of the non-compliance item
- The date the non-compliance item happened
- The date the corrective action took place
- What corrective action was taken
- The outcome
- The signature of the person responsible

2.3.5 Inspection of Tuna As it is Being Taken On board

During the catching and taking on board of tuna an inspection of the overall appearance should be done. Section 2.3.7 contains an example of an inspection of landing report and Section 2.3.8 is the information to be supplied by the fishing vessel.

2.3.6

CORRECTIVE ACTION REPORT

Date: _____ Area Affected: _____

Description of the Problem with the Tuna:

_____

_____

_____

_____

Show Action Which Has Being Taken to Correct the Problem:

_____

_____

_____

Date Problem Solved: _____

Current Status: _____

Vessel Owner: _____

Inspector: _____

This report must be filled out when there is a problem that is affecting the quality of the tuna.

This report must be kept to show whether there was a problem and what was done to correct the problem.

2.3.7

INSPECTION OF TUNA AS IT IS BEING RECEIVED ON-BOARD VESSEL

Date: _____ Name of Vessel: _____

Area Fished: _____ Type of Fishing Gear: _____

Species: _____

Outer Appearance of Fish: _____

Any Odours: _____

Fish Live: _____

Fish Dead: _____

Condition of Belly of Fish: _____

Temperature of the Fish: _____

Any Noticeable Contamination: _____

Fish Pass: _____

Fish Fail: _____

Any Comments to the Condition Which is Not Listed on this Sheet:

_____

_____

_____

_____

_____

Inspected By: _____

2.3.8

INFORMATION TO BE SUPPLIED BY FISHING VESSEL

Type of Fishing Operation: _____

Requirements

We will meet good manufacturing practices for the on board handling of tuna as outlined in this manual. _____

Or

We will provide our own company requirements that will meet or exceed those supplied in the GMP. _____

Defect Definitions and Defect Tolerances

We will utilise the defect definitions and defect tolerances as described by fisheries for the handling of whole dressed tuna which is being presented in this document.

_____

Or

We will provide our own company defect definitions and tolerances that meet or exceed those supplied by the GMP. _____

Monitoring Procedures

We will implement the level of monitoring as specified in this document. _____

Or

We will provide our own company monitoring procedures that meet or exceed those supplied by in the GMP. _____

Forms for data collection and inspection reporting

We will utilize corrective action sheet and the raw inspection form supplied in this manual. _____

Or

We will provide our own company reports for corrective action and the raw inspection reports that meet or exceed those supplied by in this document. _____

If the fishing vessel is going to supply its own report forms for any of the above mentioned reporting forms it must present a copy of the forms that it will be using to the appropriate authorities.

Name of vessel owner/operator: _____

Date: _____

2.4 ICE

2.4.1 Requirements

Only ice that is made from clean safe water can be used for the chilling and icing of tuna aboard a fishing vessel.

Only properly crushed ice should be used when icing the tuna. Wherever possible block ice should be crushed in a proper crushing machine before placing aboard the vessel.

2.4.2 Ingredients

The only additive permitted in water for making ice is chlorine. The amount of chlorine when tested in water should not exceed 10 parts per million (ppm).

2.4.3 Defect Definitions

Ice which is not clean or safe is not permitted to be used in the chilling of or the icing of tuna.

Ice which has come in contact with contamination can not be used in the production of tuna.

Ice which has a sharp edges or large pieces of ice should not be used in the icing of tuna.

It is not permitted to reuse ice that has already being used for previous production. Ice which has being transported to the fishing vessel in an unsanitary truck or in unclean containers is not acceptable.

2.4.4 Monitoring

The fishing vessel will describe how it ensures that the ice which they use will be only ice that is approved and uncontaminated. The fishing vessel will describe how it ensures that the ice is stored in a proper protected insulated fish hole free from any safety risks whereby the ice can cause damage to the tuna.

2.5 CLEANING AGENTS, SANITISERS, LUBRICANTS

2.5.1 Requirements

Only cleaning agents, sanitisers, lubricants which have been approved for food grade can be used in the cleaning of the equipment, fish hole and any area that the tuna will come in contact, during the operation of fishing.

It is the responsibility of the owner/operator of the fishing vessel to ensure that the compounds meet the requirements.

2.5.2 Specifications

The fishing vessel must maintain a list of all cleaning agents, sanitisers,

lubricants, and any other chemicals that are to be used in the on-board operation. The list must include the specifications for each chemical used and what and where they are used.

2.5.3 Monitoring Procedures

The fishing vessel owner/operator is required to provide the proper procedures for ensuring that only approved chemicals are used in the cleaning of the vessel.

2.5.4 Forms for Data Collection & Reporting

The fishing vessel must complete forms showing that incoming chemicals are approved. Examples of the forms to be used are found in Sections 2.5.6 and 2.5.7.

2.5.5 Guidelines for Corrective Action

The fishing vessel must show what action is taken to remove unapproved chemicals from the vessel.

2.5.6

INCOMING CHEMICAL INSPECTION REPORT

Date: _____

Type of Chemical: _____ Supplier: _____

What it is to Be Used For: _____

Brand Name: _____

Manufacturer: _____

	Yes	No
Has the chemical being approved?	_____	_____
Are the containers safe?	_____	_____
Are the chemicals protected from contamination?	_____	_____
Do the chemicals meet the company specifications and requirements?	_____	_____

If there is a problem, then list the action that will be taken to eliminate any problems:

_____

_____

_____

This inspection report is to be completed for each chemical which is to be used in the onboard handling for tuna.
This form when completed is to be signed and kept on file for future reference.

Inspected by:_____

2.5.7

INFORMATION TO BE SUPPLIED BY THE FISHING VESSEL OWNER/OPERATOR

Type of Fishing Vessel: _____

The Owner/Operator of the fishing vessel agrees that the requirements as specified in this document regarding the use of cleaning agents, sanitisers & lubricants will be met.

Items Used:

The fishing vessel will keep a list of all chemicals used on-board the vessel for the maintenance of equipment and fish facilities. This list will show all the information which has being identified in this report and will have available for inspection on request.

Monitoring Procedures:

The fishing vessel will show what procedures it will implement to ensure that only approved chemicals are used in the process for the on-board handling equipment which is used for the tuna operation.

_____
_____
_____
_____
_____
_____

Name of Company Official: _____

Date : _____

2.6 VESSEL DESIGN, PRODUCTION FACILITIES

2.6.1 Requirements for Vessel Design

The requirements that a fishing vessel must meet to be able to fish for fresh/frozen tuna.

The deck area used for the handling of tuna must be constructed of a smooth surface, free from cracks and crevices and made of non-corrodible material. The deck area must not have any areas that can cause contamination to the tuna.

Materials which are used when tuna is being placed on the deck area must be kept clean and safe. Any materials which can cause damage or contamination to the tuna are not permitted to be used.

The fish hole hatch must be constructed in the proper manner. The hatch should have a proper opening which is properly constructed of a smooth surface free from cracks and crevices and non-corrodible material. A hatch which is made of wood must be protected with a smooth covering so as to protect the skin and flesh of the tuna when either being placed in the hole, or being removed from the hole.

The fish hole itself, must be constructed of a smooth surface, free from cracks and crevices, and made of non-corrodible material. The fish hole must also be well insulated to protect the tuna from the heat. If the insulation is to come in direct contact with the fish, then it is to be made of only proper approved insulation. This insulation cannot have any chemicals which can cause contamination or harm to human beings.

Fishing vessels which have a REFRIGERATED SEA WATER SYSTEM on board: are required to have fish holes that are completely watertight. They are required to have the proper system to control the temperature of the water and the fish. The temperature of the fish must be maintained at 0°C at all times.

Fishing vessel which have a FREEZING ON-BOARD SYSTEM: are required to have a proper freezing system aboard to ensure that the core temperature of the tuna is lowered to a temperature of -60°C within 8 hours or less, and that the cold storage room air temperature can be maintained at -50°C or below.

Fishing vessels which store the tuna in ice in the fish hole are required to have proper insulation and a pumping system in a place, so as to ensure that the fish hole is being properly pumped at all times.

The fish hole must be constructed in a manner whereby there is no risk that any BILGE WATER can come into the fish hole. If this were to happen, it can cause the tuna to become contaminated.

There must be in place a canopy to protect the tuna from direct contact with the sun.

2.6.2 Production Facilities

All vessels for fishing of tuna are required to have on board a properly insulated container for the cooling process. This container is to be constructed of a smooth surface, free from cracks and crevices and made of non-corrodible materials.

All fish handling equipment such as chutes, fish conveyors, fish washers, tables and utensils for processing, shall be of smooth, non-absorbent, non-corrodible materials. No equipment can be constructed whereby it can cause contamination to the tuna.

2.6.3 Corrective Action

Any vessel must identify what action is to be taken if there is a problem whereby it can cause the following results:

A) If there is a deficiency which can result in the production being not of acceptable quality.
B) If there is a threat to the health and safety of the consumer.
C) If there is a problem which prevents proper sanitation aboard the vessel.
D) If the problem can cause the tuna to become tainted, decomposed or unwholesome.
E) If the problem inhibits the general sanitation of the vessel.

The fishing vessel's owners/operators must identify if any of the above-mentioned problems exist, and identify who will take the corrective action. What system is to be used, and who is responsible for taking this action. The vessel must ensure that if there is a problem, which can cause any deficiencies of a critical nature to the tuna must be willing to provide the proper action to protect the tuna.

2.6.4 Guidelines for Corrective Action

The fishing vessel's owner/operator must identify the person responsible for taking the corrective action and ensure that the corrective action has been carried out.

The vessel must show a record that has been taken showing what has happened. The record should show for each instance of non-compliance, the following information is recorded:

- A description of the non-compliance item.
- The date the non-compliance item occurred.
- The date the corrective action was taken.
- What action was taken and what was the outcome.
- The signature of the person responsible.

2.7 OPERATION & SANITATION

2.7.1 Requirements

The owner of the fishing vessel for the catching, processing and holding of tuna is required to ensure that there is no contamination present on board the

vessel.

The owner must ensure that the fishing vessel meets the regulations that are required by the authorities having jurisdiction.

The fishing vessel's owners/operators must provide assurance that the fishermen who come in contact with the tuna do not directly or indirectly contaminate the fish. The vessel owners must have a training program in place for the fishermen to show what can and will happen when they do not follow the requirements for the proper handling of the tuna.

The fishermen should report any medical conditions which may present a health and safety risk to the production of the tuna. This would also include being a carrier of a disease which can likely be transmitted through food or while having infected wounds.

2.7.2 Inspection of Vessel

The owner is required before each trip commences to ensure that the proper cleaning and sanitation is completely aboard his vessel. They are required to complete a form showing at the commencing of each trip that their vessel meets the requirements. They must show the critical control points in the operations and what action will be taken for any deficiencies that can occur.

2.7.3 Forms for Inspection

It is recommended that the owners either accept the forms listed in this manual or show to the authorities what type of forms they intend to use. A copy of the forms should be given to the authorities.

The Action Reports 2.7.5 A, vessel fault inspection report is used to record the information and results of the sanitation inspection and to indicate where there is corrective action needed; and the Inspection Report 2.7.5B is used to cover the overall operation for the processing equipment for tuna and also the storage areas.

2.7.4 Guidelines for Corrective Action

The vessel must identify what action is to be implemented for, deficiencies of a critical nature, serious nature, major & minor nature. If deficiencies are of a critical nature, the vessel will not be able to operate till the critical deficiencies are corrected.

2.7.5 Action Reports

A : VESSEL FAULT INSPECTION REPORT

Vessel Name: _____ Date of Inspection: _____

LIST DEFICIENCY	CATEGORY OF DEFICIENCY				ACTION BY
	CRI	SER	MAJ	MIN	

CRI: means that it is critical and action must be taken immediately.
SER: means that it is serious and action must be taken as soon as possible.
MAJ: means that it is major nature and can be corrected within the day.
MIN: means that it is minor nature and can be corrected within several days.

NOTE:
No vessel should operate where there are one or more critical deficiencies or five or more serious deficiencies which have been identified.

DEFICIENCY: means any imperfections or inadequacy in physical facilities, equipment which can cause damage to the tuna.

B: DETAILED VESSEL INSPECTION REPORT

Vessel Name: _____ Date: _____

Type of Fishing Gear: _____

Fresh Tuna Operation: _____

Frozen Tuna Operation: _____

ITEM	OPERATION REQUIREMENTS DEFICIENCY SCORE				DATE FOR CORRECTIONS
	CRI	SER	MAJ	MIN	
Employee Health A. No known carrier					
B. No communicable of sores					
C. No open wounds or sores					
Hand Wash Facilities					
A. Proper washing of hands					
B. Proper disinfection gloves					
Washing of Equipment A. Properly washed and cleaned before and after using B. Properly sanitized					
Ice A. Made of water from approved source free from foreign matter, no contamination B. Properly stored in clean fish hole					

ITEM	OPERATION REQUIREMENTS DEFICIENCY SCORE				DATE FOR CORRECTION
	CRI	SER	MAJ	MIN	
Offal Removal A. Removed immediately					
B. Equipment kept clean					
C. Proper method of disposal					
Utensil Cleaning A. Cleaning and sanitized during processing					
B. Cleaned and disinfected after work					
C. Dried and stored in sanitary manner					
General cleaning and maintenance A. Facilities and equipment in good repair					
B. Facilities and equipped kept clean					
Fish Hole Storage A. Properly cleaned and sanitized					
B. Proper temperature of ice					
C. Proper protection of rise in room temperature					
Cold Storage Area Proper temperature device to record the temperature on a continuous basis					
Frozen Tuna Properly protected from rise in temperature					

If during inspection it is found that there are no defects for an item, then you are to record that it is OK in the are marked Date for Corrections.

2.8 PROCESS CONTROL

2.8.1 Requirements

Tuna is to be properly washed during and after being processed. It is very important that all measures are taken to remove all blood, gut remnants and any foreign material from the tuna.

During washing only fresh safe sea water is to be used in the washing of the tuna. Tuna is to be handled as quickly and as carefully as possible after being taken on-board the vessel.

Tuna is to be properly cooled in slush ice, which is made up of two parts ice and one part water. After properly cooling of tuna, the fish are to be placed properly in the fish hole in ice, or in the blast freezer for freezing.

During the process there must be regular temperature checks done to ensure that the core temperature of the fresh tuna is maintained at 0°C.

In the process of freezing tuna, the core temperature is to be lowered to -60°C within 8 hours or less.

2.8.2 Defects & Deficiencies

The improper or inadequate washing of tuna will be considered a process control deficiency.

The improper cooling of tuna is considered a process control deficiency. The improper icing of the tuna is considered a process control deficiency and the improper freezing of the tuna is also considered a process deficiency.

2.8.3 Inspection Requirements

On a regular or continuous basis, the vessel's designated inspector is required to inspect the tuna during the handling operation to ensure that the washing, cooling, icing and/or freezing is carried out in a proper and safe manner.

2.8.4 Forms for Collection Data

The vessel owner is required to provide examples of the inspection forms they intend to use in recording activities directed towards process control.

2.8.5 Corrective Action

The vessel must identify what action is to be taken when they identified defects, deviations, or deficiencies in the process control.

2.9 FRESH STORAGE FACILITIES

2.9.1 Requirements

The following are the requirements for the proper storing of fresh tuna in fish

storage area:

A) The fish hole must be free from any contamination.
B) The fish hole must be properly insulated.
C) The ice for icing the tuna must be clean and safe.
D) The ice must contain a good low cooling temperature.
E) Only fish and fish products are to be stored in the fish hole.
F) In regard to tuna stored in Refrigerated Sea Water only clean safe sea water with the proper temperature and controls to be used.
G) The core temperature of the tuna must be maintained at 0°C.

2.9.2 Inspection Requirements

The fishing vessel must keep a record of the temperatures of the tuna as they are being placed either in the ice or the refrigerated sea water after cooling.

The fishing vessel must also ensure that the tuna in ice is always covered at all times to ensure that the temperature does not rise.

2.9.3 Corrective Action

The fishing vessel must have in place a corrective action plan so as to prevent the temperature from rising in tuna. If this occurs, it must show what action will be taken and by whom.

A corrective action report should contain the following information:

A) A description of the problem with the temperature.
B) The date that the problem was first noticed.
C) The date the corrective action was taken and what was done to correct the problem.
D) The signature of the person responsible.

2.9.4

FRESH TUNA TEMPERATURE RECOVERING LOG

DATE	TIME	STORED IN ICE	TEMPERATURE

Vessel Name : _____

Start Date of Trip : _____

Finish Date of Trip : _____

Company Official : _____

2.10 FROZEN STORAGE FACILITIES

2.10.1 Requirements

Blast freezers for the on-board freezing of tuna are required to have the proper equipment to freeze the core temperature of the tuna to -60°C within 8 hours or less.

Rooms used for the storage of the frozen tuna are required to maintain an air temperature of -50°C or below.

Rooms for the freezing & storage of the frozen tuna are required to have a proper temperature recorder showing the movement in the temperature.

When tuna is being removed from either the blast freezer or the cold storage the frozen fish shall be protected to minimise the rise in the temperature.

2.10.2 Inspection

The vessel is required to keep a log which shows the temperatures of the frozen tuna.

The temperature recorder must be checked on a continuous basis to ensure that the proper temperatures are being maintained.

2.10.3 Corrective Action

The vessel owner must show what action will be taken when there is a rise in the temperature of the cold storage.

The vessel owner must also show what action will be taken when there is too much delay in freezing the tuna to its proper core.

The fishing vessel will be required to identify the person responsible for taking corrective action and must show what procedure was used. The information should show the following items:

A) A description of the problem with the temperature.
B) The date the problem happened on.
C) The date the corrective action was taken and what was done to solve the problem.
D) The signature of the person responsible.

FROZEN TUNA
COLD STORAGE LOG

DATE	TIME	BLAST FREEZER		COLD STORAGE	TEMPERATURE
		No of Fish	Temp		

Vessel Name : _____

Start Date of Trip: _____

Finish Date of Trip : _____

Company Official : _____

2.11 FINAL PRODUCT

2.11.1 Requirements

No vessel shall attempt to unload any tuna that is tainted, decomposed, or unwholesome or otherwise fails to meet the requirements laid down by the authorities having jurisdiction.

No vessel shall attempt to unload any frozen tuna that was before freezing tainted, decomposed, unwholesome. Frozen tuna whose core temperature is not at -60°C, should be specially marked.

Fresh tuna being discharged from the fishing hole must show the age of the tuna so as to distinguished what market the product is destined for.

Fresh tuna with a core temperature above 0°C must remain in ice as to such time as the temperature of 0°C is attained.

2.11.2 Defect Tolerance

Same as in Section 2.11.1.

2.11.3 Sampling Plan

The sampling will be done by the receiving processing plant.

2.11.4 Corrective Action

The fishing vessel must show what action is to be taken to remove any unacceptable tuna, who will take the action, what system will be used to record the action and what is being done with the unacceptable tuna. The information on the form which is required to be completed by the vessel owner should have the following items listed:

A) A description showing why the tuna was rejected.
B) The number of fish which were unacceptable.
C) The date of unloading.
D) What action was taken to remove the unacceptable product.
E) Where did the unacceptable product be disposed.

2.12 RECALL PROCEDURES

2.12.1 Requirements

All tuna whether they be fresh/frozen being removed from the fishing vessel must have the following information to accompany the fish to the processing plant.

- The date the fish were landed
- The name of the vessel
- The product form the whether fresh/frozen
- The number of fish

- The name of the fish
- The age of the fish whether it is old or new
- The name of the carrier if it is to be transported via truck to the processing plant
- The name of the buyer
- The address of the buyer

An example of this form appears in Section 2.12.4

2.12.2 Monitoring Procedures

The fishing vessel must have in place a procedure so as to identify the tuna which it is shipping to their first destination. It must show that the fish came from their vessel.

2.12.3 Guidelines for Corrective Action

The fishing vessel must show what action it will take if there is required a recall of their product. They must have in writing a system whereby if there is action needed after the tuna has been removed from the vessel and shipped they can properly execute this action. They must have on the form the following information:

- Description of the problem
- The number of fish
- The date noticed
- The date it is corrected
- The outcome when the corrective action was taken and signature of the person responsible for taking the action

SHIPPING RECORD REPORT FOR FRESH/FROZEN TUNA FROM FISHING VESSELS

Date: _____

Name of Vessel: _____

Type of Fishing Gear Used: _____

Product Description: _____

Fresh: _____

Frozen: _____

Name of Fish : _____

Total Number of Fish : _____

The Age of the Old Fish: _____

The Number of the Old Fish: _____

The Name of the Carrier: _____

The Name of the Buyer: _____

Address of the Buyer: _____

Vessel Officials Signature: _____

2.13 EMPLOYEE QUALIFICATIONS ON FISHING VESSELS

2.13.1 Requirements

There should be in place a program where by the fishery people on-board each vessel should be trained in the proper handling of fresh/frozen tuna.

In the on-board handling of tuna it is very important that both the owner/operator plus the fishermen understand the proper methods which are required to be used.

They must understand that what ever they do in the catching, handling, processing, icing and/or freezing of the tuna will determine what the quality is and this inturn will determine the price.

The GOOD MANUFACTURING PRACTICES guidelines shows the proper procedures for the on-board handling of tuna.

Annex 3 shows the step-by-step methods with diagrams as to the proper handling of tuna.

Definitions

Control or Inspection Point:	A point in time at which there is an opportunity to evaluate compliance with specific requirements and, if necessary, to correct defects, deviations or deficiencies that may be found relating to quality, and/or fair trade practices, and/or regulations in force.
Critical Control Point:	A point at which if preventive measures are not taken, will expose a customer to unacceptable risks related to safety or unwholesomeness.
Decomposed:	With respect to tuna, means that the tuna has an offensive or objectionable odour, colour, flavour, texture or substance associated with spoilage.
Defect :	An imperfection or inadequacy in tuna, or products.
Deficiency :	An imperfection or inadequacy in facilities, equipment or environment.
Deviation :	An imperfection or inadequacy in a process, or procedure.
Hazard :	Anything in the handling of tuna that might contaminate food and make it unsafe for consumers, or that mislead consumers, making one liable to economic fraud.
Poisonous or Harmful Substances:	Includes bacteria of public health significance, natural toxins, all regulated pesticides, non-permitted additives and other contaminants.
Tainted :	Tuna that is rancid or has an abnormal odour or flavour.
Unwholesome :	Tuna which, either in the meat or on the surface, contains bacteria of public health significance, or toxins harmful or offensive to man.

POTENTIAL CRITICAL CONTROL POINTS FOR THE ON-BOARD HANDLING OF FRESH/FROZEN TUNA

NO	ITEM	HAZARD	POTENTIAL CRITICAL CONTROL POINTS
1	INPUT MATERIALS		
	Fish (Tuna)	Taint Decomposition, unwholesomeness Dead, non-compliance with regulations	Prior to processing
	Ice	Not of food grade Unsuitable, unclean Non-compliance with regulations	Prior to use Application area
	Cleaning Agents Sanitisers, Lubricants	Not approved for use in food operations or on food contact surfaces	Prior to use
		Misapplication	Application area
2	Production Conditions Vessel Design Production Facilities	Non-compliance with regulations for the proper handling	Prior to fishing
	Operation & Sanitation	Non-compliance with regulations	Prior to, during processing
	Process Control	Non-compliance with regulations	During processing
	Fresh & Frozen Storage Facilities	Non-compliance with regulations	During time tuna is either in ice or in cold storage
3	PRODUCTS		
	Final Product Required Characteristics	Taint Decomposition, unwholesomeness Defects &/or non-compliance	During processing after last process prior to unloading & after freezing
	Recall Procedures	Unable to trace product to the customer to whom tuna was sold	During unloading & shipping

4	PERSONNEL		
	Health & Hygiene	Fishermen suffering from or carrying a communicable disease Fishermen with an infected or open cut	Prior to fishing
	Quality Management	Not properly trained in the proper procedures for the handling of tuna	Prior to processing