

ALASKA LEGISLATIVE COMMITTEES HOUSE 1937

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6. Cans are mechanically filled with 100% visual inspection by processing personnel for proper fill. Improperly filled cans are removed from the line to the patching table where the fill problem is corrected and the cans returned to the line.

7. The code-end is seamed to the can. Repeated visual examinations of the code end double seams and side seams are performed daily during the first one-half hour after start-up of salmon packing operations, following a prolonged shutdown, following a jam-up in the seaming head, and after each adjustment of the top seaming equipment. Hereafter, visual examinations are made at intervals not to exceed 30 minutes. Records are prepared covering the results of these examinations, including notations for all noted irregularities and the corrective actions taken.

8. The filled cans are conveyed to a packing table where they are placed on dividers and packed in retort baskets.

9. All retort baskets of unretorted product, or some of the containers on top of each basket are plainly and conspicuously marked with a heat sensitive indicator to indicate whether or not such unit has been retorted.

10. Canned product is retorted in accordance with 21 C.F.R. 11.340 and NFPA Bulletin 26L and process records are maintained in accordance with 21 C.F.R. 113.100.

11. Upon completion of thermal process, baskets are removed from the retort transferred to the cooling area adjacent to the palletizing area and allowed to air cool to a maximum internal temperature of 105° F.

12. Cooled product is mechanically removed from the retort baskets, palletized and wrapped in a plastic stretch wrap for stability.

13. Each pallet is labeled with the name of the product, container size, quantity, lot identification code, packer's name and address, and Alaska Department of Environmental Conservation permit number.

14. Labeled pallets are transferred to the temporary warehousing area pending shipment.

EXAMPLE

Pacific Salmon, All Species/Canning, Reformed 301 x 408 and 307 x 200.25 Cans/Packaging-Processing Operation Control

Product/Material	Process/Procedure	Quality Assurance Function		
Inspection Point	Attribute	Specification	Sample Plan or Control	Action Taken
#1. Flat bodies.	Condition of flats. Damage, side seams, overlap.	No damage acceptable Side seam closure complete. No excess solder or thickness to interfere with seaming. No overlap, edges meet evenly at side seam. Cans shall be clean, free from rust, dirt and other adulterants.	Inspect 25 bodies randomly selected from each of 5 cases randomly selected from each manufacturer's lot of can bodies. Note: Every case inspected by production personnel.	No defects noted, no action taken. Any defects noted, select duplicate sample and examine again. Determine disposition, rework (100% examination and sort) or reject.
#2. Can ends.	Condition of ends Damage, sealant, and cleanliness.	No damage acceptable. Even application of sealant around circumference of seam Ends shall be clean, free of rust, dirt, and other adulterants.	Inspect 25 ends randomly selected from each of 5 cases randomly selected from each manufacturer's lot of can ends. Note: Every case inspected by production personnel.	No defects noted, no action taken. Any defects noted, select duplicate sample and examine again. Determine disposition, rework (100% examination and sort) or reject.
NOTE:	Continue with specific information for each inspection point, attribute, specification, sample plan or control, and action taken.			

VII. Finished Product Evaluation: This section will include the following;

A. A description of the evaluation process for each product to include:

1. Attributes inspected for
2. Specifications
3. Sample plan or control
4. Action taken on non-conformance

(Example: See Figure #12).

B. Recordkeeping and Reporting will contain the following basic information: product; date of inspection; time of inspection; code; quantity of product in lot; attributes inspected for; specification; number of samples inspected; inspection results; action taken and individuals reported to; inspector's name and signature; and reviewer's name and signature.

EXAMPLE

Fancy King Crab Legs and Claws
Product/Material

Frozen
Process/Procedure

Finished Product Evaluation
Quality Assurance Function

Inspection Point	Attribute	Specification	Sample Plan or Control	Action Taken
Finished product.	Ratio of legs to claws, Uniformity of walking legs, Deformities, percent meat, appearance, color, flavor, odor texture, drained weight and microbiology.	See specifications section of Alaska King Crab Marketing and Quality Control Board specifications for frozen Alaska King Crab.	6 cases of product shall be selected at random. All 6 cases of product shall be subjected to non-destructive inspections for all attributes.	<p>No deficiencies noted, no action.</p> <p>Any non-conformance noted, select and inspect duplicate sample. Determine conformance or non-conformance with specifications.</p> <p>in case of non-conformance, determine disposition (re-work, reject).</p> <p>Identify product and status.</p>

VIII. Incoming Materials Control: Incoming materials will be inspected upon receipt for condition and suitability for their intended use.

A. Lists of all materials identified according to the following categories.

1. Raw materials, ingredients, processing and packaging materials.
2. Critical raw materials, ingredients, processing and packaging materials. (Materials shall be considered "critical" if they might represent a potential health hazard, a source of contamination, or otherwise adversely affect the wholesomeness of quality of the product.)
3. Regulated food additives.
4. Cleaning compounds, sanitizers, lubricants, water treatment compounds, pesticides and other chemicals.

B. Inspection for attributes shall include the following information.

1. The name of the item or item group.
2. A definition of each attribute for which examination

evaluation and/or testing is conducted.

3. The specification for each attribute.
4. A description of the control; i.e., the sampling plan and inspection procedure.
5. The action to be taken when non-compliance is noted.
(Example: See Figures #13 and #14).

C. Recordkeeping and reporting will include the following basic information: item; date of inspection; time of inspection; invoice number; code (if applicable); attributes inspected for; specifications, number of samples inspected; inspection results; action taken and individuals reported to; inspector's name and signature; and reviewer's name and signature.

EXAMPLE

Chemical Compounds
Product/Material

Receipt of Materials
Process/Procedure

In-Coming Materials Control
Quality Assurance Function

Inspection Point	Attribute	Specification	Sample Plan or Control	Action Taken
Warehouse receiving.	<p>Damage/acceptable condition.</p> <p>Product as ordered or acceptable substitute for intended purpose.</p> <p>Properly labeled and labels legible.</p>	<p>No damage acceptable.</p> <p>Listed for intended use in USDA listing of proprietary substances and non-food compounds; Misc. Pub. #1419.</p> <p>All containers labeled and labels intact and legible.</p>	<p>100% inspection during during off-loading if possible.</p> <p>Verify listing.</p> <p>Examine 5 containers and any containers which appear suspect.</p>	<p>No damage, accept.</p> <p>Any damage, reject damaged containers. Reject if not listed for intended use.</p> <p>All labels intact and legible, accept. Any labels not intact to identify product and use instructions, reject those containers.</p>

EXAMPLE

Fresh Salmon, Round
Product/Material

Receipt of Materials
Process/Procedure

In-Coming Materials Control
Quality Assurance Function

Inspection Point	Attribute	Specification	Sample Plan or Control	Action Taken
Dock receiving area.	Condition. Species. Temperature. Condition of vessel/fish hold.	<p>Fresh, clean, no signs of decomposition or adulteration.</p> <p>Sort by species.</p> <p>40° F maximum.</p> <p>Clean, free from potential contaminants.</p>	<p>Examine fish randomly through out unloading procedure.</p> <p>Verify proper sorting by species.</p> <p>Check internal temperature by inserting metal stem thermometer in anal vent of fish at beginning, midpoint and end of unloading.</p> <p>Examine vessel fish hold and deck at time of unloading.</p>	<p>No off condition, accept. Any off condition, sort load and reject off condition fish or reject load.</p> <p>Improper sorting, resort and improve sort procedure.</p> <p>Temperature 40° F or lower, accept. Temperatures in excess of 40° f, ice or refrigerate at 35° F or below and process immediately or reject.</p> <p>Vessel hold clean, no potentials for contamination, no action.</p> <p>Vessel hold not clean and/or other potentials for contamination, examine fish thoroughly, wash all fish immediately if contamination can be corrected, advise fisherman regarding problem or reject fish.</p>

IX. Warehousing Requirements and Controls: this section will include the following information:

A. A layout of all areas used for warehousing (major storage) with designation to identify each area or location; i.e., area A, B, C, etc. This should be to scale and must express the actual area utilized.

B. The quantities of materials to be warehoused by general category. This is to be expressed in normal quantitative terms relative to the material; i.e., pounds, cases, gallons, count, etc.

C. Identification of the storage areas to be used for storage of each general category of material to demonstrate adequate storage space and appropriate segregation of product.

D. Temperature specifications for controlled environment storage areas; i.e., chill rooms, cold rooms, refrigerated brine storage, etc.

E. An explanation of rotation procedures for materials subject to rapid deterioration.

F. Procedures for handling and determining disposition of damaged materials.

G. Recordkeeping and reporting will include the following:

1. Monitoring and logging temperatures of refrigerated storage facilities a minimum of once every 12 hours.

2. Reporting of damaged or deteriorated containers or materials and maintenance of a record of such reporting to include item, date, whom reported to, and action taken.

X. Control and Handling of Non-Conforming or Unacceptable Materials:

Provide the following information:

A. Specific procedures to identify non-conforming or unacceptable materials to prevent accidental use or re-introduction to the production process such as the use and placement of highly visible labels or tags.

B. Procedures for segregation of non-conforming or unacceptable materials.

C. Procedures for disposal or disposition of non-conforming or unacceptable materials.

D. Recordkeeping and reporting will include: name of the item and quantity; date and method of identification; individual reported to; and date and method of disposition.

XI. Sanitation Monitoring: This section will describe the following;

A. Cleaning methods and schedules by area, operation and/or specific equipment.

- B. Facilities and equipment condition/ *MAINTENANCE*
- C. Grounds maintenance requirements for premises surrounding processing facilities.
- D. Pest control and pesticides use by area.
- E. Instructions for personnel hygienic practices.

Specific procedural instructions for A and D above must include:

1. Procedures for product, ingredient and materials protection during periods of sanitation activity.
2. Specific methods for each cleaning, sanitizing or pest control operation.
3. The cleaning compounds, sanitizers, chemicals and pesticides to be used.
4. The frequency of each operation i.e., schedules for each activity.
5. Procedures for storage and handling of clean equipment and utensils to prevent re-contamination.

6. Procedures for the storage and handling of cleaning compounds, chemicals, pesticides and cleaning equipment to prevent contamination of product, ingredients, materials or equipment and utensil surfaces.

Scheduled inspections shall be conducted to insure compliance with the plan of operation, good sanitation practices and state regulations (AAC 18.34). Inspections shall be accomplished in accordance with the following minimum frequencies:

A general sanitation inspection for all aspects shall be accomplished at least once per operating day.

The processing and packaging operations shall be inspected at least twice per operating shift, once prior to beginning the shift and once during the shift (prior to resuming operation after the mid-shift break is recommended).

Sanitation inspection results shall be recorded in accordance with the format found in Figure #15.

SANITATION INSPECTION

Date _____

Time _____

<u>ITEM</u>	<u>DESCRIPTION</u>
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PRODUCT, RAW MATERIALS, INGREDIENTS AND FOOD ADDITIVES

- (01) Approved source, materials and condition, no spoilage.
- (02) Original container, properly labeled.
- (03) Potentially hazardous foods maintained at acceptable temperatures during storage, processing and transportation.
- (04) Adequate facilities to maintain product and material temperatures.
- (05) Thermometers provided and properly located.
- (06) Protection of product, ice and materials during storage, processing and transportation.
- (07) Product, materials and ice handled to prevent contamination.

EQUIPMENT AND UTENSILS

- (08) Food contact surfaces designed, constructed, maintained, installed and located to facilitate cleaning and prevent contamination.

ITEM	DESCRIPTION
(09)	Non-food contact surfaces designed, constructed, maintained, installed and located to facilitate cleaning and prevent contamination.
(10)	Adequate utensil and equipment washing facilities provided, maintained, located and operated properly.
(11)	Equipment and utensils sanitized after cleaning and prior to use.
(12)	Sanitizing solution acceptable, proper concentration, temperature and exposure time.
(13)	Food contact surfaces clean, free of detergents and abrasives.
(14)	Non-food contact surfaces clean.
(15)	Storage and handling of clean equipment and utensils to prevent contamination.
(16)	Wiping cloths, clean, use restricted.
(17)	Single service articles, packaging materials stored, dispensed and used properly to prevent contamination.
(18)	No unacceptable re-use of single service or packaging materials.

WATER

- | | |
|------|--|
| (19) | Source approved and safe. |
| (20) | Treatment as approved and monitoring records maintained. |

ITEM	DESCRIPTION
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- (21) Samples submitted as required.
- (22) Hot and cold water where required.
- (23) Adequate pressure.
- (24) Adequate quantity.

WASTE DISPOSAL

- (25) Sewage disposal approved and functioning properly.
- (26) Processing waste disposal approved and functioning properly.
- (27) Monitoring records maintained.

GARBAGE AND REFUSE

- (28) Adequate number of containers provided where necessary, disposal frequency, clean, insect and rodent proof and covered.
- (29) Outside storage areas insect, bird and animal proof, clean, properly located, incineration approved.

PLUMBING

- (30) Properly installed and maintained.
- (31) No cross-connections, protection from back-siphonage, backflow provided where necessary.

ITEM	DESCRIPTION
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TOILET AND HANDWASH FACILITIES

- (32) Adequate number, convenient and accessible, properly ^{designed} ~~designed~~, installed and maintained.
- (33) Toilet rooms enclosed, self-closing doors, not opening to product areas, clean, hand cleaner, sanitary towels, appropriate waste containers, hand wash signs provided.

BUILDING CONSTRUCTION

- (34) Floors properly constructed, drained, clean and good repair.
- (35) Walls, ~~and~~ ceilings, and attached equipment, posts, partitions, etc., properly constructed, clean, good repair.

LIGHTING/VENTILATION

- (36) Lighting provided as required, fixtures shielded.
- (37) Ventilation provided to eliminate vapors and fumes and prevent condensation.

DRESSING ROOMS

- (38) Rooms or lockers provided for employees, properly located, clean.

ITEM	DESCRIPTION
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PERSONNEL

- (39) Personnel with infections restricted.
- (40) Hand washing/good hygienic practices.
- (41) Clean clothes, aprons, gloves, hair restraints.

PEST CONTROL

- (42) No insects, rodents, birds or other animals present/outer openings protected to prevent entrance.

OTHER OPERATIONS

- (43) Chemical compounds, cleaning materials, pesticides and other toxic items properly stored, labeled and used.
- (44) Maintenance operations carried out in manner to preclude contamination of product, materials and equipment.
- (45) Premises maintained free of litter, unnecessary articles; cleaning and maintenance equipment properly stored.
- (46) Complete separation of living/sleeping quarters, laundry and other domestic operations from processing, exposed product, packaging, and storage areas.
- (47) Clean and soiled linens, aprons, gloves, etc., properly stored and handled.

SEAFOOD PROCESSING OPERATION

SANITATION INSPECTION

ITEM	DESCRIPTION OF DEFICIENCY	ACTION TAKEN
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Inspector's Signature _____

Reviewer's Signature _____ Date _____

XI Calibration of Equipment and Instruments: This section will include the following information;

- A. A list of all equipment and/or instruments requiring calibration.
- B. The frequency of calibration for each piece of equipment or instrument.
- C. Explanation of the method of calibration for each type of equipment or instrument.
- D. Procedures and frequency for the verification of the control used for verification.
- E. Recordkeeping and reporting to include: the item calibrated; date of calibration; deviation from control; deviation after calibration; signature of calibrator; and signature of reviewer.

SPECIFICATIONS

This section is to include specifications which are utilized by the firm or operation to assure compliance with applicable state and federal laws and regulations. Specifications which are utilized by the firm to insure in-house requirements are met may be included. Evaluation of product or materials for compliance with specifications for regulatory purposes will only include those specifications or portions of specifications which relate directly to regulatory requirements.

Examples of specifications which may be included are as follows:

1. A specification for chemical compounds to insure acceptability for intended use. This could be very simply a statement that all chemical compounds must be listed as acceptable for their intended use in the List of Proprietary Compounds and Non-Food Substances Approved for Use under USDA Grading and Inspection Programs.
2. Can seam specifications.
3. Finished product specifications.
4. Raw material specifications.

5. Food additive specifications.

6. Packaging material specifications.

All specifications as they relate to the various inspection activities, products, and materials contained in the plan of operations may be included here and referenced in the information provided in other sections of the plan.

RECORDKEEPING AND REPORTING FORMS

This section is to include examples of the forms used for recordkeeping and reporting purposes. Since the general categories of information required are very similar in the majority of inspection activities, it may be possible and practical to utilize a few "general" forms for multiple purposes. This may in some cases necessitate the use of procedure specific attachments for continuous information for each procedure such as attributes and specifications.

The format for recordkeeping and reporting forms is optional as long as all of the required information is provided. Pre-printed forms, if used, should be designed for ease of use and clarity of information.

CONTINGENCY PLANS

Contingency plans for major systems critical to acceptable operation of a seafood processing operation will be included in this section. Adequate contingency plans and adherence to said plans during major system failure provides for continued operation and/or protection and preservation of product and materials while insuring that the operation is not in violation of state or federal laws and regulations.

Contingency plans must be provided for the following systems and include the stated information at a minimum:

1. Water Supplies and Treatment.

- a. Provisions for treatment of processing and drinking waters in the event of failure of treatment system in use or contamination of processing water source which was of a quality not requiring treatment prior to contamination.

- b. Immediate notification of the Division of Seafood and Animal Industries of revision to the contingency.

2. Waste Treatment and Disposal.

- a. Provisions for an alternative method of waste treatment and disposal for each waste treatment system in the event of failure.

b. Immediate notification of the Division of Seafood and Animal Industries of revision to the contingency plan.

Each contingency plan will describe the specific methods and equipment to be employed and must achieve reasonable compliance with State of Alaska regulatory requirements. Equipment and facilities required for implementation of each contingency plan must be readily available. The plan will include information describing specifically the availability of equipment and facilities necessary to the contingency plan.

In the event of failure of a system critical to acceptable operations, all processing must cease and appropriate action be taken to protect and preserve product and materials to be kept for future use, until the alternative system described in the contingency plan is in operation.

Contingency plans should be included for the following:

1. Major system failure such as sustained electrical outage, boiler and refrigeration systems failures, etc.
2. Disasters; i.e., fire.
3. Recall plan.

TECHNICAL REFERENCE APPENDIX

This section will include at the minimum, a list of technical references which are used in support of activities under the plan of operation, such as publications which describe technical procedures and methods for examination, evaluation, analysis or testing. Examples of subjects or procedures for which technical references should be included are as follows:

1. Methods for microbiological analysis for waters, products, materials, etc.
2. Procedures and methods for tests used to monitor water and waste treatment systems.
3. Procedures and methods for evaluation, examination or testing of product and material.
4. Procedures and methods for controlled processing; i.e., retort operation, smoking operations, and curing operations.
5. Procedures and methods for evaluation of packaging operations and container integrity.
6. Procedures and methods for testing and calibration of equipment and instruments.

If copies of the technical reference publications or documents are not included, the following information will be provided for each reference:

1. Name of the publication or document.
2. Name of the author.
3. Name and address of the publisher.
4. The edition (generally the most current available).

DEFINITION OF TERMS

This section of the guidelines will contain definitions of terms used in the guidelines to be developed as part of the editing and review process. It also will include a recommendation that a definition of terms section be included in each plan of operation to facilitate clear understanding of the plan.

(c) Evaluation of Facilities and Equipment

- (1) An onsite evaluation of the facilities and equipment will be conducted by a department inspector to determine compliance with Alaska Statutes and Regulations prior to formal review of the submitted quality assurance plan. A report of the inspector's findings will be submitted to the reviewing official and a copy provided to a responsible individual representing the processing operation at the time of inspection.
- (2) The onsite evaluation will be scheduled upon receipt of a written request from the operator of the seafood processing facility. Onsite evaluations will be conducted within a reasonable period of time after receipt of the written request.
- (3) Onsite evaluation of the processing facilities may be postponed at the discretion of the department. Postponement of onsite evaluation will not preclude provisional approval of the proposed quality assurance plan.

(d) Quality Assurance Plan Review and Evaluation

- (1) Upon receipt of the proposed quality assurance plan and onsite evaluation report, they will be forwarded to an evaluation team which will consist of department staff members with specific expertise in the various types of processing technologies, (i.e.: low acid canning, curing and smoking, freezing, processed prepared foods, etc.) as well as product characteristics and associated public health and product quality concerns.
- (2) The quality assurance plan and onsite evaluation will be reviewed for compliance with the guidelines and Alaska statutes and regulations. Any significant deficiencies noted will be reported to the seafood program administrators with suggestions for corrective actions to make the plan acceptable.
- (3) The department will respond within 15 days after receipt of each permit application and quality assurance plan.

(e) Permit

- (1) Upon approval of the quality assurance plan and onsite evaluation the department will issue a permit to operate in accordance with 18 AAC 34.020 which incorporates the quality assurance plan.

(2) Failure to comply with the terms of the permit may result in suspension of the permit in accordance with 18 AAC 34.020(e), (f).

(f) Inspection

Inspection may include the collection of samples for examination and/or testing to include: product, raw materials, ingredients, food additives, chemical compounds and substances, packaging materials, labels, records, and documents relating to the quality control and quality assurance process.

SUBJECT: Relationship of Current Alaska Fish Inspection Regulations and the Canned Salmon Control Plan to the Plan of Operation

The Alaska Fish Inspection Regulations (18 AAC 34.010 - 18 AAC 34.910) and the Alaska Canned Salmon Control Plan are in general quite parallel in their requirements, with each addressing some areas more specifically than the other. The design of these documents has been by necessity quite general to allow application to industry with consideration for differences in facilities, technology and processing methods.

The quality assurance "plans of operation" required under AS 03.05.025 consists of information required under existing permit application procedures, and operation specific information, which defines the actual means and methods employed to accomplish and assure compliance with the general requirements of the regulations.

There are segments of the canned salmon control plan that are directly applicable to the plan of operations with slight modifications and inclusion of referenced information such as sampling plans or schedules and forms used, etc.

Some examples of application of the Canned Salmon Control Plan to the Plan of Operation follow:

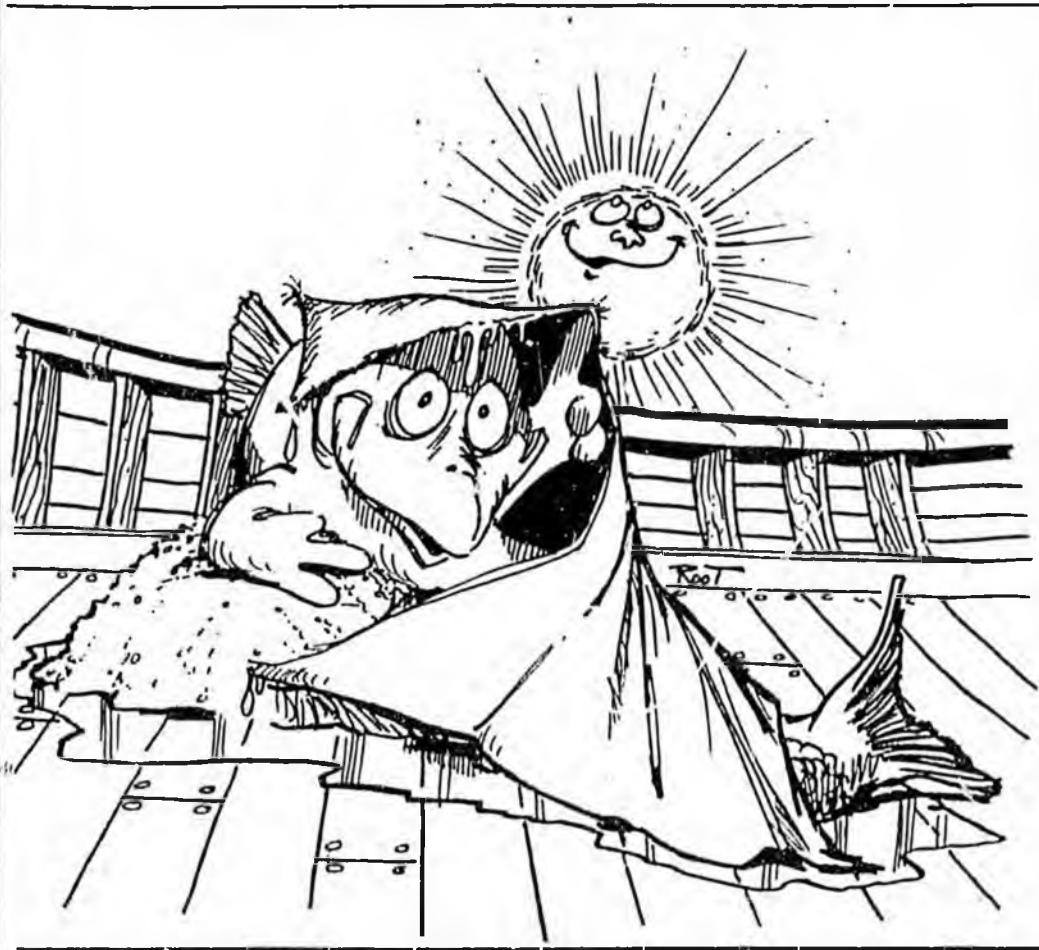
The majority of "Sampling Procedures and Notification to Packer and Administration of Results of Examination" and "Container Integrity Examination" could be directly applied to "Finished Product Evaluation" in

the "Plan of Operations". Some of the additional or clarifying information which would have to be included would be as follows:

1. The Association Sample Schedule.
2. Specifications which define merchantable quality and specifically identify defects and attribute requirements for containers and product.
3. Inclusion of ADEC in notification procedures for product detained for reexamination.
4. Specific procedures and methods used to identify uninspected product to prevent distribution prior to inspection and release.
5. Examples of forms used for recordkeeping and reporting.

"Procedures for Reconditioning and Destruction" as well as portions of "Container Integrity Examination" and "Sampling Procedures and Notification to Packer and Administration of Results of Examination" would have similar application to "Control and Handling of Non-Conforming or Unacceptable Materials" as found in the guidelines for the "Plan of Operations".

Additional opportunities for cross-application of activities exist but, the aforementioned should be sufficient to demonstrate the relationship between the Canned Salmon Control Plan and the Plan of Operations.



Salmon Quality Education Program

By
John P. Doyle

Final Report of the Work Completed with Funds Provided by SB103

Fishery Industrial Technology Center
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SALMON QUALITY CONTROL EDUCATION PROGRAM

Final Report of Work Completed
With Funds Provided by SB103

by

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November 1983
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BACKGROUND

With an increasing proportion of Alaska's salmon marketed fresh or frozen rather than canned, raw product quality has become a major consideration for both the processor and fisherman. Inability to produce high quality product is now thought to be the single most significant impediment to the future vitality of Alaskan salmon products in diverse markets.

The lack of uniformly high quality and the resulting poor image of Alaska salmon were recognized by a group of Southeast Alaska cold storage operators during the mid-1970s. They asked the University of Alaska Marine Advisory Program to start an immediate extension education program in salmon quality assurance. To test methods and approaches pilot projects were started on a statewide basis.

In 1979, fishermen and processors from Prince William Sound agreed that a systematic approach was needed to improve salmon quality. Senator Jay Kerttula of Palmer, whose district then included Prince William Sound, took leadership in determining what actions were needed. He formed the Senate Salmon Quality Committee. This committee was composed of the following members:

Senator Jay Kerttula, Chairman, Palmer
James Poor, St. Elias Ocean Products, Cordova
Bob Blake, fisherman, Cordova; president, Cordova Aquatic Marketing Association
Armin Koernig, founder and president, Prince William Sound Aquaculture Corporation
Knute Johnson, retired fisherman, Cordova
Lewis Hasbrouck, tender owner/operator, Prince William Sound
Jack Werner, businessman, Seward
Harold Hansen, former state senator, Juneau
Roy Alley, fisherman, Valdez
Bob Ditman, retired fisherman and miner, Valdez
Bruce Crow, J.B. Crow and Sons, Bethel
Henry Wiese, retired fishermen, Cordova
Wally Noerenberg (deceased), Prince William Sound Aquaculture Corporation
Bill Hall, fisherman, Cordova

and resource persons:

John Doyle, University of Alaska Marine Advisory Program
Alan Otness, fisherman, Petersburg
Walter Yonker (deceased), National Food Processors Association. Pacific Seafood Processors Association

The committee met on December 5, 1979 to discuss a number of alternatives including voluntary incentives, resource management improvements, legally induced incentives, financial assistance and education. The committee identified education as the number one priority and decided to form a subcommittee on education. The education subcommittee members were:

Harold Hansen, chairman
Bill Hall
Wally Noerenberg
Bob Blake
Walt Yonker
John Doyle

On January 3, 1980, the education subcommittee report was approved unanimously by the full Senate Salmon Quality Committee. The report recommended a strong salmon quality education program directed at all segments of the fishing industry. It outlined the educational activities to be undertaken by the University of Alaska Marine Advisory Program.

Upon committee recommendation, Senator Kerttula introduced SB364 into the 1980 Legislature. A salmon quality education bill, SB103, was passed May 17, 1982. SB103 provided the Marine Advisory Program, through the university's Fishery Industrial Technology Center, with \$170,000 to organize and conduct an industrywide educational program on salmon quality control.

APPROACH

It was the opinion of the university that those funds would be continuing. Funds provided by SB103 were therefore included in the university's continuation budget for FY84. A full-time faculty position on salmon quality education within the Marine Advisory Program was advertised. After candidates were screened, the governor's office decided these funds were a one-time only appropriation regardless of the intent of the Senate Salmon Quality Committee. This information was relayed to the university on September 20, 1982, resulting in the development of an alternate approach.

To develop and guide the educational effort an industry oversight committee was formed to review the organization and implementation of the project. That committee consisted of representatives from all segments of the Alaska salmon industry:

Roy Alley
Bob Blake
Bob Cavanaugh, Ocean Beauty Seafoods, Seattle
Bruce Crow
Roger DeCamp, National Food Processors Association, Seattle
Harold Hansen
Mel Monsen, legislative aide, Bristol Bay District, Juneau
Alan Otness
Cliff Phillips, E.C. Phillips & Son, Ketchikan
James Poor

The oversight committee approved the concept of hiring a team knowledgeable about specific regions and fisheries throughout the state to develop materials for and conduct an intensive three to four month educational program statewide. They established a list of priorities for conducting a broadly-based educational program directed at fishermen, tendermen, and processors:

1. Develop a series of "how-to" fact sheets for distribution throughout the industry.
2. Prepare a slide series on salmon handling to be used in conjunction with the workshops and seminars.
3. Conduct salmon quality workshops and seminars around the state.
4. Develop a detailed salmon handler's manual to serve as a standard reference.
5. Produce television public service announcements to enhance public awareness of salmon quality.
6. Disseminate salmon quality improvement information through local radio and newspaper.

STATUS OF EDUCATIONAL ACTIVITIES

Project Staff

Six people were hired for three months to develop and conduct the educational program:

Chuck Crapo, project leader, Anchorage--presently a candidate for a M.S. degree in food science and technology at Oregon State University; eight years experience in Alaska seafood processing industry as a quality control manager and plant manager; and project manager for developing the Alaska Seafood Marketing Institute's salmon quality guidelines.

John Enge, Jr., Petersburg--experience includes crewing in halibut, herring gillnet, salmon seine, and salmon gillnet fisheries; owner/operator of salmon troller; 14 years experience in the processing industry as a production supervisor, buying station manager, production and warehouse foreman, and plant worker; recently worked on contract with the Alaska Fisheries Development Foundation, developing longline baiting system.

Wayne Kvasnikoff, Kodiak--salmon seiner for 24 years in Alaska; fished in seine and gillnet herring, king crab and tanner crab fisheries; tendered salmon in Bristol Bay and Prince William Sound; served on Kodiak Fish and Game Advisory Committee for three years.

Doris Lashley, Kenai--23 years experience as salmon processor and fisherman on the Kenai Peninsula; established and managed Sea Catch, Inc., on Kenai River.

Ken Madsen, Seattle--western Alaska operations manager for Swiftsure Fisheries, Inc.; experience includes four years as manager of processing operations in Ketchikan and Togiak; founder of Seafood Production Systems, Inc., a fish production operation in western Alaska.

Rick Steiner, Anchorage--editor; recently Marine Advisory agent, University of Alaska, Kotzebue; commercial fisherman for two years; M.S. in fisheries science from Oregon State University. Presently Marine Advisory Agent, University of Alaska, Cordova.

Project staff met in Anchorage in January to begin developing educational materials, and met twice via audioconference.

Fact Sheets

The following 16 fact sheets were printed:

<u>Fishermen</u>	<u>No. of Copies Printed</u>
1. Southeast Drift Gillnetters	2,000
2. Southeast Seiners	1,000
3. Southeast Trollers	3,000
4. Freezer Trollers	500
5. Prince William Sound Seiners	750
6. Southcentral Drift Gillnetters	2,000
7. Southcentral/Bristol Bay Setnetters	2,000
8. Kodiak/Chignik Seiners	750
9. Bristol Bay Drift Gillnetters	5,000
10. Kodiak Setnetters/Beach Seiners	500
11. Arctic/Yukon/Kuskokwim Gillnetters	2,000
 <u>Tenders</u> 	
1. Refrigerated Seawater	1,000
2. Chilled Seawater	1,000
3. Ice	1,000
4. Dry	1,000
 <u>Processing</u> 	
Fresh and Frozen Processing	4,000
 TOTAL SHEETS 16	 TOTAL COPIES 27,500

Fact sheet distribution:

- a. Fact sheets were sent to Marine Advisory Program offices in Anchorage, Atmaultuak, Cordova, Dillingham, Juneau, Kodiak, Kotzebue, and Petersburg for further distribution to industry.
- b. All salmon quality project staff distributed the appropriate sheets in workshops statewide to support presentations and for participants to take home.
- c. Sample sheets were sent to every registered salmon processor in Alaska along with an invitation to order the number they could distribute in their plant and to their fishermen.

- d. Sheets were distributed to other offices frequented by fishermen and processors such as the Department of Environmental Conservation Seafood Inspection office in Anchorage, several Alaska Department of Fish & Game field offices, Cooperative Extension Service offices, community college learning centers, and others.
- e. Southeast troll sheets were enclosed with each troll log book sent out by the Alaska Sea Grant Program.
- f. Project staff distributed and posted sheets where workshops were held: in schools, on the docks, in homes.
- g. Specific fact sheets tailored for each fishery and region have been mailed to all permit holders.
- h. Availability of the fact sheets was announced in several industry periodicals.

Statewide response to the fact sheets has been very positive. The cartoon format has helped maintain interest in an otherwise dry subject. Demand for some fact sheets has exceeded our expectations and necessitated reprinting. The Marine Advisory Program office in Anchorage has also received quantity orders from processors.

Workshops

All project staff and Marine Advisory Program agents met in Anchorage February 28 through March 2 for technical in-service training on these topics.

Following this, the project staff and members of the Marine Advisory Program faculty conducted workshops in fishing communities around the state. Appendix 1 lists the schedule and locations of workshops.

The workshops covered the following topics in a two- to three-hour period:

1. Factors affecting intrinsic quality
2. Causes of fish quality loss
3. Importance of early chilling of the catch
4. Iced storage on fishing vessels
5. Chilled sea water systems for fishing vessels
6. Refrigerated sea water systems for fishing vessels
7. Freezing and frozen storage aboard fishing vessels
8. Washing fish
9. Butchering at sea
10. Onboard handling, storage, and offloading of salmon
11. Fishing vessel cleaning and sanitation
12. Upgrading fishing vessels to protect product quality
13. Fish handling during processing

In addition to the technical information conveyed in these workshops, the staff served a more subtle but ultimately more important function: increasing the awareness of the need to improve salmon quality. Current weak market conditions and media efforts to improve this situation were discussed in detail at workshops to emphasize the urgency of improving salmon quality.

Slide Series

A narrated series of 110 slides was developed and distributed to all Marine Advisory Program offices and project staff for use in workshops and to use in special seminars. These have also been distributed to processors and interested groups upon request.

Salmon Handler's Manual

Due to the limited duration of the project, work was delayed on the manual until higher priority items such as the workshops, slide series, and fact sheet were completed. Several sections of the manual have been completed.

Television Public Service Announcements

Workshops were an extremely effective way to deliver a large amount of information to a small segment of the industry. Project staff decided to supplement this intensive education with a more extensive delivery mechanism: television public service announcements. These were intended to reach a broader segment of the industry. Three 30 second television spots were produced in cooperation with the University of Alaska Instructional Telecommunications Service (UAITS) in Anchorage. These have been broadcast on the University Learn/Alaska Instructional Telecommunications Network, the state satellite network, and several local stations during the 1983 salmon season.

The intent of these television public service announcements was not to convey technical information, but to continually remind industry of the need to improve salmon quality. They appear to have had highly significant impact.

Additional Activities

Project staff arranged and participated in interviews on local radio stations and in newspapers around the state to further inform fishermen and processors of quality problems and solutions.

PROJECT EVALUATION

The impact of educational efforts is measured over years and decades. Undesirable habits practiced for years will not change overnight. Once market feedback on salmon quality is established, the economic incentive alone will mandate quality improvement. Our efforts have exposed the industry to whys and hows of quality improvement. Objective measurement of salmon quality will be possible some day but the measures we have now are all subjective; that of the general impressions of fishermen, processors, buyers, distributors and consumers. Such a subjective impression among buyers, sellers and consumers ultimately determines the disposition and price of Alaskan salmon.

Trends in product quality should be determined through a systematic survey of impressions within the salmon marketing complex. After the 1983 season, Marine Advisory Program staff will survey a representative segment of the

Alaska salmon marketing complex and major distributors using questionnaires and phone interviews. This survey should indicate the incidence of certain quality defects and which defects are most detrimental to the marketability of Alaska salmon. Survey results will help direct future quality assurance efforts.

Thus, an assessment of the project's impact on the 1983 season will be derived from analysis of a systematic survey in the winter of 1983-84. Preliminary impressions among project staff and industry leaders were very positive. Staff have unanimously indicated that quality assurance awareness within the industry has increased substantially as a direct result of the project. Staff have noted significant adjustments in actual operating procedures (including icing, sanitation, installation of hold refrigeration, and so on) as a result of improved attitude toward product quality.

Recommendations

1. Fact sheets - reprint and continue distribution; develop posters using cartoon format.
2. Slide shows - develop a slide show specific to each gear type, one for tenders and one for processors. A set of six shows be prepared and distributed to Marine Advisory agents.
3. Workshops - continue, especially for processors, because of high worker turnover. Coordinate scheduling with plant management and fishing organizations to correspond with other important meetings to assure maximum attendance.
4. Public service announcements - develop additional material for radio; develop a television spot for processors.

Because SB103 did not provide for continued funding of the education program, and because of the general realization that a long-term education effort was needed, Senator Kerttula introduced legislation (SB161) to support a continuing effort. SB161 would provide \$142,240 for the University of Alaska Marine Advisory Program to continue salmon quality assurance education. The salmon quality education program has become a continuing effort within the Fishery Industrial Technology Center of the University of Alaska.

APPENDIX 1
Workshop Schedule

<u>DATES</u>	<u>INSTRUCTOR</u>	<u>HOURS</u>	<u>AUDIENCE</u>	<u>LOCATION</u>
3/1/83	Steiner	1	60	Anchorage
3/6/83	Crapo	3	14	Naknek
3/7/83	Enge	3	17	Craig
3/7/83	Lashley	3	9	Naknek
3/7/83	Crapo	3	3	South Naknek
3/8/83	Crapo	3	11	Levelock
3/8/83	Lashley	3	10	Egegik
3/8/83	Enge	3	4	Klawok
3/9/83	Crapo	3	8	Levelock
3/9/83	Enge	3	2	Hydaburg
3/10/83	Crapo	3	12	Pilot Point
3/11/83	Lashley/Kramer	3	5	Dillingham
3/14/83	Crapo	3	8	Newhalen
3/15/83	Crapo	3	4	Iliamna
3/16/83	Coughenower	3	14	Togiak
3/17/83	Kvasnikoff	3	12	Port Graham
3/17/83	Crapo	3	9	Fairbanks
3/17/83	Enge	3	3	Kake
3/19/83	Kvasnikoff/Lashley	3	4	Homer
3/20/83	Enge	3	15	Port Alexander
3/21/83	Crapo	3	12	Valdez
3/22/83	Crapo	3	4	Whittier
3/23/83	Crapo	3	18	Whittier
3/23/83	Kvasnikoff	3	8	English Bay
3/25/83	Kvasnikoff	3	14	Seldovia
3/29/83	Lashley	-	0	Seward
3/30/83	Kvasnikoff	3	18	Chignik Bay
4/1/83	Kvasnikoff	3	12	Chignik Lake
4/2/83	Lashley	3	1	Kenai
4/5/83	Enge	3	12	Hoonah
4/6/83	Enge	3	15	Pelican
4/7/83	Enge	3	15	Juneau
4/7/83	Kvasnikoff	3	15	Port Lions
4/10/83	Coughenower	3	7	Koliganek
4/11/83	Enge	3	3	Haines
4/12/83	Enge	3	10	Juneau
4/13/83	Madsen	3	16	Mountain Village
4/14/83	Madsen	3	45	Emmonak
4/15/83	Madsen	3	7	Alakanuk
4/15/83	Kvasnikoff	6	8	Ketchikan
4/18/83	Madsen	3	33	Marshall
4/18/83	Coughenower	3	14	Koliganek
4/19/83	Madsen	3	11	St. Marys
4/21/83	Madson	3	7	Bethel
4/21/83	Madsen	3	9	Atmautluak
4/21/83	Steiner	3	15	Nome
4/22/83	Steiner	3	32	Unalakleet
4/22/83	Madsen	2	5	Atmautluak
4/26/83	Kerns	3	3	Sitka
4/28/83	Kerns	3	5	Ketchikan
5/10/83	Doyle	3	38	Cordova
5/12/83	Kerns	3	7	Angoon

<u>DATES</u>	<u>INSTRUCTOR</u>	<u>HOURS</u>	<u>AUDIENCE</u>	<u>LOCATION</u>
5/14/83	Kramer	3	10	False Pass
5/16/83	Kramer	3	20	King Cove
5/18/83	Kramer	3	28	Sand Point
5/19/83	Kramer	2	1	Sand Point
6/1/83	Steiner	3	17	Homer
6/2/83	Steiner	3	12	Kenai
6/3/83	Steiner	3	19	Seward
6/6/83	Steiner/Garza	3	14	Golovin
6/7/83	Steiner/Garza	3	39	Shaktiolik
6/8/83	Steiner	3	53	Elim
6/8/83	Kerns	3	15	Metlakatla
6/10/83	Steiner	3	7	Unalakleet
				TBA Kotzebue

Alaska Seafood Marketing Institute

526 Main Street Juneau, Alaska 99801 (907) 586-2902

APR 27 1982

SBF72



Promoting Alaska's Finest Resource

MEMORANDUM

March 15, 1982

TO: ALL MEMBERS OF THE ALASKA SEAFOOD INDUSTRY
FROM: Eric Eckholm, Executive Director
Alaska Seafood Marketing Institute
RE: RECOMMENDED STATEWIDE QUALITY ASSURANCE GUIDELINES
AND SPECIFICATIONS FOR PACIFIC SALMON

Attached for your review is a preliminary draft of recommended salmon handling guidelines for fishermen, tenders and processors. This draft is available for public comment until May 3, 1982, when it will be revised and distributed for implementation by the industry, beginning with the 1982 season.

One of the major goals of the ASMI quality assurance program is to ensure a consistent, high quality image for all Alaska seafood products in world markets. This goal can only be achieved with the full cooperation of all members of the industry.

This is your opportunity to contribute your quality expertise in the development of guidelines which apply to all gear types in all regions of the state, and to demonstrate that a voluntary quality program can be effective in assuring the high quality of Alaska salmon products.

All questions and comments should be made in writing or by telephone to the ASMI office in Juneau or at one of the public meetings tentatively scheduled for March and April in:

Anchorage
Dillingham
Bethel
Kotzebue

Kenai
Kodiak
Cordova
Ketchikan
Sitka

PRELIMINARY DRAFT

Alaska Seafood Marketing Institute

RECOMMENDED STATEWIDE QUALITY ASSURANCE
GUIDELINES AND SPECIFICATIONS
FOR PACIFIC SALMON

Phase 1: Fishing and tendering vessels and operations, processing facilities and operations, quality evaluation criteria and general product specifications.

Preface

These draft guidelines for Pacific salmon represent the foundation upon which the Alaska Seafood Marketing Institute (ASMI) intends to build a comprehensive quality assurance program for all Alaska seafood products.

Consumer surveys show that the approximately one billion pounds of Alaska seafoods produced and distributed annually have a high quality reputation. ASMI believes that it is important to continue its efforts to maintain and improve the quality of Alaska seafood products whereby all members of the seafood industry will benefit from the economic advantage of a consistent, high quality product image in the world marketplace.

Because of the complexities of harvesting, processing, transporting and distributing seafoods from remote points along Alaska's 34,000 miles of coastline and extensive inland river system, there is a need for industry education to assure the quality of seafoods produced in all areas of the state. These guidelines are an important part of that educational effort.

The ASMI quality assurance program is designed to unite the efforts of the seafood industry and government agencies into an effective partnership. ASMI believes that this cooperative effort, involving fishermen, processors, brokers, transporters, and state and federal officials, will be helpful in assuring the consistent high quality of all Alaska seafood products sold in national and international markets.

Notice to Users

These recommended guidelines and specifications for Pacific salmon were developed by the Alaska Seafood Marketing Institute (ASMI) to assist in producing high quality salmon products. They are intended to be used by fishermen, tender operators and processors as general guidelines. They are not intended to replace the advice of trained and experienced technologists regarding the construction, operation and maintenance of unique vessels, facilities and equipment or regarding operating procedures in unique geographic areas. These guidelines and specifications are also designed to facilitate complete understandings in commercial transactions and may be used for reference by public service agencies. They should not in any way be construed as replacing existing state or federal regulations.

ASMI recommends that these draft guidelines be implemented by all members of the industry beginning with the 1982 season.

It is recognized that certain guidelines may not apply to all fishing, tendering and processing, operations, vessels and facilities, in all regions of the state, due to variations in vessel construction, facility design, tides, air or water temperature, intrinsic quality of the fish, or other factors. In such cases, alternative guidelines will be adopted in order to assure high quality salmon production throughout the industry, statewide.

Nothing contained in these guidelines and specifications is intended to be or shall be construed to create or form the basis for any liability on the part of ASMI, or its officers, employees or agents, for any injury or damage resulting from the failure of the person who engages in operations or activities subject to the provisions of, or guided by, these guidelines and specifications to comply with its provisions, or by reason or in consequence of any act or omission in connection with the implementation or enforcement of these guidelines and specifications on the part of ASMI by its officers, employees or agents.

RECOMMENDED STATEWIDE QUALITY ASSURANCE
GUIDELINES AND SPECIFICATIONS
FOR PACIFIC SALMON

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RECOMMENDED STATEWIDE QUALITY ASSURANCE
GUIDELINES AND SPECIFICATIONS
FOR PACIFIC SALMON

Section I. SCOPE

- 1.1 These guidelines and specifications apply to all five species of Pacific salmon (Oncorhynchus sp.) that are harvested, transported or processed in Alaska and which may be offered for sale in any number of styles, including, but not limited to:
- (a) round
 - (b) eviscerated, head-on
 - (c) eviscerated, head-off
 - (d) heads, fins and tail removed
 - (e) steaks or portions
 - (f) split sides, backbone removed
 - (g) fillet, skin-on
 - (h) fillet, skin-off
 - (i) canned
- 1.2 These guidelines and specifications do not apply to minced salmon by-products, such as eggs, oil, fish meal and minced flesh, at this time. Guidelines will be developed for these products in the future.

Section II. DEFINITIONS

Belly burn is a condition of deterioration of the lining of the belly cavity evidenced by discoloration and/or exposure of the rib bones.

Chilled sea water (CSW) is a type of refrigeration system, sometimes called a "slush ice" system, which uses a mixture of sea water and ice for chilling and holding chilled fish. If compressed air is bubbled through the mixture of sea water and ice for circulation, it is called a "champagne" system.

Contamination means direct or indirect transmission of objectionable matter to the fish.

Cold storage facility is any facility, whether a shore-based establishment or on a vessel, in which fish is kept cold by the use of ice or mechanical refrigeration. A cool room is any facility where fish is held at a temperature of 40°F or below. A cold storage room is any facility where fish is held at a temperature of 0°F or below.

Dry vessels are fishing or tendering vessels which are not using ice, chilled sea water (CSW) or refrigerated sea water (RSW) systems to chill the fish.

"Extrinsic" quality is a term which refers to the condition of a fish due to factors which affect the fish during and after it is harvested. Extrinsic quality defects are caused by improper catching, handling, processing and storage procedures.

Fish refers to Pacific salmon everywhere it is used in these guidelines.

Hatch combing is the raised portion on the deck of a vessel which surrounds the hatch and is designed to prevent runoff from the deck from entering the fish hold.

"Intrinsic" quality is a term which refers to the inherent physical characteristics of a fish before it is harvested, including, but not limited to, species, size, sex, physiological condition, and presence of parasites or disease.

Minimum specification is a description of a design, material or product which is currently attainable and within which all seafood vessels and facilities should be in compliance.

Natural water is fresh water or salt water from a natural source which may meet State of Alaska drinking water requirements, but has not been approved for such use.

Nonpotable water is water from any source which does not meet State of Alaska drinking water standards.

Potable water is water which meets all State of Alaska drinking water regulations.

Preferred specification is a description of a design, material or product which is not necessarily attainable at the present time for all existing vessels and facilities, but should be met or exceeded in the design of all new, or alterations to existing, vessels and facilities.

Prepare means to kill, eviscerate, dress, clean, cut or divide round fish.

Process means to can, cure, freeze, cook or otherwise preserve fish, at any temperature.

Processing facility is defined as any facility, whether shore-based or aboard a vessel, where fish is either prepared or processed for human consumption.

Refrigerated sea water (RSW) is a type of refrigeration system which uses sea water that is cooled by mechanical refrigeration for chilling and holding fish.

Sanitize means to treat surfaces so that the number of microorganisms is substantially reduced.

Unwholesome fish are those of such poor quality that they are unfit for human consumption, as defined by U.S. Food and Drug Administration regulations.

Section III. GENERAL INFORMATION ABOUT FISH QUALITY

Although there are many aspects that must be considered when defining what is meant by "high quality" fish products, there are two major ones that fishermen, tender operators and processors should be concerned with as producers:

- (a) the "intrinsic" quality of the fish before it is harvested, and
- (b) the "extrinsic" quality of the fish as it is delivered to the tender, processor and, finally, the consumer.

The first aspect, the "intrinsic" quality of the fish, is determined by the physical condition of the fish at the time it is harvested, including species, size, sex, stage of maturity and other physiological characteristics. These characteristics are inherent to a particular fish, and the method of handling that fish will not significantly alter these characteristics.

The second aspect, the "extrinsic" quality of the fish, is determined entirely by the methods employed in the harvesting, handling, processing and storing of that fish. Proper handling procedures will result in fish of high extrinsic quality; improper handling methods will result in loss of extrinsic quality. Fish which are handled so poorly that they become "unwholesome" are unfit for human consumption.

These guidelines outline proper procedures for harvesting, tendering, processing and storing Pacific salmon which, if followed carefully, will result in products of consistently high extrinsic quality, which are more desirable to consumers. The product specifications address both intrinsic and extrinsic quality characteristics, however, they are in no way intended to rate the intrinsic quality characteristics of the fish as more or less desirable to consumers.

4. Section IV. FISHING VESSELS AND OPERATIONS

4.1 A. VESSEL SPECIFICATIONS

4.1.1 General Information

- 4.1.1.1 All fishing vessels and gear should be designed for rapid and efficient handling of fish and ease of cleaning and sanitation, and should be so constructed, operated and maintained as to minimize physical damage, contamination or deterioration of fish.
- 4.1.1.2 All vessel operators should have valid gear and vessel and crew licenses issued by the State of Alaska.

4.1.2 Minimum Specifications

- 4.1.2.1 All vessels should have a suitable fish hold for storing the catch, whether it be below deck or on-deck. Plastic totes with drainage capability are acceptable for use as fish holds.
- 4.1.2.2 Fish holds should have watertight bulkheads designed to protect the fish from contaminants such as bilge water, fuel and lubricants.
- 4.1.2.3 Fish holds on dry vessels should have removable floor boards or some other method of construction to facilitate drainage from the hold.
- 4.1.2.4 Fish holds should have the necessary pumps and sumps with the capability to pump the hold dry.
- 4.1.2.5 Fish holds should be adequately insulated to control heat transfer from engine, crew's quarters or heated pipes to fish.
- 4.1.2.6 Fuel and hydraulic lines running through fish holds should be enclosed to protect the fish in case of line failure.
- 4.1.2.7 Vessels should have hatch-combings of sufficient height to prevent the flow of contaminants from the deck to the fish holds.*
- 4.1.2.8 Vessels should be equipped with sufficient hatch covers or suitable covering material to eliminate the exposure of fish to sunlight or airborne contaminants.
- 4.1.2.9 All lights in fish handling areas should be shatterproof or have protective covering such that if they are broken, product contamination will not occur.

*This is a preferred specification for existing vessels 32 ft. and under, but should be included in any new vessel design.

4.1.3

Preferred Specifications

- 4.1.3.1 Vessels should meet all minimum specifications stated in Section 4.1.2, and in addition:
- 4.1.3.2 There should be no exposed ribs or untreated wood on surfaces in the fish hold or in fish handling areas on deck. The hold lining should be smooth and watertight. A plywood sheeted hold, caulked with nontoxic seam compound and coated with a suitable paint or covering is acceptable. A fully approved hold would be completely insulated, and would have an impermeable lining with rounded corners and no obtrusions. Holds should be conducive to easy and complete cleaning to prevent build-up of bacteria.
- 4.1.3.3 Vessels should have watertight hatch covers or covering designed to protect fish from salt or fresh water intrusion.
- 4.1.3.4 On vessels with refrigeration systems, the systems should be in good operational condition and capable of chilling a full load of fish to a range of 30° to 35°F (-1° to 2°C) within a reasonable amount of time.
- 4.1.3.5 RSW vessels should limit their loads to a maximum of 45 lbs. of fish per cubic foot of hold space.
- 4.1.3.6 On vessels with freezing systems, the systems should be in good operational condition and capable of reducing the core temperatures of a full load of fish to 0°F (-18°C), or lower, within a reasonable amount of time.
- 4.1.3.7 Tanked vessels and freezer vessels should be equipped with recording thermometers which accurately measure and record the temperature of the hold, freezers or cold storage area. Vessels which do not have tanked holds should be equipped with bi-metal thermometers which accurately measure the internal temperature of the fish.
- 4.1.3.8 Vessels with below-deck holds should be equipped with chutes or other techniques or devices to convey fish into holds, after removal from net, with a minimum of damage to the fish.

4.2 B. RECOMMENDED OPERATING PROCEDURES FOR FISHERMEN*

4.2.1 General Guidelines for all Gear Types

- 4.2.1.1 Fish should be handled carefully at all times. This includes, but is not limited to:
Remove fish gently from gear.
Do not handle fish or remove from nets by the tail.
Do not throw, kick or step on fish.
Protect fish from damage in shaft alley or any other part of the vessel.
- 4.2.1.2 No pughs, forks, picks, hooks or pumps which damage the edible part of the fish should be used.
- 4.2.1.3 Fish should be protected from heat, sunlight, air-drying and inclement weather.
- 4.2.1.4 Fish should be protected from bilge water, gas, diesel oil, hydraulic oil, grease and other contaminants.
- 4.2.1.5 On vessels with below-deck holds, chutes or other techniques or devices should be used to convey fish into the hold in order to reduce handling and prevent damage often caused by throwing fish into the hold.
- 4.2.1.6 Fish held in bulk on vessels without tanked holds should be shelved at 90 cm (35 in.) intervals.
- 4.2.1.7 On tanked vessels, fish holds should be divided, as necessary, to prevent damage to fish due to the vessel's motion.
- 4.2.1.8 No pets should be permitted on vessels used for catching or transporting fish.
- 4.2.1.9 Live fish should be stunned in the water or as soon as they are brought on board.**
- 4.2.1.10 Feeding cohos and kings should be eviscerated and washed as soon as they are brought on board.
- 4.2.1.11 Round and eviscerated fish should not be intermingled in the hold area. A separate bin or on-deck totes should be used to store eviscerated fish on vessels carrying both round and eviscerated fish.

*Fishermen should also refer to recommended Fish Quality Evaluation Procedures aboard tenders on page 18.

**This is not feasible for seining operations.

- 4.2.1.12 Fish should be delivered to tenders or processing facilities as rapidly as possible. All fish should be chilled within twelve (12) hours from the time of capture.
- 4.2.1.13 Pumps and brailers used for unloading fish should be operated in a manner that minimizes physical damage to fish. The recommended maximum load per brailer is 200 fish or 800 lbs.
- 4.2.1.14 The holds, bin boards and decks should be thoroughly cleaned and sanitized in accordance with the Fishing Vessel Sanitation Procedures described in Section 4.5 of these Guidelines. The vessel should be cleaned after every delivery.

4.2.2 Additional Guidelines for Drift Gill Net Operations

- 4.2.2.1 Drift gill net sets should not be longer than two (2) hours.
- 4.2.2.2 Drift gill nets should not be wound onto reel until all fish have been picked from net.

4.2.3 Additional Guidelines for Set Gill Net Operations

- 4.2.3.1 Set gill net sets should not be longer than six (6) hours.
- 4.2.3.2 Set gill nets should not be dragged on the beach until all fish have been picked from net.
- 4.2.3.3 Burlap used to protect fish from exposure to sun and air should be washed in salt water after every use and should be replaced often.
- 4.2.3.4 Fish should be protected from fecal contamination by pets and other animals.
- 4.2.3.5 Fish should be thoroughly washed in salt or fresh water as soon as possible after catching and should be stored in clean containers until delivery to a tender or processor.

4.3

C. CHILLING AND CHILL STORAGE DURING FISHING OPERATIONS

4.3.1

General Guidelines for Round Fish

4.3.1.1

All fishermen should use ice or some other method of chilling the fish. Whatever method is used, fish should be chilled as soon as possible after catching.

4.3.1.2

If ice is used, the fish should be stored in a sufficient amount of finely divided ice to reduce and hold the temperature of the fish to a range of 32° to 35°F (0° to 2°C).

4.3.1.3

If a chilled (CSW) or refrigerated (RSW) sea water system is used, the fish should be maintained at 30° to 35°F (-1° to 2°C). All tanks should be prechilled to 30° to 32°F (-1° to 0°C) before loading fish.

4.3.1.4

All ice used for chilling fish should be made with clean water from an approved source and should not be contaminated during manufacturing, transportation or storage.

4.3.1.5

All sea water used in CSW and RSW systems should be as clean as potable water. It should be obtained from open waters, away from populated areas or fresh streams.

4.3.1.6

The internal temperatures of iced fish and/or the temperature of the hold on vessels with CSW or RSW systems should be monitored and logged at regular intervals, preferably every six (6) hours. Bi-metal thermometers should be used to measure the internal temperature of the fish. The thermometer should be carefully inserted in the anal vent of the fish until the reading stabilizes, or approximately one minute.

4.3.2

Additional Guidelines for Dressed (Eviscerated) Fish

4.3.2.1

Dressed fish should be iced in plastic tubs with drainage capability, boxes or small removable bins as soon as possible after evisceration.

4.3.2.2

Neither CSW nor RSW systems should be used for holding eviscerated fish.

4.4

D. FREEZING AND FROZEN STORAGE ABOARD
FISHING VESSELS

- 4.4.1 The core temperatures of several average size fish should be measured with a thermocouple at regular intervals during a trial run of a full load of fish, to determine the actual capacity of the freezers during operation at sea.
- 4.4.2 Fish should not be removed from freezers until the core temperature has been reduced:
(a) preferably, to 0°F (-18°C), or
(b) at least, to 5°F (-15°C) or lower.
- 4.4.3 The core temperatures of fish in storage should remain at 0°F (-18°C) or lower.
- 4.4.4 Fish should be frozen and held at a constant temperature with a minimum of fluctuation.
- 4.4.5 The temperature of freezers and storage areas should be monitored at regular intervals, preferably every six (6) hours.
- 4.4.6 Fish should be glazed as soon as possible after freezing to prevent dehydration and oxidation.

4.5.1

General Information

4.5.1.1

Fish stored in an insanitary fishing vessel hold will be contaminated with bacteria and will have a greatly reduced storage life. Fish slime and blood make excellent food for bacteria and should be removed as soon as possible after fish have been unloaded from the vessel.

4.5.1.2

All RSW systems should be designed with a cleaning loop to permit proper cleaning and sanitizing of the sea water piping and the heat exchangers.

4.5.2

Cleaning and Sanitation Procedures

4.5.2.1

The following steps should be followed when cleaning and sanitizing a fishing vessel:

- (a) Flush all fish contact surfaces with clean fresh water or clean sea water.
- (b) Scrub all fish contact surfaces with a brush, using a solution of detergent in warm water.
- (c) Rinse with cold fresh water or sea water.
- (d) Sanitize with a solution containing chlorine or iodine.
- (e) After 5 to 10 minutes, rinse off the sanitizing solution.

4.5.2.2

Wooden boats should not be steam cleaned. Fatty and proteinaceous materials (fish slime and gurry) can be forced into the wood, making the job of thorough cleaning almost impossible.

4.5.2.3

As soon as possible after fish have been removed from an RSW system, the sea water piping and the heat exchangers should be cleaned, sanitized and rinsed, using a caustic solution as the cleaner and an iodine as the sanitizer.

4.5.3

Detergents and Sanitizers

4.5.3.1

The cleaner used should be one suited to removal of fish gurry. Alkaline detergents are best for removal of fat and protein materials (fish slime and gurry). Most common household detergents are mixtures of alkaline phosphates and a wetting agent and are suitable for use on a fishing vessel.

4.5.3.2

A sanitizing agent containing either chlorine or iodine should be used to kill bacteria left after the vessels have been cleaned. Ordinary liquid chlorine bleach (5% hypochlorite) is suitable. It is very important that it be diluted in the ratio of one-half cup to 5 gallons of water. An iodine sanitizer can also be used; it is less corrosive to metal parts of the vessel, but costs about twice as much. Under no circumstances should sanitizers containing phenols (such as lysol and ninesol) be used in a fish hold or on fish handling surfaces.

5. Section V. TENDERING VESSELS AND OPERATIONS

5.1 A. VESSEL SPECIFICATIONS

5.1.1 General Information

5.1.1.1 All tendering vessels should be designed for rapid and efficient handling of fish and ease of cleaning and sanitation, and should be so constructed, operated and maintained as to minimize physical damage, contamination or deterioration of fish.

5.1.1.2 All tender operators should have valid vessel and crew licenses issued by the State of Alaska.

5.1.2 Minimum Specifications

5.1.2.1 All vessels should have a suitable fish hold for storing the catch, whether it be below deck or on-deck. Plastic totes with drainage capability are acceptable for use as fish holds.

5.1.2.2 Fish holds should have watertight bulkheads designed to protect the fish from contaminants such as bilge water, fuel and lubricants.

5.1.2.3 Fish holds on dry vessels should have removable floor boards or some other method of construction to facilitate drainage from the hold.

5.1.2.4 Fish holds should have the necessary pumps and pumps with the capability to pump the hold dry.

5.1.2.5 Fish holds should be adequately insulated to control heat transfer to fish from engine, crew's quarters or heated pipes.

5.1.2.6 Fuel and hydraulic lines running through fish holds should be enclosed to protect the fish in case of line failure.

5.1.2.7 Vessels should have hatch-combings of sufficient height to prevent the flow of contaminants from the deck to the fish holds.

5.1.2.8 Vessels should be equipped with sufficient hatch covers or suitable covering material to eliminate the exposure of fish to sunlight or airborne contaminants.

5.1.2.9 All lights in fish handling areas should be shatterproof or have protective covering such that if they are broken, product contamination will not occur.

5.1.3

Preferred Specifications

- 5.1.3.1 Vessels should meet all minimum specifications stated in Section 5.1.2, and in addition:
- 5.1.3.2 There should be no exposed ribs or untreated wood on surfaces in the fish hold or in fish handling areas on deck. The hold lining should be smooth and watertight. A plywood sheeted hold, caulked with nontoxic seam compound and coated with a suitable paint or covering is acceptable. A fully approved hold would be completely insulated and would have an impermeable lining with rounded corners and no obtrusions. Holds should be conducive to easy and complete cleaning to prevent build-up of bacteria.
- 5.1.3.3 Vessels should have watertight hatch covers or covering designed to protect fish from salt water or fresh water intrusion.
- 5.1.3.4 On vessels with refrigeration systems, the systems should be in good operational condition and capable of chilling full loads of fish to a range of 30° to 35°F (-1° to 2°C) within a reasonable amount of time. Circulation systems should be adequate to ensure even temperatures throughout the hold.
- 5.1.3.5 Tanked vessels should be equipped with recording thermometers which accurately measure and record the temperature of the hold. Vessels which do not have tanked holds should be equipped with bi-metal thermometers which accurately measure the internal temperature of the fish.
- 5.1.3.6 Vessels with below-deck holds should be equipped with chutes or other techniques or devices designed to convey fish into holds, after removal from r t, with a minimum of damage to the fish.

5.2 B. RECOMMENDED OPERATING PROCEDURES ABOARD TENDERS

5.2.1 General Guidelines

- 5.2.1.1 Fish should be handled carefully at all times. This includes, but is not limited to:
Do not handle fish by the tail.
Do not throw, kick or step on fish.
Protect fish from damage in shaft alley or any other part of the vessel.
- 5.2.1.2 No pugs, forks, picks, hooks or pumps which damage the fish should be used.
- 5.2.1.3 Fish should be protected from heat, sunlight, air-drying and inclement weather.
- 5.2.1.4 Fish should be protected from bilge water, gas, diesel oil, hydraulic oil, grease and other contaminants.
- 5.2.1.5 On vessels with below-deck holds, chutes or other techniques or devices should be used to convey fish into the hold in order to reduce handling and prevent damage often caused by throwing fish into the hold.
- 5.2.1.6 Fish held in bulk on vessels without tanked holds should be shelved at 90 cm (35 in.) intervals.
- 5.2.1.7 On tanked vessels, fish holds should be divided, as necessary, to prevent damage to fish due to the vessel's motion.
- 5.2.1.8 No pets should be permitted on vessels used for transporting fish.
- 5.2.1.9 Round and eviscerated fish should not be intermingled in the hold area. A separate bin or on-deck totes should be used to store eviscerated fish on vessels carrying both round and eviscerated fish.
- 5.2.1.10 Fish should be delivered to processing facilities as rapidly as possible. All fish should be chilled within twelve (12) hours from the time of capture.
- 5.2.1.11 Pumps and brailers used for unloading fish should be operated in a manner that minimizes physical damage to fish. The recommended maximum load per brailer is 200 fish or 800 lbs.
- 5.2.1.12 The holds, bin boards and decks should be thoroughly cleaned and sanitized in accordance with the Tendering Vessel Sanitation Procedures described in Section 5.5 of these Guidelines. The vessel should be cleaned after every delivery.

5.2.2

Fish Quality Evaluation Procedures

- 5.2.2.1 Both the intrinsic and extrinsic quality of all fish should be evaluated "as received," whenever fish is transferred
- (a) from a fishing vessel or set net site to a tender or other vehicle used for transporting fish, or
 - (b) from a tender to another tender or motor vehicle used for transporting fish.
- 5.2.2.2 A written evaluation of fish quality should be made, and the record of the evaluation should be delivered to appropriate personnel at the processing facility. The written evaluation should include, but need not be limited to
- (a) correct species identification,
 - (b) external appearance of eyes, gills, scales, skin and general condition of the entire load,
 - (c) odor,
 - (d) internal fish temperature, and
 - (e) sexual maturity.
- If fish quality appears questionable, evaluation should include internal appearance of viscera, kidney and belly walls.
- 5.2.2.3 Any known deterioration of quality caused by refrigeration system failure, adverse weather conditions, contamination by bilge water, fuel, lubricants, phenols (lysol) or other contaminants, or any other adverse conditions, should be included in the written evaluation.
- 5.2.2.4 The date and time of the catch on each vessel should be determined by examining fish, logs and checking date and time of last delivery, before fish are transferred to the tender and fish tickets are issued. The catch date and time should be noted on the written evaluation.
- 5.2.2.5 Fish suspected of being unwholesome or contaminated should be segregated from all other fish on the tender and should be identified in the written evaluation. High quality fish should not be mixed with fish of questionable quality.
- 5.2.2.6 Fish found during evaluation to be unwholesome or contaminated by bilge water, fuel, lubricants, phenols or other contaminants should not be accepted by tenders or processing facilities.
- 5.2.2.7 Fish exhibiting visible signs of wounds, seal bites, bruising, belly burn or other signs of intrinsic or extrinsic loss of quality should be segregated.

5.3

C. CHILLING AND CHILL STORAGE
ABOARD TENDERS

5.3.1

General Guidelines for Round Fish

- 5.3.1.1 All tender operators should use ice or some other method of chilling the fish. Whatever method is used, fish should be chilled as soon as possible after loading on the tender.
- 5.3.1.2 If ice is used, the fish should be stored in a sufficient amount of finely divided ice to reduce and hold the temperature of the fish to a range of 32° to 35°F (0° to 2°C) within a reasonable amount of time.
- 5.3.1.3 If a chilled (CSW) or refrigerated (RSW) sea water system is used, the fish should be maintained at 30° to 35°F (-1° to 2°C). All tanks should be prechilled to 30° to 32°F (-1° to 0°C) before receiving fish.
- 5.3.1.4 All ice used for chilling fish should be made from clean water from an approved source and should not be contaminated during manufacturing, transportation or storage.
- 5.3.1.5 All sea water used in CSW and RSW systems should be as clean as potable water. It should be obtained from open waters, away from populated areas or fresh streams.
- 5.3.1.6 The internal temperatures of iced fish and/or the temperature of the hold on vessels with CSW or RSW systems should be monitored and logged at regular intervals, preferably every six (6) hours. Bi-metal thermometers should be used to measure the internal temperature of the fish. The thermometer should be carefully inserted in the anal vent of the fish until the reading stabilizes, or approximately one minute.
- 5.3.1.7 RSW tenders should limit their loads to a maximum of 45 lbs. of fish per cubic foot of hold space.

5.3.2

Additional Guidelines for Dressed (Eviscerated) Fish

- 5.3.2.1 Dressed fish should be stored in ice in impermeable tubs with drainage capability, boxes or small removable bins on the tender.
- 5.3.2.2 Neither CSW nor RSW systems should be used for holding eviscerated fish.

5.5

D. TENDERING VESSEL SANITATION

5.5.1

General Information

- 5.5.1.1 Fish stored in an insanitary tendering vessel hold will be contaminated with bacteria and will have a greatly reduced storage life. Fish slime and blood make excellent food for bacteria and should be removed as soon as possible after fish have been unloaded from the vessel.
- 5.5.1.2 All RSW systems should be designed with a cleaning loop to permit proper cleaning and sanitizing of the sea water piping and the heat exchangers.

5.5.2

Cleaning and Sanitation Procedures

- 5.5.2.1 The following steps should be followed when cleaning and sanitizing a tendering vessel:
- (a) Flush all fish contact surfaces with clean fresh water or clean sea water.
 - (b) Scrub all fish contact surfaces with a brush, using a solution of detergent in warm water.
 - (c) Rinse with cold fresh water or sea water.
 - (d) Sanitize with a solution containing chlorine or iodine.
 - (e) After 5 to 10 minutes, rinse off the sanitizing solution.
- 5.5.2.2 Wooden boats should not be steam cleaned. Fatty and proteinaceous materials can be forced into the wood, making the job of thorough cleaning almost impossible.
- 5.5.2.3 As soon as possible after fish have been removed from an RSW system, the sea water piping and the heat exchangers should be cleaned, sanitized and rinsed, using a caustic solution as the cleaner and an iodine as the sanitizer.

5.5.3

Detergents and Sanitizers

- 5.5.3.1 The cleaner used should be one suited to removal of fish gurry. Alkaline detergents are best for removal of fat and protein materials (fish slime and gurry). Most common household detergents are mixtures of alkaline phosphates and a wetting agent and are suitable for use on a fishing vessel.
- 5.5.3.2 A sanitizing agent containing either chlorine or iodine should be used to kill bacteria left after the vessel has been cleaned. Ordinary liquid chlorine bleach (5% hypochlorite) is suitable. It is very important that it be diluted in the ratio of one-half cup to 5 gallons of water. An iodine sanitizer can also be used. It is less corrosive to metal parts of the vessel, but costs about twice as much. Under no circumstances should sanitizers containing phenols (such as lysol and pinesol) be used in a fish hold or on fish handling surfaces.

Section VI. SHORE-BASED AND FLOATING PROCESSING FACILITIES AND OPERATIONS

6.1 A. FACILITY AND EQUIPMENT SPECIFICATIONS

6.1.1 General Information

- 6.1.1.1 All vessels, vehicles and equipment used in the transportation, unloading or processing of fish should be so constructed, operated and maintained as to minimize physical damage, contamination or deterioration of the fish.
- 6.1.1.2 No fish processing facility may operate in Alaska without a valid annual certificate and permit as required by the State of Alaska.
- 6.1.1.3 Many aspects of fish processing operations, including facility requirements, equipment and utensils, plumbing, sanitary facilities, water supply and ice, thermal processing and waste disposal are regulated by the Alaska Department of Environmental Conservation and the U.S. Food and Drug Administration.* The specifications and procedures outlined in this section are intended to be complementary to applicable state and federal regulations and should not in any way be construed as replacing or conflicting with such regulations.
- 6.1.1.4 All aspects of salmon canning in Alaska must meet the requirements of the current Canned Salmon Control Plan, a voluntary cooperative agreement between the canned salmon industry, the National Food Processors Association and the U.S. Food and Drug Administration.

6.1.2 General Specifications

- 6.1.2.1 The facility should be large enough to accommodate processing operations without interfering with proper sanitary practices. Floors, walls and ceilings should be constructed of materials that can be kept clean, sanitary and in good repair.
- 6.1.2.2 Each room should have sufficient natural or artificial lighting for the purpose for which it is to be used. Lighting should be adequate in all areas to permit visibility for cleaning and sanitary inspection operations.
- 6.1.2.3 All lights should be shatterproof or have protective covering such that if they are broken, product contamination will not occur.
- 6.1.2.4 Ventilation should be sufficient to prevent mold growth, objectionable odors or accumulation of excessive condensates.

*See citation in the Recommended References section of these Guidelines.

- 6.1.2.5 Toilets should be totally enclosed, well-lighted and ventilated the outside. They should be adequately screened and equipped with self-closing doors. Facilities should be adequate, operational and in compliance with city and state codes.
- 6.1.2.6 Adequate handwashing facilities should be provided with soap, running water of suitable temperature and drying facilities. Directions should be posted which instruct employees to wash hands thoroughly before re-entering the processing area. Where practicable, portable hand dips containing a sanitizing solution should be used.
- 6.1.2.7 Equipment which comes in contact with butchered fish should be constructed of smooth, nontoxic, corrosion-resistant metal or other nonabsorbent material or should be covered by another material which is equally sanitary and does not contaminate the fish.
- 6.1.2.8 Where applicable, any grounds surrounding the plant that are under the control of the operator should be free from conditions incompatible with sanitary food manufacturing, processing, packing or holding operations. This may include but is not limited to litter, refuse, tall weeds or inadequately drained areas that could contribute to contamination of food products by providing a place for insects, rodents or microorganisms to generate.
- 6.1.2.9 All outside conveyors and flumes for transporting round fish should be protected so as to prevent fecal contamination by birds and other animals.
- 6.1.2.10 Outside holding bins and outside conveyors used to transport butchered fish should be protected so as to prevent fecal or other contamination by birds, insects and other animals or contamination by dust and dirt.
- 6.1.2.11 Cloth should not be used at water outlets or on sliming tables.

6.1.3 Water Supply Specifications

6.1.3.1 The natural water supply intake should be located with the intent of avoiding pollution from shore facilities, marine vessels or processing residuals.

6.1.3.2 There should be no cross-connections between potable and nonpotable water.

Example 1: A cross-connection can occur when the end of a potable water hose is placed below the surface level in a wash tank full of water.

Example 2: A cross-connection occurs when a potable water service pipe is directly connected to prime a non-potable water pump.

- 6.1.3.3 Natural water which comes in contact with the fish being processed should be effectively sanitized unless the water source is currently approved by a federal, state or local agency.
- 6.1.3.4 Natural water may be used for unloading, fluming or refrigerated holding of round fish (a) if it has been effectively sanitized, (b) if it has been approved by a federal, state or local agency, or (c) if the fish are rinsed with effectively sanitized water before they enter the facility.
- 6.1.3.5 Ice should be made from clean water from an approved source. It should be manufactured, handled, stored and used in a sanitary manner. It should not be reused.

6.2 B. RECOMMENDED OPERATING PROCEDURES FOR ALL SHORE-BASED AND FLOATING PROCESSORS

6.2.1 Employee Education

6.2.1.1 All processing workers should be instructed as to the need to handle fish with care at all times. This includes, but is not limited to:

- (a) handle fish gently,
- (b) do not handle by the tail,
- (c) do not throw, step on or in any way abuse the fish, and
- (d) do not handle fish carelessly.

6.2.2 Unloading the Fish

6.2.2.1 All pumps, including the suction end, tubing and discharge end, should be designed and operated so as to avoid physical damage to the fish. All pumps should be cleaned and sanitized daily.

6.2.2.2 The recommended maximum load per brailer or tote is 250 fish or 800 lbs.

6.2.2.3 Elevator buckets and drive mechanisms should be designed and operated so as to avoid physical damage to the fish. They should be cleaned and sanitized after every delivery.

6.2.2.4 Discharge after transport by flumes and conveyor belts or handling on sorting tables should not result in fish being dropped more than 18 inches. This equipment should be cleaned and sanitized at least once a day.

6.2.2.5 Wagons, totes and bins should be designed and operated to facilitate drainage, and should be cleaned and sanitized at least once per day.

6.2.3 Fish Quality Evaluation Procedures - As Received at Processing Facility,

6.2.3.1 Both the intrinsic and extrinsic quality of all fish should be evaluated as the fish is received at the processing plant.

6.2.3.2 Fish should be evaluated by experienced personnel who are familiar with regulatory agency requirements and company grade specifications.

6.2.3.3 Fish should be evaluated according to each company's individual grade standards using the general criteria stated in Paragraph 6.4.1.

- 6.2.2.4 Any fish which are unwholesome (i.e., do not meet minimum standards for human consumption as established by the U.S. Food and Drug Administration) should be discarded.
- 6.2.2.5 Fish of differing quality should be separated, identified and clearly labeled during all phases of processing operations.

6.2.4 General Guidelines for All Processing Operations

- 6.2.4.1 All fish should be kept iced and/or refrigerated before and during processing operations. If ice is used, the fish should be stored in a sufficient amount of finely divided ice to reduce and hold the temperature of the fish to a range of 32° to 35°F (0° to 2°C). If a chilled (CSW) or refrigerated (RSW) sea water system is used, the fish should be maintained at 30° to 35°F (-1° to 2°C). All tanks should be prechilled to 30° to 32°F (-1° to 0°C) before loading fish.
- 6.2.4.2 Raw salmon should be stored no higher than 35 inches (90 cm) deep in clean, well-maintained containers before and during processing operations.
- 6.2.4.3 Any salmon that accidentally fall on the floor should be picked up immediately by the head and nape and rinsed with potable water before further processing.
- 6.2.4.4 Only authorized persons should be allowed in processing areas.
- 6.2.4.5 Effective measures should be taken to exclude pests and pets from the processing areas and to protect against the contamination of fish in or on the premises by all animals, including but not limited to dogs, cats, birds, rodents and insects.
- 6.2.4.6 Cutting boards used at butchering or slining tables which are made of wood or other porous material should be sanitized daily and replaced or reconditioned annually (or more often if necessary) to remove gouged, splintered or otherwise worn surfaces.
- 6.2.4.7 All utensils and surfaces which come in contact with fish should be cleaned as frequently as is necessary to prevent contamination of the fish. Surfaces of equipment used in processing operations which do not come in contact with fish should be cleaned as frequently as necessary to minimize accumulation of dust, dirt, food particles and other debris.
- 6.2.4.8 Fresh fish should be washed, preferably with a low pressure water spray containing 1 ppm chlorine, externally, prior to evisceration, and internally, after evisceration.
- 6.2.4.9 Each facility should have a written cleaning program which includes the use of appropriate detergents and bactericides. The program should provide for intermediate clean-up, sanitizing of equipment at the end of each processing day, and a washdown of

6.3

C. RECOMMENDED OPERATING PROCEDURES
FOR FREEZING PLANTS

6.3.1

Freezing Operations

6.3.1.1

Fish should be clean, correctly identified, gently laid straight on clean freezer trays or racks, and promptly sharp frozen.

6.3.1.2

Fish should not be removed from freezers until the core temperature has been reduced to 5°F (-15°C) or lower.

6.3.1.3

Fish should be gently removed from freezer trays or racks and immediately glazed or shrink-wrapped and/or packaged to prevent dehydration and oxidation.

6.3.2

Glazing Operations

6.3.2.1

Glaze water should be pre-chilled.

6.3.2.2

The fish should be completely submerged in glaze water.

6.3.2.3

Glaze water may contain approved additives and should be changed frequently to prevent microbial build-up.

6.3.2.4

The glaze should be renewed as necessary during cold storage at the facility.

6.3.3

Cold Storage Operations

6.3.3.1

Frozen fish should be stored at 0°F or lower, with minimal temperature fluctuations.

6.3.3.2

Sufficient space should be provided in cold storage rooms to allow adequate circulation of cool air above, below and around all containers.

6.3.3.3

While in control of the processor, owner or bonded warehouse, frozen fish glaze and/or packaging should be checked periodically and replaced as necessary.

6.4

D. FISH QUALITY EVALUATION CRITERIA

6.4.1

Quality Evaluation Criteria for Fresh Fish

6.4.1.1

All fresh fish should exhibit the following characteristics prior to and during processing operations:

- (a) Eyes should be bright, clear and normal in appearance.
- (b) Gills should be normal in appearance and should smell sea-fresh (practically odorless).
- (c) Skin should be shiny and wrinkles should not remain when fish is bent slightly.
- (d) Skin color should be characteristic of fresh fish that is typical of the species, stage of sexual maturity, district from which it was taken, and time of the year it was caught.
- (e) Viscera and eggs should be bright and firm and should smell sea-fresh (practically odorless).
- (f) Belly cavity should have no breaks due to tissue breakdown by enzymatic action.
- (g) Flesh should be resilient when subjected to finger pressure.
- (h) Flesh color should be characteristic of a fresh fish that is typical of the species, district from which it was taken and time of year it was caught.
- (i) Physical shape should be characteristic of the species at its stage of sexual maturity.
- (j) Scale adherence should be reasonably uniform and nearly complete.*
- (k) Odor should be characteristic of fresh fish. There should be no odor indicating decomposition or contamination.

6.4.2

Quality Evaluation Criteria for Frozen Fish

(To be developed in 1983)

*Fish with substantial scale loss should be carefully examined, as this may be an indication of poor handling practices.

6.5

E. PROCESSING FACILITY SANITATION

6.5.1

General Information

6.5.1.1 A suitable periodic cleaning schedule should be established for each plant which will conform, where applicable, with state and federal regulations.

6.5.2

Detergents and Sanitizers*

6.5.2.1 A standard approved detergent should be used to clean fish contact surfaces.

6.5.2.2 A chlorinated alkaline detergent should be used where needed to clean away protein material (fish slime and blood) from fish contact surfaces.

6.5.2.3 Either gaseous chlorine or a hypochlorite compound can be used as a sanitizing agent (see Reference No. 9 for more details on the use of these forms of chlorine).

6.5.2.4 Under no circumstances should sanitizers containing phenols (such as lysol and pinesol) be used in a fish hold or on fish handling surfaces.

*All processors should use USDA approved detergents and sanitizers as listed in USDA Food Safety and Quality Service Miscellaneous Publication #1373, List of Chemical Compounds Authorized For Use Under USDA Inspection and Grading Programs.

Section VII. GENERAL PRODUCT SPECIFICATIONS

7.1 General Information

7.1.1 Any of the five species of Pacific salmon (Oncorhynchus sp.) harvested in Alaska may be offered for sale in any number of styles, including, but not limited to:

- (a) round
- (b) eviscerated, head-on
- (c) eviscerated, head-off
- (d) heads, fins and tail removed
- (e) steaks or portions
- (f) split sides, backbone removed
- (g) fillet, skin-on
- (h) fillet, skin-off
- (i) canned

7.1.2 Variations in method of processing, style of product and physiology or physical characteristics of the fish are all acceptable if identified and agreed upon by the Seller and the Buyer.

7.2 Nomenclature

(To be developed in 1983)

7.3 Product Specifications

(To be developed in 1983)

7.4 Defects Tables

(To be developed in 1983)

RECOMMENDED STATEWIDE QUALITY ASSURANCE
GUIDELINES AND SPECIFICATIONS
FOR PACIFIC SALMON

Recommended References

State and Federal Regulations

1. Title 21 - Food and Drugs, Part 110, Current Good Manufacturing Practice (Sanitation) in the Manufacturing, Processing, Packing or Holding Human Food. U.S. Food and Drug Administration, effective May 26, 1969, recodified March 15, 1977.
2. Alaska Fish Inspection Regulations, State of Alaska, Department of Natural Resources, Division of Agriculture (1979).

General References

1. Net Caught Salmon - Handle with Care (John P. Doyle), Alaska Seas and Coasts, Volume 6, Number 3 (June 1978).
2. Chilled and Refrigerated Sea Water - Easier and Faster Cooling of Fish (Donald E. Kramer), Alaska Seas and Coasts, Volume 8, Number 4 (October-November 1980).
3. Onboard Freezing Systems: Some Options for the Small Vessel (Edward Kolbe), Oregon State University, Extension Marine Advisory Program, Publication SG 67 (July 1969).
4. Draft Code of Practice for Frozen Fish, 11R7, International Institute for Refrigeration (1969).
5. Operating Instructions for RSW Systems on B.C. Salmon Packers (S.W. Roach), Fisheries Research Board of Canada, Vancouver Laboratory (1973).
6. Recommended International Code of Practice for Fresh Fish, FAO/WHO Codex Alimentarius Commission (1976).
7. Code of Practice for Frozen Fish, CX/FFP 77/15 (FAO Fish. Circ. C145, Rev. 1).
8. Recommended International Standard for Canned Pacific Salmon. FAO/WHO Codex Alimentarius Commission (1969).
9. Fishplant Sanitation and Cleaning Procedures (John P. Doyle), University of Alaska, Marine Advisory Bulletin No. 1 (1970).
10. Cleaning and Sanitizing Agents for Seafood Processing Plants (Jong S. Lee), Oregon State University, Extension Marine Advisory Program, Publication SG 21 (1973).

ALASKA SEAFOOD MARKETING INSTITUTE

ALASKA SALMON 1982 RECOVERY PROGRAM

ALASKA SEAFOOD MARKETING INSTITUTE

ALASKA SALMON 1982 RECOVERY PROGRAM

Phase One - The Dilemma

- * Separate facts from rumor in U.S. and Europe via timely consumer research and trade contact
- * Establish primary source of coordinating reception of facts and preparing issue-oriented materials
- * Isolate the problem area(s)
- * Work closely with qualified government representatives
- * Establish a single "voice" (or source, might involve more than one individual) for the industry on all issues
- * Develop and issue a "position paper" giving information on the problem and outlining what positive steps have been taken to be included in a "fact kit"

Phase Two - The Recovery

- * Launch intensive trade and consumer publicity program
 - \$10 million campaign in U.S. with 25% of budget going to European promotion. Promotion emphasizes product and sweepstakes contest not botulism issue
 - Launch U.S. consumer and trade canned salmon sweepstakes promotion
 - Develop aggressive fresh/frozen salmon promotion
 - Public relations program which will include personal contact with nation's top national food store chains; personally visit leading food editors; select key canned salmon markets for consumer food store taste testing; expand marketing publicity on product attributes via TV, radio, newspaper and magazine interviews

CANNED SALMON PROPOSED EMERGENCY BUDGET

	<u>U.S.</u>	<u>European</u>
1. Research	\$ 75,000	\$ 25,000
2. T.V. (Network)	3,000,000	1,000,000
3. Radio (Network)	1,650,000	500,000
4. Newspaper	1,275,000	425,000
5. Consumer P.R.	225,000	75,000
6. Trade P.R./Merchandising	300,000	100,000
7. Trade Advertising	375,000	125,000
8. Merchandising Materials	150,000	50,000
9. Direct Mail	150,000	50,000
10. Production/Fees	<u>375,000</u>	<u>125,000</u>
SUBTOTAL:	\$ 7,575,000	\$ 2,525,000
GRAND TOTAL:	\$ 10,100,000	

ALASKA SALMON RECOVERY: Research Projects

Projects

The salmon botulism crisis occurred at the same time the Alaska Seafood Marketing Institute was conducting baseline quantitative research in five key national canned salmon markets. This quantitative research has assisted in developing a clear focus as to our existing and potential canned salmon consumer. The demographic and psychographic information derived from this research effort is being incorporated into all media and promotional planning for canned salmon.

It has been recommended that \$100,000 be earmarked for consumer attitudinal research relating to the botulism problem through 1982 in major U.S. and European markets.

Rationale

A "fast facts" three-minute telephone questioning approach would contribute to an ongoing measurement of the consumer awareness and concern over the problem as well as the effectiveness of the campaign.

ALASKA SALMON RECOVERY: U. S. Consumer Media Plan

OBJECTIVES

Target information will be obtained from the recent GMA research study when made available.

1. To alleviate the negative consumer reaction caused by recent crisis in the canned salmon industry.
2. To build maximum awareness of canned salmon among prime potential customers.
3. To stimulate product trial.

STRATEGY

1. Network TV is recommended as the primary media vehicle to provide national coverage.
2. Radio is recommended to provide additional frequency against the target audience.
3. Newspaper ads will provide additional coverage and frequency in key markets where research shows sales potential and/or consumer awareness of problem is greatest.
4. Media dollars will be allocated as follows:

<u>Media</u>	<u>Dollars Allocated</u>	<u>% Total Dollars</u>
Network TV	\$ 3,000,000	50.0%
Radio	1,650,000	28.0%
Newspaper	1,275,000	22.0%
	\$ 5,925,000	100.0%

RATIONALE

1. Network TV offers the most total national coverage of any media as well as the highest reach capability against the target.
2. Radio allows us to build frequency and concentrate media dollars against the active listener by selecting only those station formats and programs that have a high concentration of our target audience. An example might be Paul Harvey.

ALASKA SALMON RECOVERY: Consumer Publicity

The objectives for the proposed consumer emergency program are:

1. To reestablish positive consumer awareness of canned salmon from Alaska.
2. To restore consumer confidence in canned salmon from Alaska.
3. To emphasize to consumers the benefits of Alaska canned salmon - quality, flavor, nutrition and convenience.
4. To increase consumer purchase of Alaska canned salmon.
5. To promote consumer confidence, awareness and use of Alaska fresh/frozen salmon.
6. To support and supplement direct advertising and consumer promotion programs.
7. To target demographic and market areas not covered by consumer advertising.

The strategies for the proposed consumer emergency program are:

1. To use a variety of consumer media channels to reach various consumer segments.
2. To stimulate consumers to purchase and use canned and fresh/frozen salmon from Alaska through consumer recipe and nutrition materials.