**Section 735.70 Processes and Controls**

a) Raw Material:

1) Fish, fish products, and ingredients shall be from sources approved by the Illinois Department of Public Health and shall have been protected from contamination and spoilage at all times during handling, packaging and storage and while in transit to the processing plant.

2) All fish shall be adequately refrigerated from the time of catch to the time of processing.

3) Ice shall be obtained from a source approved by the Illinois Department of Public Health and shall be stored and handled in a clean manner and used only once.

4) All fish, fish products, and ingredients in the fish processing establishment shall be wholesome and free of spoilage and adulteration, and shall not be misbranded.

b) Carriers: All carriers delivering raw materials and/or ingredients shall be subject to inspection prior to acceptance of the materials to determine if any toxic materials such as pesticides or other poisons have been carried with the fish or ingredients, to check for the presence of insects or rodents or any other type of contamination which may be caused by the carrier and which would render the fish or ingredients unfit for human consumption.

c) Potable Ice: Ice shall be made from water of potable quality and manufactured, handled, stored and used so as to protect it from contamination.

d) Cross Contamination: Only such poisonous and toxic materials as are required to maintain sanitary conditions and for sanitization purposes may be used or stored in fish processing establishments. Poisonous and toxic materials shall be identified, and shall be used only in such a manner and under such conditions as will not contaminate fish, fish products, or ingredients, or constitute a hazard to employees or customers.

e) Product Handling: Fish, fish products, and ingredients shall be processed, stored, packaged, transported and displayed for sale in such a manner and under such conditions as to be protected from unnecessary handling and against sources of contamination, such as dust, vermin, unclean utensils, and work surfaces, coughs and sneezes, flooding drainage and overhead leaking.

f) Proper Processing (hot-process smoked or hot-process smoked-flavored fish):

1) Raw Materials.

A) Fresh fish received shall be inspected and adequately washed before processing. Only sound, wholesome fish free from adulteration and organoleptically detectable spoilage shall be processed.

B) Every lot of fish that has been partially processed in another plant, including frozen fish, shall be adequately inspected, and only clean, wholesome fish shall be processed.

C) Fresh or partially processed fish, except those to be immediately processed, shall be iced or otherwise refrigerated to an internal temperature of 38ºF. or below upon receipt and shall be maintained at that temperature until the fish are to be processed.

D) All fish received in a frozen state shall be either thawed promptly and processed, or stored at a temperature that will maintain it in a frozen state.

2) Defrosting of Frozen Fish.

A) Defrosting shall be carried out in a sanitary manner and by such methods that the wholesomeness of the fish is not adversely affected. Frozen fish shall be defrosted:

i) In air at 45ºF. or below until other than hard frozen; or

ii) In air so that the temperature in any part of the fish does not exceed 45ºF.; or

iii) In a continuous water-overflow thaw tank or spray system in such a manner that the temperature in any part of the fish does not exceed 45ºF.

B) When a thaw tank is used, fish should not remain in the tank longer than one-half hour after they are completely defrosted.

C) Fish entering the thaw tanks shall be free of exterior packaging material and substantially free of liner material.

D) After thawing, fish shall be washed thoroughly with a vigorous water spray or a continuous water flow system.

3) Presmoking Operation.

A) Evisceration of fish shall be performed with minimum disturbance of intestinal tract contents. Removal of viscera shall be complete.

B) After the evisceration process, the fish (including the body cavity) shall be thoroughly washed with a vigorous water spray or a continuous waterflow system.

C) All fish shall be brined in a solution that does not exceed 38ºF. or dry-salted at a temperature not to exceed 38ºF. throughout the fish.

D) Hot-process smoked or hot-process smoked-flavored fish shall be brined in such a manner that the final salt (sodium chloride) content of the loin muscle of the finished product, expressed as percent in the water phase of the loin muscle, shall not be less than:

i) 3.5 percent if heat-processed as prescribed under subsection (f)(4)(B)(i) of this Section; or

ii) 5.0 percent if heat-processed as prescribed under subsection (f)(4)(B)(i) of this Section.

iii) The food additive sodium nitrate may be used in combination with salt (NaC1) to aid in inhibiting the outgrowth and toxin formation from Clostridium botulinum type E in the commercial processing of smoked chub in accordance with the following prescribed conditions: The brining procedure is controlled in such a manner that the water phase portion of the edible portion of the finished smoked product has a salt (NaC1) content of not less than 3.5 percent, as measured in the loin muscle, and the sodium nitrite content of the edible portion of the finished smoked product is not less than 100 parts per million and not greater than 200 parts per million, as measured in the loin muscle.

E) Fish shall be rinsed with fresh water after brining.

4) Heating, Cooking, Smoking Operation.

A) A point-sensitive, continuous temperature recording device shall be used to monitor both the internal temperature of the fish and the ambient temperature within the oven. Each recording device record shall be identified as to the specific oven load and date processed.

B) Hot-process smoked or hot-process smoked-flavored fish shall be heated by a controlled heat process that provides a monitoring system positioned in as many strategic locations in the oven as necessary to assure a continuous temperature throughout each fish of:

i) Not less than 180ºF. for a minimum of 30 minutes for hot-process smoked or hot-process smoked-flavored fish which have been brined to contain 3.5 percent water phase salt in the finished product as prescribed in paragraph (f)(3)(D)(i) of this Section, except that smoked chub containing sodium nitrite as provided for in paragraph (f)(3)(D)(iii) of this Section shall be maintained at a continuous temperature throughout each fish of at least 160ºF. for a minimum of 30 minutes.

ii) Not less than 150ºF. for a minimum of 30 minutes for hot-process smoked or hot-process smoked-flavored fish which have been brined to contain 5.0 percent water phase salt in the finished product as prescribed in paragraph (f)(3)(D)(ii) of this Section.

5) Protective Equipment and Facilities.

A) Refrigeration, freezing, and heating equipment and facilities shall be adequately sized and conveniently located. Each such item of equipment and/or facility shall be equipped with an approved temperature indicating and/or recording device which is properly located, installed and utilized.

B) Where necessary to prevent contamination of fish, covers shall be provided for tanks, and containers, including brining and thawing tanks.

C) Facilities shall be provided in each fish dressing, eviscerating, and trimming room for washing the inside and outside of the fish. Such facility or equipment shall be supplied with ample quantities of potable water under sufficient pressure to wash the fish thoroughly and efficiently. Outlets or facilities providing a continuous flow or spray of potable water for the purpose of rinsing hands, and hand-operated items of equipment, or utensils, shall be located within arms' length of persons engaged in the dressing, eviscerating or trimming operations.

D) Freezers and coolers must be maintained in a clean and orderly manner. The raw fish and the final product shall be stored off the floor in separate rooms, and in such a position that the rooms shall be readily accessible for cleaning.

E) Each freezer and cold storage compartment used for the product shall be fitted with at least the following:

i) An automatic control for regulating temperature;

ii) An indicating thermometer so installed as to show accurately the temperature within the compartment;

iii) A recording thermometer so installed as to indicate accurately at all times the temperature within the compartment.

F) Thermometers or other temperature-measuring devices shall have an accuracy of plus or minus 2ºF.

G) Packaging rooms shall be kept scrupulously clean. Raw fish shall never be permitted in smoked fish and smoked fish product cooling, packing or storage rooms. Smoked fish or smoked fish products shall be handled only with clean hands or sanitized rubber or plastic gloves, and such handling shall be kept to a minimum.

H) Personnel changing from raw product areas to processed areas or operations shall thoroughly wash their hands before handling smoked fish or smoked fish products. Every reasonable precaution shall be employed to prevent contamination of smoked fish, smoked fish products, ingredients, and equipment and utensils by raw fish or raw fish products.

I) Smoked fish and smoked fish products shall not be moved through the raw fish rooms or areas, or refuse rooms.

g) Testing (hot-process smoked or hot-process smoked-flavored fish):

1) Microbiological examination of in-line and finished product samples should be conducted with sufficient frequency to assure that processing steps and sanitary procedures are adequate.

2) The finished product shall be analyzed chemically with sufficient frequency to assure that the required salinity is obtained in every fish and that other chemical additives are present at authorized levels.

h) Packaging (hot-process smoked or hot-process smoked-flavored fish):

1) The finished product shall be handled only with clean, sanitized hands, gloves or utensils.

2) Manual manipulation of the finished product shall be kept to a minimum.

3) The finished product shall be cooled to a temperature of 50ºF. or below within 3 hours after cooking and further cooled to a temperature of 38ºF. or below within 12 hours after cooking, and this temperature shall be maintained during all subsequent storage and distribution.

4) The shipping containers, retail packages, and shipping records shall indicate by appropriate labeling the perishable nature of the product and shall specify that the product shall be shipped, stored, and/or held for sale at 38ºF. or below until consumed.

i) Products Coded and Records Retained (hot-process smoked or hot-process smoked-flavored fish): Permanently legible code marks shall be placed on the outer layer of every finished product package and master carton. Such marks shall identify at least the plant where packed, the date of packing, and the oven load. Records shall be so maintained as to provide positive identification

1) of the process procedures used for the manufacture of hot-process smoked or hot-process smoked-flavored fish and

2) of the distribution of the finished product.

j) Product Storage (hot-process smoked or hot-process smoked-flavored fish): Receiving, loading, and shipping docks shall not be simultaneously used for the handling of smoked fish and smoked fish products and for the handling of raw fish or refuse unless the operations are kept separate. Docks or portions thereof, which are used for raw fish or refuse, shall be thoroughly cleaned before being used for handling of smoked fish and smoked fish products.