proposing to allow use of time and temperature limits equivalent to those specified in the proposed requirements. Any such alternate procedures would, however, be difficult to monitor for regulatory purposes. FSIS welcomes comment on this point.

Written Plan for Meeting Time and Temperature Requirements

Establishments would be required to develop, implement, and place on file a written plan for meeting the time and temperature requirements either prescribed in this proposed rule or in alternative procedures developed by a processing authority. The plan would include the establishment's designated control points, i.e., the points within an establishment's operation where temperatures would be measured; monitoring procedures; records to be kept; standards for the control points, including the cooling rate, holding temperature, and shipping temperature; corrective actions to be followed if deviations occur, including a system for separating and identifying noncomplying product; and, when applicable, the name of the processing authority. The plan would be required to be maintained at the establishment for as long as the plan is being used by the establishment. The plan and monitoring records must be made available to Program employees upon request.

Establishments would be required to monitor and record the maximum temperature of a representative number of carcasses and raw meat products periodically during the establishments' operation, as set forth in their written plan for doing so. The frequency of monitoring temperatures in a day's operation by establishments would vary, depending on the size and type of an establishment's operations. Establishments would include in this written plan the control points and the frequency of measuring the temperatures in a day's operation. Establishments would be required to use temperature measuring devices readable and accurate to 2 °F (0.9 °C). The monitoring records would be maintained for up to 6 months after the temperature measurement, or until such time that may otherwise be specified by the Administrator. Program employees would verify the frequency of temperature measurement to ensure that the establishment's written plan is being followed. Inspection personnel would also measure temperatures at various control points and compare these temperatures with those measured and recorded by the establishment.

Effect on Commercial Meat Manufacturing

Because raw poultry is already subject to chilling regulations, it is expected that this proposed regulation primarily will affect meat establishments.

Present commercial meat manufacturing and distribution practices are diverse. Some establishments slaughter animals, prepare raw meats, and process and ship ready-to-eat products. Others may only slaughter and dress animals, debone meat, or prepare raw meats as ingredients for ready-to-eat products. This proposed rule would cover all official establishments that slaughter, receive, store, transport or otherwise handle carcasses and raw meat products.

The following is a brief discussion of present commercial meat manufacturing and distribution operations and how this proposal would affect those operations.

(a) Slaughter establishments. Slaughter establishments receive live animals and produce raw meat. The establishment's task is to remove the animal's hide and viscera in a manner that results in meat with as few bacteria as possible. This task is called "sanitary dressing." After dressing, establishments cool carcasses to retard the multiplication of any pathogenic or spoilage bacteria.

The primary means of cooling is to move the carcass into a cold room where the temperature and air movement reduce carcass temperature. Some establishments use various procedures to enhance carcass cooling. The carcass spray chill method increases the cooling rate through direct heat absorption and enhanced evaporative cooling. The sprayed water directly absorbs some carcass heat on contact then absorbs even more when it evaporates. Spray chilling is also advantageous to the manufacturer in that it reduces the amount of weight lost from the carcass by evaporation. The disadvantage is that the increased surface moisture facilitates multiplication of bacteria.

A related practice is hot-boning, which involves the removal of the meat before the carcass is fully cooled. The advantage of hot-boning is that the meat is reduced to smaller, more easily cooled pieces, and the meat is available for processing sooner than if it were removed only after the carcass is fully cooled. However, hot-boning poses a hazard if exposed warm meat surfaces remain at warm temperatures long enough to allow bacterial multiplication.

This proposal would permit any of these cooling procedures as long as the proposed cooling temperatures and time periods are met.

(b) Shipping and receiving. Slaughter establishments may ship meat food products in several forms, such as carcasses, cuts, manufacturing meat, or ground meat. In the past 20 years, the geographic concentration of raw meat processing has made boxed meat the primary form in which raw meat is shipped. Boxed meat is often shipped in 60-pound containers of boneless manufacturing meat, cuts, primal cuts, or subprimal cuts.

However, establishments still ship carcasses and larger containers of manufacturing meat weighing 500 pounds or more.

Processing establishments
manufacture raw meat products, readyto-eat meat products, or both. Processing
establishments that are not also
slaughter establishments must receive
raw meat products from other
establishments. This proposed rule
would affect such processing
establishments by requiring them to
ensure that raw product received is at
the required internal temperature of 40
°F or below, and to maintain the raw
meat product ingredient at that
temperature in conformance with the
proposed requirements.

This proposed rule would require that establishments cool the carcasses and raw meat products to an internal temperature of 40 °F or below prior to shipping such products to help ensure that, if the products are shipped to other official establishments, the products arrive at the receiving establishments at an internal temperature of 40 °F or below.

The shipping establishment would be required to record the date and time of shipment on the waybill, running slip, conductor's card, shipper's certificate, or any other such papers accompanying a shipment. This is necessary to enable the receiving establishment to determine the number of hours the products have been in shipment.

Compliance with the requirement ends when the raw meat product enters a ready-to-eat process at the establishment or is no longer in the possession or under the control of the establishment. Product in the possession of or under the control of the establishment remains the responsibility of the establishment. Establishments must undertake all reasonable precautions to ensure that such product is maintained as required under the proposed rule, even when it is in a transport vehicle or otherwise not physically at the establishment.