Revised: February 2004

GUIDANCE PROCEDURES FOR NOTIFICATION AND PROTOCOL SUBMISSION OF NEW TECHNOLOGY

The Food Safety and Inspection Service (FSIS) is implementing new procedures for meat and poultry establishments, egg product plants, and companies that manufacture and sell technology to official establishments. The Agency has moved away from the "pre-approval" approach to one that facilitates the use of beneficial technologies that can enhance food safety while holding establishments accountable for ensuring that new technologies are introduced without compromising (1) the Agency's ability to ensure protection of the public health or (2) the safety of FSIS inspectors. Although FSIS no longer approves technologies, a new technology would be of regulatory interest to FSIS if its use could affect product safety, inspection procedures, inspection program personnel safety, or require changing existing regulations.

Application of new technology can help protect product from physical, chemical, or biological hazards, reduce or eliminate such hazards on product, and improve product quality. Conversely, the use of an inappropriate technology can result in a product that could endanger public health. Establishments planning to use a new technology must accept responsibility for ensuring the continued safety of their workers, their products, and the environment, as well as providing the information necessary for FSIS to examine the impact of the new technology on inspection procedures and inspection program personnel safety.

Under the new procedures official establishments notify FSIS in writing of their intention to use a new technology. Notification is necessary if FSIS is to effectively conduct its inspection activities. In addition, notification will support FSIS activities designed to:

- Promote an awareness of new technologies in official establishments.
- Provide a fair and uniform assessment process on new technologies for the meat, poultry, and egg industries.
- Respond to questions regarding the use of new technologies.
- Encourage the development and utilization of new technologies, and
- Be cognizant of the need to reexamine current regulations.

If FSIS determines that a new technology could affect product safety, the safety of inspection program personnel, their inspection activities, or affect existing regulations, it will advise the official establishment that an in-depth pre-use review is necessary.

FSIS is aware that problems may arise when inspection program personnel are not informed about a new technology that an official establishment or plant is using or plans to use. Therefore, in addition to establishing new, flexible procedures to actively encourage the development and use of new technologies in meat, poultry, and egg products establishments, FSIS is taking steps to improve communications with inspection program personnel in the field concerning new technologies. The new procedures provide a central location in the Agency to review and evaluate new technology, instead of having program inspection personnel address individual instances and questions as they arise in official establishments. These procedures are designed to eliminate unnecessary delays, to keep inspection personnel informed of the use of new technologies, and to establish uniform acceptance criteria to facilitate the application of new technology.

The Agency has revised FSIS Directive 10,700.1, "Guidelines For Preparing Experimental Protocols for In-plant Trials of New Technologies and Procedures," to include provisions to inform inspection program personnel about the new procedures that will be used to notify them about new technologies that may be used in official establishments. Reports on the status of new technology notification and protocols received by the New Technology Staff (NTS) will be sent to inspection program personnel on a regular basis. One of the benefits of the new procedures is that inspection program personnel will know the status of new technologies that official establishments are using or planning to use.

The guidance provided in this document is intended to assist establishments to determine whether they need to notify FSIS of new technologies that they propose to use in meat, poultry, or egg product establishments and when to submit protocols for in-plant testing of new technologies.

The guide consists of twelve sections:

Section I. Definitions,
Section II. Identifying New Technology,
Section III. Notification,
Section IV. Notification Process,
Section V. Notification Review Process,
Section VI. Protocols,
Section VII. Protocol Submission Process,
Section VIII. Protocol Review Process,
Section IX. Verification Process,
Section X. Evaluation Process,
Section XI. Multi-plant Trials and Data Submission and,
Section XII. Voluntary Information Checklist for Establishments Completing New Technology Protocols.

This material will be continually updated and made available through the FSIS Internet web page located at http://www.fsis.usda.gov. Copies of this guidance are available from

the Office of Policy and Program Development (OPPD), New Technology Staff (NTS). Comments regarding this document should be directed to NTS.

Send Notifications/Protocols to:

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Section I. Definitions

*For the purpose of FSIS, **new technology** is defined as new, or new applications of, equipment, substances, methods, processes, or procedures affecting the slaughter of livestock or poultry or processing of meat, poultry, or egg products.*

***New technology that affects product safety** is defined as one that might have a beneficial or adverse effect on the safety of the food product.*

*A **notification** is defined as a document written to inform the Food Safety and Inspection Service that a new technology is going to be tested or used in an establishment.*

*A **protocol** is defined as a detailed plan of a scientific experiment, treatment, or procedure that is submitted to the Food Safety and Inspection Service if the scientific experiment, treatment, or procedure affects inspection procedures, the safety of Federal inspection program personnel, or requires a change to the Agency's regulations.*

Section II. Identifying New Technology

Official establishments that are interested in introducing new technology into their operations should pursue the introduction in an appropriate manner. Failure to do so is likely to create delays in the introduction of the new technology and interruption in establishment or plant operations.

Firms should first decide whether the definition of new technology covers the technology that they intend to use or sell to determine if the new procedures apply. For example, the definition of new technology includes new antimicrobials and new uses of antimicrobials. Therefore, the new technology procedures apply to the use of a new antimicrobial or a new application of an antimicrobial that has been in use.

Firms that are interested in using or selling a new technology should submit documentation to the FSIS New Technology Staff (see address on page 3), describing the operation and purpose of the new technology. The document should explain why the new technology will not:

- adversely affect the safety of the product,
- jeopardize the safety of the Federal inspection program personnel,
- interfere with the inspection procedures, or
- require a change to the Agency’s regulations.

If the intended new technology will have an effect on any of the four areas of regulatory interest to FSIS, then the establishment or plant will need to notify the Agency either by notification or by protocol.

1. Firms should submit a notification about technologies that affect product safety. Firms that recognize that the use of a technology will likely raise questions about its effects on product safety may elect to submit a protocol instead of first submitting a notification.

2. To avoid delay, firms should submit a protocol on technology that affects Agency regulations, inspection procedures, or the safety of Federal inspection personnel.

3. An establishment or plant that is unsure whether it should submit a protocol can first submit a notification, and the Agency will determine whether a protocol is necessary.

The following examples are provided as a guide to distinguish when a technology would be considered new, when notification is necessary, or when a protocol will be required.

- ***Examples of New Technology for which Notification is likely all that will be necessary***

  - New technologies that could affect product safety

    High pressure sterilization equipment

    Although FSIS approval of equipment is no longer required, high pressure sterilization equipment could affect product safety. Therefore, FSIS should be notified before an establishment begins to use the technology. High-pressure sterilization is used for the elimination of spores in various processed foods. While other government agencies have approved high-pressure sterilization for use, the use of this sterilization technique on processing meat and poultry products is new, and FSIS should be advised why the intended application would not adversely affect food safety and, therefore, not require an in-depth review by the Agency.

    Machine vision technology

    Machine vision technology used during slaughter and processing to detect abnormalities or foreign substances on product could affect product safety although there is no direct contact with the food product. For example, the technology could be misused to sort and treat product in a way that would mask disease conditions normally detected during FSIS inspection. FSIS should be notified before the technology is used so that the Agency can ensure that the intended use will not affect its inspection of the product for safety.

    Antimicrobial sprays that are processing aids

An establishment may wish to use an antimicrobial spray that has been judged to be safe by the Food and Drug Administration on its products. (The use of lactic acid as an antimicrobial spray on beef carcasses is an example of a substance that falls into this category.) If the establishment wants, however, to not have to declare the use of the ingredient in its labeling (see 21 USC 101.100 (a)(3)). If there are questions as to whether the substance meets the processing aid definition, FSIS should be advised why the antimicrobial spray is a processing aid and, therefore, is not required to be declared. The establishment may be able to demonstrate why the substance is a processing aid based on data showing that very low levels and no continuing effects will result from its use, or it may be necessary to submit a protocol and conduct a short study to establish those results.

- ***Examples of New Technology for which a protocol will likely need to be filed***

  - New technologies that affect the regulations

    New technologies for reprocessing of contaminated poultry carcasses on-line. A temporary waiver of FSIS' regulation on contamination of carcasses (§381.91(b)(1)) is required to allow contaminated poultry carcasses to be reprocessed on the main processing line.

    SIS automated poultry eviscerator system equipment that requires 3 or more inspectors per main processing line. A temporary waiver of FSIS' regulation on post-mortem inspection (§381.76(b)(3)(ii)(b)) is required to allow inspection to be performed by more than two inspectors per main processing line.

  - New technologies that affect inspection procedures

    Modified rail inspection in cattle slaughter, which changes the height of two rail inspection stations to a high inspection station and a low inspection station. The height of the inspection stations is not specified in the federal regulations, but variation affects the inspection procedure.

    Detection equipment to measure microbial load on the main processing line. The use of specific equipment is not in the federal regulations, but it affects how the program personnel perform their duties.

  - New technologies that affect the safety of inspection program personnel

    Use of ultraviolet wavelengths for anti-microbial purposes. Ultraviolet radiation can cause biological harm to program personnel. Even though the process has been approved for use, the system must be evaluated to ensure adequate safety precautions.

Change in inspection program personnel workstations or facilities. Any change can affect the biomechanics of the program personnel's duties. The change must be evaluated to ensure adequate safety precautions.

Section III. Notification

New technology that has a direct effect on meat, poultry, or egg products during slaughter and processing could affect their safety as human foods. The Federal Register Notice published in the *Federal Register* on February 11, 2003, informed firms that written notification should be sent to FSIS whenever an official establishment plans to introduce a new technology (for examples see Section II) into meat, poultry, or egg product establishments.

Written notification should be submitted to FSIS at the address on page 3. It should be submitted sufficiently in advance of planned implementation to allow FSIS to review and to address any issues that might need to be resolved. Typically, FSIS will review a notification and respond within 60 days of receipt of the notification. If FSIS has no objection to the plant proceeding because the new technology does not affect the Agency's regulations, inspection procedures, inspection personnel safety, or adversely affect the product's safety, it will advise the establishment of this fact.

Section IV. Notification Process

The written notification should describe the operation and purpose of the new technology and contain the following information:

- How the new technology affects food safety?

  The definition of new technology that affects product safety includes new technology that has either a beneficial or adverse effect. Establishments should describe, in some detail, what the technology is intended to accomplish as well as the beneficial or adverse effects that the technology is expected to have on products.

- Why the new technology will not jeopardize the safety of Federal inspection program personnel?

  Provide the rationale that led the official establishment to conclude that the technology will not affect or jeopardize the safety of FSIS inspection personnel. This should include a description of safety measures taken to ensure their safety

(e.g., installation of shields, ventilation, new construction to isolate the technology, protective equipment, etc.).

- Why the new technology will not require a waiver of any Agency regulation or inspection procedures?

  Cite any regulatory authority under which use of the technology is allowed or explain why the technology does not violate any existing regulatory requirements. If the new technology involves the use of a substance, state whether that substance's use has been found to be safe by the Food and Drug Administration. State whether the substance's use will be declared on the labeling of any resultant product. If not, explain why not declaring the substance is consistent with FSIS precedent.

- Any prior approvals, if applicable, by other Federal agencies, e.g., Food and Drug Administration (FDA), Environmental Protection Agency (EPA), or Occupational Safety and Health Association (OSHA), of the equipment, methods, processes, procedures, or substances.

Section V. Notification Review Process

The petitioner will be notified of the date on which its submission was received by FSIS. After reviewing a notification, FSIS will respond, usually within 60 days of receipt, either that the Agency has concerns that need to be addressed before use of the technology begins or has no objection to the use of the new technology. FSIS's review may be considered to be complete when either of the following occurs:

- It sends written notice that the notification is inadequate and will need to be revised and resubmitted.

- It sends written notice that an in-plant trial is needed, and that a protocol must be submitted.

- It sends a written no objection response.

If FSIS sends a written no objection response, an establishment may proceed to use the new technology. If the establishment or plant proceeds with the use of a new technology before receiving a written no objection response from FSIS, it risks enforcement action affecting products produced using the new technology.

If FSIS determines that the new technology does affect the regulations, inspection procedures, or Federal inspection personnel safety, even after it sends a "no objection response," FSIS will act to halt the use of the new technology until appropriate use of the technology can be established, e.g., after receipt of a protocol.

Section VI. Protocols

An official establishment should submit a protocol to FSIS (see page 3 for address) for any new technology (see Section II for examples) intended for use in the slaughter or processing of meat, poultry, or egg products if use of the new technology is expected to affect inspection procedures or the safety of Federal inspection program personnel, requires a change to the Agency's regulations, or poses a need to confirm, under commercial conditions, that use of the new technology will not adversely affect the safety of the product.

Before conducting an in-plant trial of the new technology, the establishment or plant should have a written protocol that has been reviewed by FSIS and that clearly states the objectives and methods for conducting the in-plant trial and when the trial will be completed.

FSIS regulations (specifically 9 CFR 303.1 (h), 381.3 (b), and 590.10) make provision for the administrator to waive for limited periods any provisions of the regulations to permit experimentation so that new procedures, equipment, and processing techniques may be tested to facilitate definite improvements. No waiver can be granted if the new technology conflicts with the provisions of the Meat and Poultry Inspection Act (21 U.S.C. 601, et seq.), the Poultry Products Inspection Act (21 U.S.C. 451, et seq.), or the Egg Products Inspection Act (21 U.S.C. 1031, et seq.).

The duration of an in-plant trial should be limited to the time needed to validate the performance of the technology under commercial conditions. The data needed for such validation and the time needed to obtain it will vary. However, FSIS wishes to see in-plant trials completed as expeditiously as possible so that technologies that can improve food safety and public health are available and used as quickly as possible. FSIS expects that most in-plant trials should be completed within 6 – 12 months after the Agency grants authorization. Some may be able to be completed in a very short time. FSIS will review the progress of authorized in-plant trials that have not been completed within 12 months to see whether it should continue the authorizations. Continued authorization will be granted based on evidence of a timely start, adherence to the schedule in the protocol, and appropriate progress towards the purpose stated in the protocol. Firms will be notified in writing of FSIS' intent to end authorization for an in-plant trial and will have the opportunity to show why the trial should not be terminated.

Section VII. Protocol Submission Process

The written protocol should contain, as applicable, the following information:

- **A descriptive title and statement of purpose for the in-plant trial.**

The statement of purpose specifies the rationale, goals, and objectives of the proposed research or trial. If enhanced food safety is the purpose, the statement of purpose should identify the particular area of concern: e.g., pathogenic microorganisms in raw beef. In all cases, the practical outcome to be measured must be clearly defined.

The statement of purpose should set forth the scope and any pertinent limitations of the study, such as species or production class.

The statement of purpose should define the specific application to be measured and the standard of measure employed: e.g., a hot water wash at a certain temperature, pressure, and time to reduce quantities of certain pathogens.

- **The name of the sponsor and the name and address of the facility at which the trial is to be conducted.**

  Name the lead researcher for any submitted proposal who will act as principal spokesperson and contact with FSIS.

- **A description of the experimental design, including the methods for control of bias.**

  The general approach should be detailed: e.g., nature of the treatments, how they are to be applied, number and names of participating establishments, and time frame of the study.

  When the new technology is expected to be tested in more than one establishment or plant, see Section XI of this guidance document for additional information.

- **Identification of the test subjects and control articles.**

  Control and experimental groups and the number of independent replications of the experimental procedure should be clearly defined.

- **The type and frequency of tests, analyses, and measurements to be made.**

  Sample set characteristics should be described: e.g., sample size and adequacy for the question under investigation, random selection procedure, and effects of any rejected samples.

  Sample handling should be described: e.g., visual scoring or laboratory sample preparation, kind and number of laboratory analyses to be performed, and analytical methods to be used.

In-plant trials where researchers artificially contaminate carcasses with fecal material that may contain human pathogens are not recommended. An alternative would be to treat product with a special sterile medium to which are added food-grade microorganisms that approximate the growth or spread of pathogens of interest. In such cases, trimming of treated areas followed by an antimirobial wash is required before product can move into commerce.

Protocols involving research using such surrogate organisms and artificial contamination of product in commercial settings should be reviewed by FSIS before implementation.

- **The records to be maintained.**

  The protocol should describe the records that will be maintained during the in-plant trial. The records should document the performance of the technology throughout the trial and be adequate to verify that food products produced during the trial are not adulterated. When the new technology is expected to be tested in more than one establishment or plant, see Section XI of this guidance document for additional information.

- **A statement of the proposed statistical methods to be used to analyze the data that are to be generated in the study.**

  Data processing and analysis techniques should be fully described. Where appropriate, descriptions of analytical methods may be abbreviated if appropriate citations are provided.

- **A time period for the in-plant trial.**

  The protocol should state how long (i.e., the number of days, weeks, or months) the in-plant trial is expected to last. The duration of an in-plant trial should be based on judgment that considers factors such as:

  1. how long will it take to address the purpose that prompted the study
  2. how long it will take to obtain data that are representative of the conditions of use intended for the technology
  3. how long it will take to obtain the data needed to support a change in the regulations or inspection procedures
  4. how long it will take to obtain representative data if the data must reflect seasonal variations
  5. in-plant trials should be finished expeditiously so that food safety and public health improvements can be implemented

  The duration of studies should be sufficient to assess the sustainability of new technologies or procedures under commercial conditions. Studies should,

however, last no longer than is necessary to assess the purpose that prompted the study.

- **Any applicable research data.**

  A literature review/bibliography should describe the current scientific status of the question addressed by the proposed research and highlight key previous work.

  A literature review/bibliography should be concise, representative, and balanced, with full and consistent citations. Data on pertinent preliminary experimentation should be included in this section.

  Any chemical reagents or other materials to be used in the project must have been approved by FDA, or the applicant must submit written FDA approval with the protocol. The proposed project must not violate any Federal law or regulation.

- **Any prior approvals from other Federal Agencies.**

  Ensuring the safety of inspection personnel is a key responsibility of FSIS. In order to safeguard its employees, FSIS will evaluate the protocol for impact on employee safety. Where pertinent, the protocol should contain written approval or appropriate regulatory citations from EPA or OSHA.

  Pertinent approvals from EPA, if necessary, will need to be in the protocol to demonstrate environmental safety.

All changes in, or revisions of, an approved protocol must be approved by FSIS and maintained with the protocol.

Section VIII. Protocol Review Process

FSIS will designate a lead project contact person who will coordinate and facilitate FSIS/industry activities.

Protocols will be reviewed by the lead FSIS project contact person for general acceptability and completeness. If complete, protocols will be assigned to a technical review team, with members drawn from pertinent disciplines and program areas, including Labor and Employee Relations Division (LERD).

FSIS will review the written protocol for the use of new technology to determine whether to waive provisions of the regulations for a limited period of time for the in-plant trial (9 CFR 303.1 (h), 381.3, and 590.10), whether inspection can be appropriately maintained,

and whether the safety of inspection personnel will be affected. FSIS will also examine the protocol to determine whether it complies with the Agency's humane slaughter regulations and is scientifically sound.

If the Agency rejects the written protocol to test use of the new technology under commercial operating conditions, the official establishment has the option to submit a revised written protocol to address any problem areas identified by FSIS. The Agency will then begin a new review of the revised protocol.

Protocols that are unapproved or still in the approval process will not be publicly available. Approved protocols will be available under the FOIA and will be on file in the Agency FOIA Reading Room. FSIS will ensure that FOIA protection for proprietary information will be maintained.

Section IX. Verification Process

FSIS will expect the submitter to provide data throughout the in-plant trial for the Agency to examine. Data may take several forms: laboratory results, weekly or monthly summary production reports, or the establishment's evaluation reports. FSIS also may obtain data from its inspection program personnel, particularly for technology that involves inspection procedures. If at any time the Agency determines that the in-plant trial results in product being produced presents an increased risk to food safety or inspection program personnel safety, the trial will be suspended or ended.

If requested by FSIS, the submitter should provide an orientation session for each establishment and shift before the start of each in-plant trial. The Agency reserves the right to conduct on-site observations during the in-plant trial.

Section X. Evaluation Process

At the conclusion of the in-plant trial, the establishment or plant will be expected to submit a final report to the Agency. The Agency's evaluation of the final report could result in a recommendation of additional in-plant trials or the issuance of a letter by FSIS either rejecting or accepting the use of the new technology in all FSIS-regulated establishments, or announcing the Agency's intent to institute rulemaking to amend its regulation to provide for the new technology.

If applicable, the establishment or plant will need to submit a petition requesting rulemaking to change the pertinent provision(s) of the regulations. See FSIS Notice, "FSIS Petition Submission and Review Procedures" (58 FR 63570) published December 2, 1993. The Agency may extend the in-plant trial period while the petition is pending if the Administrator determines that doing so will result in substantial benefit to public health.

Section XI. Multi-plant Trials and Data Submission

The meat, poultry, and egg products regulations (9 CFR; 303.1, 381.3, and 590.10) allow FSIS to waive regulatory requirements for a limited period for experimentation, so that new procedures, equipment, and processing techniques may be tested to facilitate improvements. This authority often is the basis for allowing in-plant trials to test new technologies under commercial conditions. Typically, in-plant trials conducted under this authority are to assess the efficacy and efficiency of new technology and to collect the additional data needed to support any desired change of FSIS regulations or procedures.

When the public health benefits that may be derived from validated technologies warrant allowing in-plant trials of new technologies that appear promising, firms that wish to test these technologies in official establishments should expect to maintain verification data that reflect the performance of the technology throughout the in-plant trials; and to provide appropriate and current data to support any necessary regulatory actions when the in-plant trials are finished. FSIS needs to see data from the first plant at which the technology is tested before it will authorize tests at additional plants.

- FSIS criteria for granting permission for multi-plant trials are described below for guidance in preparing protocols for in-plant trials.

    - Level I - Initially, FSIS will grant permission to conduct an in-plant trial at only one plant. Data from the trial must show that the expected improvement is obtained before permission will be granted to conduct trials at additional plants.

    - Level II - Permission to conduct tests in additional plants (maximum of three, two plus the initial plant) may be granted if the data show that the expected improvement is obtained at the initial plant. The protocol must provide for data that show that the desired action is warranted (for example, change the regulations or an inspection procedure). FSIS will work with the technology submitter at this point to ensure that the data collection aspects of the protocol are adequate. If not included in the original protocol, an addendum may be submitted to address the necessary data needs. Continued permission for the in-plant trials will be contingent upon submission of data to FSIS in accordance with an acceptable protocol.

    - Level III - FSIS will consider extending the trials to additional plants (i.e., more than three) if the data show that the expected improvement is achieved at Level II, and that it is reasonable to believe that the performance can be further replicated. FSIS will require that the trials be limited to the number of plants needed to acquire data representative of the plants that are expected to

use the technology. Plants/manufacturers will need to determine the number, location, and characteristics that comprise such a universe and submit a proposal to FSIS for approval. At a minimum, factors to be considered in assembling a representative sampling of plants should include geographical location, production volume, and plant size. Plants/manufacturers should submit a proposed scheme to conduct in-plant trials at a representative sampling of plants and describe the rationale for concluding that the plants selected reflect an accurate representation. Continued permission for the in-plant trials will be contingent upon submission of data to FSIS for all plants included in the trial universe in accordance with an acceptable protocol.

- Level IV – When amendment of the regulations is required, FSIS will consider interim general use (i.e., in-plant trials) at an unlimited number of plants only if the sponsor (1) provides data showing that the technology performance can be replicated in a universe that is statistically representative of the plants that can be expected to use it, (2) provides an acceptable data collection and submission scheme for monitoring the performance of the technology pending publication of an amended regulation, and (3) promptly submits a petition to the Agency for any needed amendment of the regulations.

- Following are FSIS data requirements for monitoring the performance of new technologies tested in multi-plant trials at Level IV above:

  - Plants/manufacturers must develop and receive FSIS approval for a data collection and submission scheme suitable for surveillance of the technology's performance. All plants using the technology must submit surveillance sampling data to FSIS in accordance with the FSIS-approved data collection and submission scheme.

  - Continued permission to use the technology is contingent upon data showing that the technology continues to perform as expected. The data collection and submission scheme should include corrective actions (e.g., suspend use, determine the cause, increase sampling frequency, and modify the protocol or terminate the use of the technology) if the expected improvement is not achieved.

Section XII: Voluntary Information Checklist for Establishments Completing New Technology Protocols

When the use of new technology requires a change in the Agency's regulations, answering the following questions will assist FSIS in conducting regulatory analyses which are required for rulemaking. Answers provided to the last two questions on the checklist will help FSIS determine the extent of the paperwork burden imposed on industry by the new technology notification procedures.

1. What processes in your plant are utilizing the new technology? [Examples: slaughter, cut up, further processing, packaging]

2. What are the anticipated costs of the new technology to your plant? Please identify the installation costs of the new technology and the annual operating costs.

3. What are the anticipated benefits of the new technology to your plant?

4. What are annual cost savings in terms of reduced labor, energy, water, or other production input?

5. What is the percentage increase in plant productivity, as measured by line speed? Are there other types of benefits anticipated at the plant, such as a new product or an increase in food safety? Please indicate.

6. What is the potential for either increase or decrease in costs per pound of final product associated with using this new technology? Please indicate in percentage of total final product cost.

7. How long (in minutes) did it take to fill out the initial new technology notification to FSIS?

8. How long (in minutes) did it take to put together the protocol for an in-plant trial of the new technology?

Send to:
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