Chapter VIII Control of Shellfish Harvesting

@.02 Shellstock Time to Temperature Controls



- Each shellfish producing State shall establish time to temperature requirements for the harvesting of all shellstock to ensure that harvesters shall comply with one of the following:
 - (1) The State Vibrio vulnificus Control Plan as outlined in Chapter II. @,04; or
 - (2) The State Vibrio parahaemolyticus Plan as outlined in Chapter II. @.05; or
 - (3) All other shellstock shall comply with the matrix below:

Action	Average Monthly Maximum	Maximum Hours from Exposure to Temperature
Level	Air Temperature	<u>Control</u>
Level 1	<u><60 °F (15 °C)</u>	<u>24 hours</u>
Level 2	<u>60 °F - 80 °F (15 °C - 27 °C)</u>	<u>18 hours</u>
Level 3	<u>>81 °F (>27 °C)</u>	<u>12 hours</u>

- For the purposes of this section, temperature control is defined as the management of the environmental temperature of shellstock by means of ice, mechanical refrigeration or other approved means which is capable of lowering and maintaining the temperature of the shellstock as necessary to comply with Chapter VIII. @.02 A. (1), (2), or (3).
- The Authority shall establish the water or air temperature to be applied to the requirements above for each growing area by averaging the previous five (5) years maximum monthly water or air temperatures.
- For the purpose of time to temperature control, time begins once the first shellstock harvested <u>D.</u> is no longe merged.
- The Authority shall ensure that harvesters document and provide trip records to the initial dealer demonstrating compliance with the time to temperature requirements.
- All Shellstock intended for Wet Storage, Depuration, PHP or "For Shucking Only by a Certified Dealer" shall be subjected to processing within the time periods established in @ .02 A (3) or be placed in temperature control.
- Ocean Quahogs (Arctica islandia) and surf clams (Spisula solidissima) are exempted from this temperature control plan when these products are intended for thermal processing.

Requirements for Harvesters

.01 General.

- A. Each harvester shall have a valid license, and a special license if necessary, in his possession while engaged in shellstock harvesting activities.
- B. Persons who are working in a boat crew under the supervision of a licensed harvester need not have a valid harvester's license.
- C. In the case of riparian or leased land, unless the riparian owner or lessee employs a licensed harvester, the riparian owner or lessee shall be licensed as a harvester prior to harvesting his shellstock. A licensed riparian owner or lessee may employ unlicensed harvesters to work his property or lease.

.02 Shellstock Harvesting and Handling.

- A. Harvesters. Any harvester who engages in shellfish packing as defined in this Ordinance shall:
 - (1) Be a dealer; or
 - (2) Pack shellstock for a dealer.
- B. Non-Vessel Harvesting
 - Harvesters shall assure shellstock are harvested, handled, and transported to prevent contamination, deterioration, and decomposition.
- C. Vessels.
 - (1) The operator shall assure that all vessels used to harvest and transport shellstock are properly constructed, operated, and maintained to prevent contamination, deterioration, and decomposition of the shellstock.
 - (a) Decks and storage bins shall be constructed and located to prevent bilge water or polluted overboard water from coming into contact with the shellstock.
 - (b) Bilge pump discharges shall be located so that the discharge shall not contaminate shellstock.
 - (c) Containers used for storing shellstock shall be clean and fabricated from safe materials.
 - (d) Boat decks and storage bins used in the harvest or transport of shellstock for direct marketing shall be:
 - (i) Kept clean with potable water or water from a growing area in the approved classification or in the open status of the conditionally approved classification; and
 - (ii) Provided with effective drainage.
 - (e) Vessels and all other equipment coming in contact with shellstock during handling or transport for relaying or depuration shall be thoroughly cleaned before the vessels or equipment are used to transport or handle shellfish for direct marketing.
 - (f) When necessary, effective coverings shall be provided on harvest boats to protect shellstock from exposure to:
 - (i) Hot sun;
 - (ii) Birds; and
 - (iii) Other adverse conditions.
 - (2) Cats, dogs, and other animals shall not be allowed on vessels.
- D. Disposal of Human Sewage from Vessels.
 - (1) Human sewage shall not be discharged overboard from a vessel used in the harvesting of shellstock, or from vessels which buy shellstock while the vessels are in growing areas.

- (2) The Authority shall educate all licensed harvesters and shellstock dealers concerning the public health significance of discharging human sewage overboard.
- (3) As required by the Authority, in consultation with FDA, an approved marine sanitation device (MSD), portable toilet or other sewage disposal receptacle shall be provided on the vessel to contain human sewage.
- (4) Portable toilets shall:
 - (a) Be used only for the purpose intended;
 - (b) Be secured while on board and located to prevent contamination of shellstock by spillage or leakage;
 - (c) Be emptied only into a sewage disposal system;
 - (d) Be cleaned before being returned to the boat; and
 - (e) Not be cleaned in equipment used for washing or processing food.
- (5) Use of other receptacles for sewage disposal may be approved by the Authority if the receptacles are:
 - (a) Constructed of impervious, cleanable materials and have tight fitting lids; and
 - (b) Meet the requirements in §D.(3).

E. Shellstock Washing.

- (1) Shellstock shall be washed reasonably free of bottom sediments as soon after harvesting as practicable.
- (2) The harvester shall be primarily responsible for washing shellstock.
- (3) If shellstock washing is not feasible at the time of harvest, the dealer shall assume this responsibility.
- (4) Water used for shellstock washing shall be obtained from:
 - (a) A potable water source; or
 - (b) A growing area in the:
 - (i) Approved classification; or
 - (ii) In the open status of the conditionally approved classification.
- (5) If the harvester or dealer elects to use tanks or a recirculating water system to wash shellstock, the shellstock washing activity shall be constructed, operated, and maintained in accordance with Chapter XI.02.A.(3) and Chapter XIII.02.A.(3).

F. Shellstock Identification.

- (1) Each harvester shall affix a tag to each container of shellstock which shall be in place while the shellstock is being transported to a dealer.
- (2) If the shellstock was harvested at more than one location, each container shall be tagged at its growing area.
- (3) When the harvester is also the dealer, the harvester has the option to tag the shellfish with a harvester's tag or a dealer's tag meeting the requirements outlined in X. §05.
- (4) The harvester's tags shall:
 - (a) Be durable, waterproof and sanctioned by the Authority prior to use; and
 - (b) Be at least 13.8 square inches (89.03 cm²) in size.
- (5) The harvester's tag shall contain the following indelible, legible information in the order specified below:
 - (a) The harvesters' identification number as assigned by the Authority;
 - (b) The date of harvest;
 - (c) The most precise identification of the harvest location or aquaculture site as is practicable, including the initials of the state of harvest, and the Authority's designation of the growing area by indexing, administrative or geographic designation. If growing areas have not been indexed by the Authority, then an appropriate geographical or administrative designation must be used (e.g. Long Bay, Decadent County, lease number, bed, or lot number).

- (d) The type and quantity of shellstock; and
- (e) The following statement in bold capitalized type on each tag "THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY OR IS RETAGGED AND THEREAFTER KEPT ON FILE FOR 90 DAYS."
- (6) If the shellstock is removed from the original container, the tag on the new container shall meet the requirements in §.02 F.
- (7) Bulk tagging of a lot of shellstock during transport from harvest area to the dealer facilities.
 - (a) When shellstock are harvested from one harvest area on a single day, multiple containers may be utilized on a wrapped pallet, in a tote, in a net brailer, or other container and the unit tagged with a single tag in accordance with the requirements of §.02 F.
 - (b) In addition to the information required in §.02 F. the unit tag shall also include:
 - (i) A statement that "All shellstock containers in this lot have the same harvest data and area of harvest"; and
 - (ii) Number of individual containers in the unit.
- (8) Bulk Sale of Shellstock. If shellstock are sold in bulk, the harvester or dealer shall provide a transaction record prior to shipment. This transaction record shall contain all the information required in §.02 F. with the addition of the name of the consignee.
- G. Shellstock Temperature Control
 - (1) All harvesters shall comply with the applicable time to temperature requirements of
 - (a) State Vv and Vp Control Plans outlined in Chapter II. @.04 and @.05; or
 - (b) Chapter VIII. @.02 Shellstock Time to Temperature Controls A. (3).
 - (2) All harvesters shall provide trip records to the initial dealer demonstrating compliance with the time to temperature requirements.

NOTE: State *Vv* and *Vp* Control Plans can be accessed on the ISSC web site using the following link: www.issc.org.

.03 Shellstock Temperature Control.

Note: The Authority shall select one of the following options for implementation in its State. The time-temperature matrix for each of the options applies only to the original harvester or harvester/dealer of shellstock for the purposes of handling and transporting shellstock to the first point of processing or packing.

OPTION 1

(Mandatory for confirmed Vibrio vulnificus problem) If the waters of a State have been confirmed as an original source of product associated with two (2) or more-Vibrio vulnificus-illnesses, the Authority shall adopt the following exposure time to temperature controls in the time-temperature matrix below only for shellfish intended to be consumed raw.

A.For the purposes of this section, temperature control is defined as the management of the environmental temperature of shellstock by means of ice, mechanical refrigeration or other approved means which is capable of lowering the temperature of the shellstock and will maintain it at 50 degrees Fahrenheit (10 degrees Centigrade) or less.

Time Temperature Matrix for Vibrio vulnificus:						
Action Level	Water Temperature	Maximum Hours from Exposure to Temperature Control				
Level 1	<65 °F	36 hours				
Level 2	65 °F - 74 °F (18 °C - 23 °C)	14 hours				
Level 3	>74 °F - 84 °F (>23 °C - 28 °C)	12 hours				
Level 4	> 84 °F (>28 °C)	10 hours				

B.The Authority shall establish the water temperature to be applied in the matrix above for each growing area by averaging the previous 5 years maximum monthly water temperatures.

C.The time to refrigeration in the above matrix shall be based upon the first shellstock harvested.

D.During Action Levels 2, 3, and 4, the product shall be shaded.

E.The Authority may approve other measures proposed by the industry to provide controls equivalent to the time-temperature requirements in the above matrix.

F.The Authority may set up a plan that allows for exemption of this option for shellstock that is to be post-harvest processed with an approved post-harvest process in accordance with NSSP Model Ordinance Chapter XVI. The Authority must develop a plan to ensure the security of shellstock harvesting.

G.The Authority shall ensure the dealer has adequate methods in place to demonstrate compliance with the time/temperature matrix.

OPTION 2

If a growing area in the State has been confirmed as an original source of product associated with two (2) or more Vibrio parahaemolyticus illnesses within the past three years, the Authority shall adopt the following exposure time to temperature controls in the time-temperature matrix below or use Option 1. This Vibrio parahaemolyticus control measure applies only to shellfish from the affected growing area(s) which are intended to be consumed raw.

For the purposes of this control measure, identify and define growing areas in the State affected by Vibrio parahaemolyticus based on hydrographic and geographic parameters and other considerations relevant to control of a naturally occurring pathogen.

A.For the purposes of this section, temperature control is defined as the management of the environmental temperature of shellstock by means of ice, mechanical refrigeration or other approved means which is capable of lowering temperature of the shellstock to, and will maintain it at 50 °Fahrenheit (10 °Centigrade) or less.

B.Temperature determinations for application in the time-temperature matrix below shall be based on average monthly maximum air temperatures for defined regions within the state. The average monthly maximum air temperature for each region shall be established by determining the mean daily high temperature for the month in each of the previous five years as reported by the National Weather Service and then averaging the five resulting temperatures. Ocean Quahogs (Arctica islandia) are exempted from this temperature control plan.

C.The Authority may set up a plan that allows for exemption of this option for shellstock that is to be post-harvest treated with an approved post-harvest process in accordance with NSSP Model Ordinance Chapter XVI. The Authority must develop a plan to ensure the security of shellstock harvesting.

D.The Authority shall ensure the dealer has adequate methods in place to demonstrate compliance with the time/temperature matrix.

Time Temperature Matrix for Vibrio parahaemolyticus:							
Action Level	Average Monthly Maximum A	Air Maximum Hours from Exposure to Temperature Control					
Level 1	< 66 °F (18 °C)	36 hours					
Level 2	66 °F - 80 °F (19 °C - 27 °C)	12 hours					
Level 3	≥ 81 °F (≥27 °C)	10 hours					

OPTION 3

For those states that do not have to follow Option 1 or Option 2, the following time/temperature matrix will apply.

A.For the purposes of this section, temperature control is defined as the management of the environmental temperature of shellstock by means of ice, mechanical refrigeration or other approved means which is capable of lowering temperature of the shellstock to, and will maintain it at, 50 °Fahrenheit (10 °Centigrade) or less.

B.Ocean Quahogs (Arctica islandia) and surf clams (Spisula solidissima) are exempted from this temperature control plan when these products are intended for thermal processing.

C.Temperature determinations for application in the time-temperature matrix below shall be based on average monthly maximum air temperatures for defined regions within the state. The average monthly maximum air temperature for each region shall be established by determining the mean daily high temperature for the month in each of the previous five years as reported by the National Weather Service, and then averaging the five resulting temperatures. Ocean Quahogs (Arctica islandia) are exempted from this temperature control plan.

D.The Authority shall ensure the dealer has adequate methods in place to demonstrate compliance with the time/temperature matrix.

Action Level	Average Monthly Maximum Air Lemperature	Maximum Hours from Exposure to Temperature Control
Level 1	<66 °F (18 °C)	36 hours
Level 2	66 °F - 80 °F (19 °C - 27 °C)	24 hours
Level 3	≥ 81 °F (≥27 °C)	20 hours

Chapter IX Transportation

Requirements for the Authority

@.01 General.

A.The Authority shall apply these requirements to all shellfish shipped in interstate commerce.

B.The Authority shall assure that:

(1)Shellfish are transported and maintained in accordance with the requirements of this Chapter; and

(2)Shellfish shipments originate from a dealer.

C.The Authority shall use the temperatures included in the sections below entitled @.02 Shipment Acceptability, @.03 Shipment Rejection, and @.04 Bacteriological Examination of Shellfish Shipments as the initial basis for taking regulatory action against any shellfish shipment in interstate commerce.

D.If an interstate shipment of shellfish is monitored, the monitoring shall take place within 24 hours of the shellfish entering the State.

@.02 Shipment Acceptability.

Shellfish shipments shall be considered acceptable when:

A.Shipments are properly identified with tags and/or labels and shipping documents;

B.Shellstock is alive and cooled to an internal shellstock body temperature of 50° Fahrenheit (10 ° Centigrade) or less;

C.Shucked shellfish and in-shell product are cooled to a temperature of 45° Fahrenheit (7.2 ° Centigrade) or less; and

D.The time temperature indicating device shows that the ambient air temperature has exceeded 45° Fahrenheit (7.2° Centigrade) but the shellstock internal body temperature is 50° Fahrenheit (10° Centigrade) or less; and

E.All other conditions of shipment in this Chapter are met.

Additional Guidance - Section IV Guidance Documents
Chapter II.12 Bacteriological Examination of Shellfish Shipments Decision Tree

@.03 Shipment Rejection.

A.Shellfish shall be rejected when:

(1)Shellfish are not properly identified with tags or shipping documents;

(2)The internal shellstock body temperature exceeds 60°Fahrenheit (15.6 Centigrade) unless the harvest initiation time can be documented and indicates that the time from harvest has not exceeded the requirements in Chapter VIII §@.03;

(3)Shucked shellfish temperature or the internal body temperature of in shell product exceeds 50° Fahrenheit (10° Centigrade); or

(4)The Authority determines that the product is unwholesome or unsafe for human consumption. The Authority shall notify the shipping dealer, the receiving dealer, and the Authority in the State where the shipment originated of the shipment's rejection.

@.04 Bacteriological Examination of Shellfish Shipments.

If the State chooses to sample, the following protocol shall be used.

- A.Bacteriological samples of any shellfish taken for the purpose of rejection of shipments from outof state dealers shall be collected within twenty-four hours of the shellfish entering a State.
- B.Bacteriological examination shall be made of the shellfish shipment if:
 - (1)The internal body temperature of the shellstock exceeds 50° Fahrenheit (10° Centigrade) and is less than or equal to 60° Fahrenheit (15.6° Centigrade) unless the harvest initiation time can be documented and indicates that the time from harvest has not exceeded the requirements in Chapter VIII @.03;
 - (2)The shucked shellfish temperature or the internal body temperature of in shell product exceeds 45° Fahrenheit (7.2° Centigrade) and is less than or equal to 50° Fahrenheit (10° Centigrade);
 - (3)The shipping time exceeds four hours and there is no temperature recording device or the recording device is inoperative; or
 - (4)The Authority determines it is necessary.

Requirements for the Harvester/Dealer

.01 Trucks or Other Vehicles Used to Transport Shellstock to the Original Dealer.

- A. The harvester or dealer who transports shellstock from the harvester to the ofiginal dealer, shall assure that all trucks or conveyance used to transport shellstock are properly constructed, operated, and maintained to prevent contamination, deterioration, and decomposition.
- B. Storage bins on trucks or other vehicles used in the transport of shellstock for direct marketing shall be:
 - (1) Kept clean with potable water or water from an approved area or conditionally approved area in the open status; and
 - (2) Provided with effective drainage.
- C. Shellstock shall be transported in adequately refrigerated trucks when the shellstock have been previously refrigerated or when ambient air temperature and time of travel are such that unacceptable bacterial growth or deterioration may occur. When transporting shellstock within the applicable time to temperature controls the temperature inside the conveyance or truck shall not exceed the ambient air temperatures when the ambient air temperatures is above 50° Fahrenheit (10° Centigrade).
- D. Prechilling trucks or other vehicles shall be required when ambient air temperatures are such that unacceptable bacterial growth or deterioration may occur.
- **DE**. When mechanical refrigeration units are used, the units shall be:
 - (1) Equipped with automatic controls; and
 - (2) Capable of mMaintaineding the at an ambient air temperature necessary to comply with .01 C. above, in the storage area at temperatures of 45° Fahrenheit (7.2° Centigrade) or less.
- **EF.** Any ice used to cool shellstock during transport shall meet the requirements of Chapter XI.02A.(2).
- **EG**. Cats, dogs, and other animals shall not be allowed in any part of the truck or other vehicle where shellstock is stored.

.02 Receiving Shellfish

- A. The dealer shall reject or discard any shellfish shipments which:
 - (1)Do not originate from a licensed harvester or dealer; and/or
 - (2) Are unwholesome, inadequately protected, or whose source cannot be identified.
- B.Transportation agents or common carriers used by a dealer are not required to be certified. C.The dealer shall:

- (1)Inspect incoming shellfish shipments to assure that the shipments are received under the conditions required in this Chapter;
- (2)Place shellstock under temperature control within 2 hours after receipt from the harvester, or when the dealer is also the harvester, when shellstock reaches the dealer's facility;
- (3)Ensure that shellstock are not permitted to remain without ice, mechanical refrigeration, or other approved means of lowering the internal body temperature of the shellstock to, or maintaining it at, 50° Fahrenheit (10° Centigrade) or less for more than 2 hours at points of transfer such as loading docks;
- (4)Ensure that shucked shellfish and in-shell product are not permitted to remain without ice, mechanical refrigeration, or other approved means of maintaining shellfish temperature at 45° Fahrenheit (7.2° Centigrade) or less; and
- (5)Ensure that frozen shellfish remain frozen.
- D.For the purpose of this section, temperature control is defined as the management of the environmental temperature of the shellstock by means of ice, mechanical refrigeration or other means approved by the Authority.

.032 Transportation Containers. Trucks or Other Vehicles Used to Transport Shellstock from Dealer to Dealer

- A. Shellfish dealers shall ensure that aAll containers used to transport shellstock shall be:
 - (1) Constructed to allow for easy cleaning; and
 - (2) Operated and maintained to prevent product contamination.
- B. Shellfish dealers shall ensure that aAll containers shall be cleaned with:
 - (1) Potable water; and
 - (2) Detergents, sanitizers, and other supplies acceptable for food contact surfaces.

.043 Cargo Protection From Cross Contamination.

- A. All containers used for storing shellfish shall be clean and fabricated from safe materials.
- B. Shellfish Cargo Only:
 - (1) The entire cargo shall consist of shellfish products only.
 - (2) Except for bulk shipments, shellstock shipments shall be shipped on pallets.
 - (3) In-shell product shipments shall be shipped on pallets.
 - (4) If the conveyance does not have a channeled floor, pallets shall be used for all shellfish.
- C. Mixed Cargoes. Shellfish shall be shipped as part of a mixed cargo of seafood or other food product only when:
 - (1) Shellfish products are protected from contamination by the other cargo;
 - (2) All cargo is placed on pallets; and
 - (3) No other cargo is placed on or above the shellfish unless all cargo is packed in sealed, crush resistant, waterproof containers.
- D. Ice. Any ice used to cool shellfish shall meet the requirements of Chapter XI. 02 A. (2).

.054. Shipping Temperatures Times.

- A. Shellfish dealers shall ship shellstock
 - (1) Adequately iced; or
 - (2) In a conveyance pre-chilled at or below 45°F (7.2°C) ambient air temperature.

.05 Transportation Records

All shipments of shellstock shall be accompanied with documentation indicating that at the time of shipment all shipping containers comply with the requirements of Chapter IX. .02, .03, and .04.

A.Shipping Time is No More Than Four Hours.

- (1) When the shipping time is four hours or less, the dealer shall ship all shellfish:
 - (a)Well iced; or
 - (b)Using other acceptable means of refrigeration.
- (2)When mechanical refrigeration units are used, the units shall be equipped with automatic controls and shall be capable of maintaining the ambient air in the storage area at temperatures of 45° Fahrenheit (7.2°Centigrade) or less.
- (3) The dealer shall not be required to provide thermal recorders during shipment.
- (4)Lack of ice or other acceptable types of refrigeration shall be considered an unsatisfactory shipping condition.

B.Shipping Time is Greater Than Four Hours.

- (1)When the shipping time is greater than four hours, the dealer shall ship all shellfish in:
 - (a)Mechanically refrigerated conveyances which are equipped with automatic controls and capable of maintaining the ambient air in the storage area at temperatures of 45° Fahrenheit (7.2° Centigrade) or less; or
 - (b)Containers with an internal ambient air temperature maintained at or below temperatures of 45° Fahrenheit (7.2° Centigrade) or less.
- (2)Unless the dealer has an approved HACCP plan with an alternate means of monitoring time-temperature, the initial dealer shall assure that a suitable time-temperature recording device accompanies each shipment of shellfish.
- (3)The initial dealer shall note the date and time on the temperature indicating device, if appropriate.
- (4)Each receiving dealer shall write the date and time on the temperature-indicating device, if appropriate, when the shipment is received and the doors of the conveyance or the containers are opened.
- (5)The final receiving dealer shall keep the time temperature recording chart or other record of time and temperature in his files and shall make it available to the Authority upon request.
- (6)An inoperative temperature indicating device shall be considered as no recording device.

C.Shellfish dealers shall ship shellstock:

- (1) Harvested under the requirements of a State Vv or Vp Control Plan.
 - (a) Adequately iced; or
 - (b)In a conveyance at or below 45° Fahrenheit (7.2° Centigrade) ambient air temperature; and (c)At an internal temperature as required of the initial dealer.
- (2)Harvested under the requirements of Option 3 in a conveyance that has been pre-chilled to 45° Fahrenheit (7.2° Centigrade).

NOTE: Include record requirements for above. Shellfish dealers shall provide and maintain records demonstrating compliance with shipping temperature requirements

D.Shipping Time is No More Than Four Hours.

- (1)When the shipping time is four hours or less, the dealer shall ship all shellfish:
 - (a)Well iced; or
 - (b) Using other acceptable means of refrigeration.
- (2)When mechanical refrigeration units are used, the units shall be equipped with automatic controls and shall be capable of maintaining the ambient air in the storage area at temperatures of 45° Fahrenheit (7.2°Centigrade) or less.
- (3) The dealer shall not be required to provide thermal recorders during shipment.

- (4)Lack of ice or other acceptable types of refrigeration shall be considered an unsatisfactory shipping condition.
- E.Shipping Time is Greater Than Four Hours.
 - (1) When the shipping time is greater than four hours, the dealer shall ship all shellfish in:
 - (a)Mechanically refrigerated conveyances which are equipped with automatic controls and capable of maintaining the ambient air in the storage area at temperatures of 45° Fahrenheit (7.2° Centigrade) or less; or
 - (b)Containers with an internal ambient air temperature maintained at or below temperatures of 45° Fahrenheit (7.2° Centigrade) or less.
 - (2)Unless the dealer has an approved HACCP plan with an alternate means of monitoring time-temperature, the initial dealer shall assure that a suitable time temperature recording device accompanies each shipment of shellfish.
 - (3)The initial dealer shall note the date and time on the temperature indicating device, if appropriate.
 - (4)Each receiving dealer shall write the date and time on the temperature indicating device, if appropriate, when the shipment is received and the doors of the conveyance or the containers are opened.
 - (5)The final receiving dealer shall keep the time temperature recording chart or other record of time and temperature in his files and shall make it available to the Authority upon request.
 - (6)An inoperative temperature indicating device shall be considered as no recording device.

Chapter XI Shucking and Packing

Requirements for the Authority.

[Note: The Authority must meet the requirements of this section even if the Authority does not formally adopt this section in regulation.]

@.01 Heat Shock.

- A. The Authority shall approve the scheduled process for heat shock. The schedule may be developed by the Authority or qualified persons with adequate facilities for conducting the appropriate studies;
- B. The Authority shall assure that the critical factors, which may affect the heat shock process, have been adequately studied and provided for in establishing the process. The critical factors shall include:
 - (1) Type and size of shellfish;
 - (2) Time and temperature of exposure;
 - (3) Type of process;
 - (4) Size of tank, tunnel or retort;
 - (5) Water to shellfish ratios in tanks; and
 - (6) Temperature and pressure monitoring devices;
- C. The Authority shall assure that heat shock process does not:
 - (1) Change the physical and organoleptic properties of the species;
 - (2) Kill the shellfish prior to shucking; and
 - (3) Increase microbial deterioration of the shucked shellfish.
- D. The Authority shall retain records covering all aspects of the establishment of the heat shock process.

Additional Guidance - Section IV Guidance Documents
Chapter II.15 Decision Tree for Shellfish from Non-MOU Countries

Requirements for Dealers.

.01 Critical Control Points.

- A. Receiving Critical Control Point Critical Limits. The dealer shall shuck and pack only:
 - (1) The dealer shall shuck and pack only shellstock obtained from a licensed harvester who has:
 - (a) Harvested the shellstock from an Approved or Conditionally Approved area in the open status as indicated by the tag; and [C]
 - (b) Identified the shellstock with a tag on each container or transaction record on each bulk shipment; or [C]
 - (c) Harvested the shellstock in compliance with the time temperature requirements of Chapter VIII. .01 A. (1), (2), or (3) [C].
 - (2) <u>The dealer shall shuck and pack only</u> shellstock obtained <u>and transported</u> from a dealer other than the original harvester who has:
 - (a) Shipped the shellstock a<u>A</u>dequately iced or in a conveyance at or below 45°F (7.2°C) ambient air temperature; or 50°F (10°C) internal temperature or less; or in a conveyance capable of lowering the temperature of the shellstock and will maintain it at 50°F (10°C) or less; [C]

- (b) In a conveyance at or below 45°F (7.2°C) ambient air temperature; or Identified the shellstock with a tag on each container or transaction record with each bulk shipment. [C]
- (c) At an 50°F (10°C) internal temperature of 50°F (10°C) or less; or in a conveyance capable of lowering the temperature of the shellstock and will maintain it at 50°F (10°C) or less; [C]
- (3) Should a dealer receive shellstock from the original dealer which does not meet the requirements of A. 2. (a), (b), or (c) above, the dealer shall shuck and pack only (a) shellstock accompanied with a record indicating:
 - (i) that the product was harvested in accordance with Chapter VIII. @.02 A. 3.;
 - (ii) that the shellstock was not cooled to an internal temperature of 50°F (10°C);
 - (iii) the time the shellstock was placed in refrigeration;
 - (iv) the internal temperature of the product at the time of shipment;
 - (v) the time of shipment; and
 - (b) shellstock received at an internal temperature that does not exceed the temperature of the shellstock at the time of shipment as indicated in the shipping record; or
 - (c) shellstock received with a time/temperature recording device indicating that continuous cooling has occurred.
- (34) The dealer shall shuck and pack only in-shell product obtained from a dealer who has:
 - (a) Shipped the in-shell product adequately iced; or in a conveyance at or below 45°F (7.2°C) ambient air temperature; or 45°F (7.2°C) internal temperature or less; and [C]
 - (b) Identified the in-shell product with a tag on each container [C]
- B. Shellstock Storage Critical Control Point Critical Limits. The dealer shall ensure that:
 - (1) If wet storage in artificial bodies of water is practiced, water quality meets the requirements outlined in Chapter X.08; and [C]
 - (2) Once placed under temperature control and until sale to the processor or final consumer, shellstock shall be:
 - (a) Iced; or [C]
 - (b) Placed and stored in a storage area or conveyance maintained at 45° F (7.2° C) or less; and [C]
 - (c) Not permitted to remain without ice, mechanical refrigeration or other approved methods of refrigeration, as required in §B (1) or §B (2) for more than 2 hours at points of <u>processing or</u> transfer such as loading docks. [C]

 (Should the ambient air temperature exceed 70°F (21.1°C), the maximum time allowed at points of processing or transfer shall not exceed thirty (30) minutes.)
- C. In-shell Product Storage Critical Control Point Critical Limits. The dealer shall ensure that in-shell product shall be:
 - (1) Iced; or **[C]**
 - (2) Placed and stored in a storage area or conveyance maintained at 45°F (7.2°C) or less. [C]
- D. Processing Critical Control Point Critical Limits. The dealer shall ensure that:
 - (1) For shellstock which has not been refrigerated prior to shucking, shucked meats are chilled to an internal temperature of 45° F (7.2° C) or less within three hours of shucking. **[C]**
 - (2) For shellstock refrigerated prior to shucking, shucked meats are chilled to an internal temperature of 45° F (7.2° C) or less within four hours of removal from refrigeration. [C]
 - (3) If heat shock is used, once heat shocked shellstock is shucked, the shucked shellfish meats shall be cooled to 45° F (7.2° C) or less within two hours after the heat shock process. **[C]**
 - (4) When heat shock shellstock are cooled and held under refrigeration for later shucking, the heat shocked shellstock shall be cooled to an internal temperature of 45° F (7.2° C) within two hours from time of heat shock. [C]

- (5) For in-shell product the internal temperature of meats does not exceed 45°F (7.2°C) for more than 2 hours during processing. [C]
- E. Shucked Meat Storage Critical Control Point Critical Limit. The dealer shall store shucked and packed shellfish in covered containers at an ambient temperature of 45° F (7.2° C) or less or covered with ice. [C]
- F. Shellstock Shipping Critical Control Point.
 - (1) The dealer shall ensure that Shellstock that is received bearing a restricted use tag shall only be shipped to a certified dealer and shall include specific language detailing the intended use of the shellstock.

Chapter XIII Shellstock Shipping

Exceptions. Shellstock Shippers are not required to pack shellstock in a building that complies with Sections .02 and .03 of this chapter when the Authority has determined that a shellstock shipper's practices and conditions do not warrant requiring shellstock to be packed in a building.

.01 Critical Control Points.

- A. Receiving Critical Control Point Critical Limits. The dealer shall ship or repack only:
 - (1) <u>The dealer shall ship or repack only</u> shellstock obtained from a licensed harvester who has:
 - (a) Harvested the shellstock from an Approved or Conditionally Approved area in the open status as identified by the tag; and [C]
 - (b) Identified the shellstock with a tag on each container or transaction record on each bulk shipment or [C]
 - (c) Harvested the lstock in compliance with the time temperature requirements of Chapter VIII. .01 A. (1), (2), or (3) [C].
 - (2) <u>The dealer shall ship or repack only</u> shellstock obtained <u>and transported</u> from a dealer other than the original harvester who has:
 - (a) Shipped the shellstock a dequately iced, or in a conveyance at or below 45°F (7. 2°C) ambient air temperature or 50°F (10°) internal temperature or less; or in a conveyance capable of lowering the temperature of the shellstock and will maintain it at 50°F (10°) or less [C]; and
 - (b) <u>In a conveyance at or below 45°F (7.2°C) ambient air temperature; or Identified the shellstock with a tag on each container.</u> [C]
 - (c) At an internal temperature of 50°F (10°C) or less. [C]
 - (3) Should a dealer receive shellstock from the original dealer which does not meet the requirements of A. 2. (a), (b), or (c) above, the shellstock must be:
 - (a) accompanied with a record indicating:
 - (i) that the product was harvested in accordance with Chapter VIII. @.02 A. 3.;
 - (ii) that the shellstock was not cooled to an internal temperature of 50°F (10°C);
 - (iii) the time the shellstock was placed in refrigeration;
 - (iv) the internal temperature of the product at the time of shipment;
 - (v) the time of shipment; and
 - (b) received at an internal temperature that does not exceed the temperature of the shellstock at the time of shipment as indicated in the shipping record; or
 - (c) shellstock received with a time/temperature recording device indicating that continuous cooling has occurred.
 - (4) The dealer shall ship or repack only in-shell product obtained from a dealer who has;
 - (c) Shipped the in-shell product adequately iced; or in a conveyance or at or below 45°F (7.2°C) ambient air temperature; or 45°F (7.2°C) internal temperate or less; and [C]
 - (d) Identified the in-shell product with a tag on each container. [C]
- B. Shellstock Storage Critical Control Point Critical Limits. The dealer shall ensure that:
 - (1) If wet storage in artificial bodies of water is practiced, water quality meets the requirements outlined in Chapter X.08; and [C]
 - (2) Once placed under temperature control and until sale to the processor or final consumer, shellstock shall be:
 - (a) Iced; or [C]
 - (b) Placed in a storage area or conveyance maintained at 45° F (7.2° C) or less; and [C]
 - (c) Not permitted to remain without ice, mechanical refrigeration or other approved methods of refrigeration, as required in §B (1) or §B (2) for more than 2 hours at points of <u>processing</u> or transfer such as loading docks. [C]

- (Should the ambient air temperature exceed 70°F (21.1°C), the maximum time allowed at points of processing or transfer shall not exceed thirty (3 = inutes.)
- (3) All oysters harvested under State *Vibrio* Control Plans and intended for raw consumption shall meet the following temperature requirements:
 - (a) Cooled to an internal temperature of 55°F (12.7°C) within the time periods outlined in the State *Vv* Control Plans. [C]
 - (b) Cooled to an internal temperature of 50°F (10°C) within the time periods outlined in the State *Vp* Control Plans. Shellstock cooled to an internal temperature of 55°F (12.7°C) to comply with a Vv Control Plan is considered in compliance with this requirement [C]
- (4) All other shellstock obtained from a licensed harvester and intended for raw consumption shall be placed in a storage area or conveyance pre-chilled or maintained to 45°F (7.2°C) or less within two (2) hours of receipt[C] and cooled to an internal temperature of 50°F (10°C) within ten (10) hours.
- (5) Product intended for wet storage, depuration, or Mercenaria Mercenaria which is being cooled utilizing an Authority approved tempering plan are exempt from the requirement listed above in .01 B. (4).
- C. In-shell Product Storage Critical Control Point Critical Limits. The dealer shall ensure that in-shell product shall be:
 - (1) Iced; or **[C]**
 - (2) Placed and stored in a storage area or conveyance maintained at 45°F (7.2°C) or less. [C]
- D. Shellstock Shipping Critical Control Point <u>— The dealer shall ensure that</u>
 - (1) Shellstock that is received bearing a restricted use tag shall only be shipped to a certified dealer and shall include specific language detailing the intended use of the shellstock.
 - (2) All shellstock is cooled to the internal temperatures outlined in .01 B. 3. and 4. prior to shipment. Should the original dealer ship shellstock which has been harvested in accordance with Chapter VIII. @.02 A. 3. prior to achieving the internal temperature of 50°F (10°C), the shipment shall be accompanied with a record indicating:
 - (a) that the product was harvested in accordance with Chapter VIII. @.02 A. 3.;
 - (b) that the shellstock was not cooled to an internal temperature of $50^{\circ}F$ ($10^{\circ}C$);
 - (c) the time the shellstock was placed in refrigeration;
 - (d) the internal temperature of the product at the time of shipment; and
 - (e) the time of shipment.

Chapter XIV Reshipping

Exceptions. Reshippers are not required to comply with the building requirements in Sections .02 and .03 of this chapter when the Authority has determined that a reshipper's practices and conditions do not warrant requiring a building.

.01 Critical Control Points.

- A. Receiving Critical Control Point Critical Limits. The dealer shall reship only shellfish which originated and was transported from a dealer:
 - (1)Originated from a dealer other than the original harvester who has:
 - (a)(1) Shipped the shellstock aAdequately iced or; [C] or in a conveyance at or below 45°F (7.2°C) ambient air temperature; or 50°F (10°C) internal temperature or less; or in a conveyance capable of lowering the temperature of the shellstock and will maintain it at 50°F (10°C) or less; [C]; and/or
 - (2) In a conveyance at or below 45°F (7.2°C) ambient air temperature; or [C]
 - (3) At an internal temperature of 50°F (10°C) or less. [C]
 - (a)Shipped the shucked shellfish and/or in shell product iced or in a conveyance at or below 45°F (7.2°C) ambient air temperature; [C] and
 - (b) Identified the shellstock with a tag as outlined in Chapter X.05, identified the in shell product with a tag as outlined in Chapter X .07, and/or identified the shucked shellfish with a label as outlined in Chapter X.06. [C]
 - (4) Should a dealer receive shellstock from the original dealer which does not meet the requirements of A. 1., 2., or 3. above, the shellstock must be:
 - (a) accompanied with a record indicating:
 - (i) that the product was harvested in accordance with Chapter VIII. @.02 A. 3.;
 - (ii) that the shellstock was not cooled to an internal temperature of 50°F (10°C);
 - (iii) the time the shellstock was placed in refrigeration;
 - (iv) the internal temperature of the product at the time of shipment;
 - (v) the time of shipment; and
 - (b) received at an internal temperature that does not exceed the temperature of the shellstock at the time of shipment as indicated in the shipping record; or
 - (c) shellstock received with a time/temperature recording device indicating that continuous cooling has occurred.
- B. Shellstock Storage Critical Control Point Critical Limits. The dealer shall ensure that once placed under temperature control and until sale to the processor or final consumer, shellstock shall be:
 - (1) Iced; or **[C]**
 - (2) Placed in a storage area or conveyance maintained at 45 °F (7.2 °C) or less; and [C]
 - (3) Not permitted to remain without ice, mechanical refrigeration, or other approved means of refrigeration for more than 2 hours at points of <u>processing or</u> transfer such as loading docks. **[C]**
 - (Should the ambient air temperature exceed 70°F (21.1°C), the maximum time allowed at points of processing or transfer shall not exceed thirty (30) minutes.)
- C. In-shell Product Storage Critical Control Point Critical Limits. The dealer shall ensure that in-shell product shall be:
 - (1) Iced; or **[C]**
 - (2) Placed and stored in a storage area or conveyance maintained at 45°F (7.2°C) or less. [C]
- D. Shucked Meat Storage Critical Control Point Critical Limit. The dealer shall store shucked shellfish at an ambient temperature of 45 ° F (7.2 ° C) or less.[C]
- E. Shellstock Shipping Critical Control Point
 - (1) Shellstock that is received bearing a restricted use tag shall only be shipped to a certified dealer and shall include specific language detailing the intended use of the shellstock.