will begin to build the principle of prevention into its inspection program by requiring all meat and poultry establishments to adopt the Hazard Analysis and Critical Control Point (HACCP) approach to producing safe meat and poultry products. FSIS will also take steps to encourage preventive measures on the farm, require preventive controls during transportation, and support State-based HACCP controls at retail.

The purpose of this document is to initiate the rulemaking required to bring about these changes in the FSIS program. This document will also explain these changes in the context of a broad and long-term strategy to improve the safety of meat and poultry products. The safety of any food product can be affected—positively or negatively—at virtually every step in the process of producing the agricultural commodity on the farm, converting the agricultural commodity into a food product through slaughter and other processing, distributing the product to the consumer, and preparing the product for consumption. While this document focuses on changes that are needed within FSIS-inspected establishments, these changes are part of a broader food safety strategy. This strategy addresses each step in the process and takes a long-term approach to building a comprehensive food safety system that works effectively to protect consumers by preventing food safety problems.

To place the regulatory program in context, this document will first describe the origins and history of the FSIS program, the problem of foodborne illness in the United States, and FSIS's food safety objectives and proposed strategy for achieving them.

Origins and History of the FSIS Program

The following historical account briefly describes the purposes and operation of the inspection program from its late-nineteenth century inception through the current efforts to improve the program.

1890-1945

Federal meat inspection legislation dates from 1890, when countries in Europe raised questions about the safety of American beef. Congress gave the U.S. Department of Agriculture (USDA) responsibility for ensuring that exports would meet European requirements and, in 1891, for conducting ante- and postmortem inspection of livestock slaughtered for meat intended for distribution in the United States.

In 1906, the graphic picture of insanitary conditions in meat-packing

establishments described in Upton Sinclair's novel *The Jungle* outraged the U.S. public. Congress responded by passing the Federal Meat Inspection Act (FMIA), one of the first Federal consumer protection measures. It established sanitary standards for slaughter and processing establishments, and mandated antemortem inspection of animals (cattle, hogs, sheep, and goats) and postmortem inspection of every carcass.

It also required the continuous presence of Government inspectors in all establishments that manufactured meat products for commerce. Because the program depended heavily on veterinary skills, it was implemented by USDA's Bureau of Animal Industry which, during that first year, oversaw the inspection of nearly 50 million animals.

The companion Food and Drug Act of 1906 was implemented by a different section of USDA, the Bureau of Chemistry. It covered the safety of all food products except meat and poultry, but it did not require continuous inspection. The Food and Drug Administration (FDA), which now implements the law, was formed in USDA in 1930 and transferred to the Public Health Service in 1940. Meat inspection, which primarily focused on carcass inspection by veterinarians, remained in USDA.

The meat inspection program that developed early in this century used organoleptic methods, based on sight, touch, and smell. The major public health concerns of the time were the potential for transmission of diseases from sick animals to humans and the lack of sanitary conditions for animal slaughter and production of processed products. The purpose of carcass inspection was to keep meat from diseased animals out of the food supply. Federal inspectors under the supervision of veterinarians checked every live animal and every carcass for signs of disease. They also watched for insanitary practices and the use of dangerous preservatives.

In addition to requiring carcass-by-carcass inspection in slaughter establishments, the 1906 meat inspection law provided for continuous USDA inspection of processing operations. Processing, which for the most part consisted of cutting and boning whole carcasses and the production of sausages, ham, and bacon, was usually done in or near the slaughterhouse. Processing was viewed as an extension of slaughter and was conducted by the same FSIS personnel. From the inception of the Program, however, the Agency recognized that, in

processing inspection, the inspector focused on the operation of the overall production line, not on each production unit (in contrast to slaughter inspection, where inspectors focused on each carcass).

The FMIA covered all meat and meat products in interstate commerce. It did not cover poultry. At that time, chickens and turkeys were produced mainly on small farms for personal consumption or sale in the immediate area. They were inspected only by the purchaser.

1946-1975

Developments after World War II had a major impact on the meat and poultry industry. New establishments opened, beginning a surge of growth that continued through the 1950's and 1960's. The market for dressed, readyto-cook poultry expanded rapidly, and both the meat and the poultry industries began turning out many new kinds of processed products. An increasing proportion of the total meat and poultry supply was being processed into hams, sausages, soups, frankfurters, frozen dinners, pizza, and so forth. Between 1946 and 1976, the volume of such products almost quadrupled.

New technology, new ingredients, and specialization added complexity to the once-simple processing industry. Small establishments, many producing solely for intrastate commerce, began producing new products outside the slaughterhouse environment. Processing inspection could no longer be managed as an extension of slaughter inspection.

The growth of the processing sector presented the inspection program with major challenges. First, the skills needed by the Agency called increasingly on the disciplines of food technology and microbiology, along with those of veterinary medicine. The Agency began to recruit and develop more people with the specialized skills necessary to design processing inspection systems.

Second, more inspectors were needed to meet the industry's growing production and geographic expansion. A system of "patrol" inspection assignments, with one inspector visiting several processing establishments daily, was devised to fulfill the statutory requirement for continuous inspection in those establishments.

Third, new technologies made it difficult for consumers to check levels of fat, water, and other ingredients used as fillers, increasing the risk of economic adulteration. As a result, USDA inspectors were increasingly called on to protect consumers in this technically complex area. Controlling the use of certain vegetable proteins as