



**United States
Department of
Agriculture**

Food Safety
and Inspection
Service

March 1998

**SPECIAL SURVEY
ON HUMANE
SLAUGHTER AND
ANTE-MORTEM
INSPECTION**

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EXECUTIVE SUMMARY

This report summarizes the results of a July and August 1997 survey on humane slaughter and ante-mortem inspection procedures conducted by Review Officers from the Technical Service Center Review Staff. The Review Staff gathered information on ante-mortem inspection and humane handling and stunning procedures, and reviewed records on carcass dispositions in sixty-one red meat slaughter plants.

The survey was designed to target plants of particular concern. Some plants were selected randomly and some were selected because they slaughtered mostly older livestock, which would be more likely to have abnormal conditions, including a higher incidence of diseases and pathological conditions. Others were selected based on referrals from outside sources indicating possible procedural problems. Most of the plants surveyed slaughtered cattle. The remainder slaughtered sheep, swine, calves, and horses. Of the 44 cattle operations, 35 slaughtered cows and bulls, and the other nine slaughtered fat cattle.

Although the sample selection precludes nationwide projections, this survey indicated that current ante-mortem inspection procedures, as specified in the regulations and directives, are adequate, when followed, to detect diseases and central nervous system disorders of particular concern. The survey also found that the Humane Methods of Slaughter Act of 1978 was being followed in most cases. FSIS District Offices took follow-up action on all specific areas of concern identified during the plant visits to assure corrections had been put in place.

The survey supports recommendations to strengthen certain humane handling procedures and to increase communication between APHIS-Veterinary Services and FSIS personnel at the local level.

SPECIAL SURVEY ON HUMANE SLAUGHTER AND ANTE-MORTEM INSPECTION

INTRODUCTION

This report summarizes the results of a survey on humane slaughter and ante-mortem inspection procedures conducted (by the Technical Service Center Review Staff) during July and August of 1997, in 61 red meat slaughter plants. The Review Staff gathered information on ante-mortem inspection, humane handling, and stunning procedures and reviewed records on carcass dispositions in each plant. Historical information was reviewed regarding whether inspection procedures had detected Central Nervous System (CNS) disorders in cattle.

Sixty-one red meat slaughter plants were selected for the survey. Some were selected randomly, and others were selected based on recommendations from sources inside and outside FSIS. Some were targeted because they slaughtered mostly older livestock, which would be more likely to have abnormal conditions, including a higher incidence of diseases and pathological conditions.

Most of the 61 plants surveyed (44) slaughtered cattle. The remainder slaughtered sheep, swine, calves, and horses. Some plants slaughtered more than one species. Of the 44 cattle slaughter plants, 35 slaughtered cows and bulls, and the other nine slaughtered fat cattle.

BACKGROUND

Ante-mortem inspection activities are one of the inspection program's primary means of removing diseased animals that are unfit for human food from the meat supply, and preventing these diseased animals from entering any department where edible products are handled. This survey was conducted to evaluate program effectiveness in carrying out this critical responsibility in red meat plants. Another area of interest, the implementation of the regulations under the Humane Methods of Slaughter Act of 1978, fit conveniently with a review of ante-mortem inspection procedures. Most slaughter plants routinely provide for humane slaughter and handling of livestock. However, a few reports of cruelty, abuse, or neglect of livestock at slaughter plants still arise. Additional information was gleaned from Dr. Temple Grandin's January 1997 report, *"Survey of Stunning and Handling in Federally Inspected Beef, Veal, Pork, and Sheep Slaughter Plants."* Collectively, this information reemphasizes the need for FSIS to periodically assess its activities in the area of enforcement of regulatory requirements for humane handling.

Cattle in the United States are inspected before slaughter (ante-mortem) and after slaughter (post-mortem) to assure that only healthy animals and parts are used for human food. Live animals showing signs consistent with diseases of the central nervous system (CNS) are condemned, and the use of such animals is prohibited for human food. APHIS, in cooperation with FSIS, collects suspect brains from cattle and analyzes

them for the presence of Bovine Spongiform Encephalopathy (BSE). To date, no evidence of BSE has been found in the United States. However, as a result of some of the concerns expressed by consumer and industry groups about the potential risk of BSE transmission to humans, we are enhancing our surveillance of "high risk" animals for BSE. This survey afforded an excellent opportunity to determine if ante-mortem procedures were capable of detecting Central Nervous System disorders and to ensure sampling of CNS-identified animals for BSE.

SURVEY OBJECTIVES

To address these concerns, the Agency established the following objectives:

- Determine if ante-mortem inspection procedures related to detection of CNS disorders, and humane handling procedures are being applied as specified in the FSIS regulations and directives.
- Determine if humane slaughter requirements are being applied and enforced as specified in the Humane Methods of Slaughter Act of 1978 by applying objective criteria.

METHODOLOGY

Prior to the performance of this survey the Review Staff, Processing Operations Staff, Slaughter Operations Staff, Domestic Policy Development and Evaluation Division, Animal Production Food Safety Staff, and Office of Public Health and Science jointly accomplished the following:

- Developed a checklist to gather specific information and apply objective criteria regarding humane handling of livestock at slaughter establishments; the humane methods of stunning; and the application and effectiveness of ante-mortem inspection procedures to detect symptoms of CNS disorders. This checklist is included as an "Enclosure ."
- Developed a review protocol to select an appropriate number of beef, sheep, swine, calf, and horse slaughter plants, targeted toward including plants that slaughter older animals, while considering:
 - Both, large and small plants, and
 - Geographically dispersed plants.
- Planned on-site visits to slaughter facilities that incorporated:
 - Using a hands-on, observation/interview approach to review humane handling and ante-mortem inspection procedures and associated records.

- Observing FSIS and plant personnel in the performance of ante-mortem inspection procedures and humane handling procedures.
- Discussing the results of the survey with FSIS and plant personnel during an exit interview.
- Referring the results of the survey to the appropriate District Manager for any additional follow-up they deemed necessary.

The Review Staff coordinated/conducted the on-site visits and analyzed the data gathered for situations that might require attention from FSIS District Offices. Results from 17 of the 61 plants visited were referred to the appropriate District Office. These situations are described later in this report, as are the follow-up actions taken.

RESULTS AND CONCLUSIONS

Humane Treatment

A primary objective of this survey was to determine if animals were handled humanely in slaughter operations. To attain this objective, information about plant procedures was gathered through observations and asking questions of inspection and plant personnel. (See Table 1.)

TABLE 1

HUMANE HANDLING	
Observation	No. of Plants (61 total)
Plants providing food and water adequate for animals kept overnight	53
Adequate water provided in holding pens	55
Facilities free of sharp objects	57
Observational/historical data: Down/disabled animals humanely removed from vehicles	57
No observed incidents of inhumane handling	48

NOTE: The information in the above table was collected from a biased sampling of plants and, as such, results would not be universally found nor indicative of the entire pool of slaughter plants.

Of the 61 plants, 55 provided adequate water at all times and 53 provided food and water adequate for animals held in excess of 24 hours. Of the eight plants that did not provide adequate food and water for animals, two never kept animals in excess of 24

hours. In addition, facilities in most of the plants were free of loose, splintered, or broken planking and of sharp objects in the livestock pens, driveways, ramps and stunning boxes.

In 57 of 61 plants, Review Officers observed that down and disabled animals were humanely removed from vehicles, and/or a review of plant histories found no records that down or disabled animals were inhumanely removed from vehicles. In one plant, a Review Officer saw evidence that an animal had been dragged off a vehicle with a chain. In three other plants, similar problems with inhumane movement of animals had happened in the past. In several plants, Review Officers noted an establishment policy not to remove down or disabled animals from vehicles on the premises. If a down or disabled animal arrived, it was forwarded to another location where appropriate equipment and procedures were available to humanely remove the disabled animal from the vehicle or, on occasion, directly to a rendering facility.

Observed Incidents of Inhumane Handling

A deficiency in humane handling was noted in each of 13 establishments. These observed deficiencies included: The inappropriate and inhumane movement of downer animals to the stunning area by use of ropes, chains, and forklift (5 establishments); overcrowding of animals in holding pens resulting in animals not being able to get to the watering troughs, or not able to lie down when held overnight (3 establishments); improper stunning of both normal and downer animals (2 establishments); and inadequate or ill-repaired facilities or equipment (3 establishments).

Additional **past** incidents of inhumane handling were documented on Processing Deficiency Records (PDR's) in 15 plants. In each plant, documentation showed the incidents were handled according to FSIS guidelines.

Procedures and equipment used for driving livestock varied from plant to plant. In 56 plants, employees drove animals with electrical prods, either alternating current or battery powered, and other devices. The devices were used on the hindquarters or backs of the animals. Review Officers observed only one instance of such devices being used inhumanely. Employees in three of the five remaining plants used devices such as whips, a length of garden hose, or plastic tubing to drive the animals, but did not use electric prods. The other two plants did not use devices to drive the animals. Employees in five of the 56 plants were observed to drive animals at a pace that was faster than normal walking speed to ensure full chutes and driveways to the stunning area.

The treatment of cattle during the ante-mortem inspection procedures and stunning procedures was of specific interest for this survey. Dr. Temple Grandin's report, *"Survey of Stunning and Handling in Federally Inspected Beef, Veal, Pork, and Sheep Slaughter Plants,"* (January 1997), noted that cattle vocalized when under physical and emotional stress. Several questions were asked during the survey regarding the numbers of cattle vocalizing prior to and during stunning. The results are discussed below.

In most of the 44 cattle plants, cattle were not observed vocalizing. In 14 plants, cattle were observed to be vocalizing in the holding pen, or the single file or double file chutes leading to the stunning box. In 13 of those plants, up to ten percent of cattle were vocalizing. The reasons could not be determined, except in a few instances where the cattle were prodded or the use of a noisemaker startled the cattle. In the remaining plant, 20 percent of the cattle were estimated to be vocalizing in the overcrowded pens.

Vocalization by cattle in the stunning area was also noted and recorded in seven of the 44 cattle slaughter plants. Six reports noted from one to five percent of the cattle vocalizing due to being prodded or to being lifted off their feet by the conveyor to the stunning area. In the seventh plant, 50 percent of the cattle were observed to be vocalizing due to confinement in the stunning box itself. In nine other plants, confinement by the restraining device in the stunning area also caused cattle to vocalize or struggle. In six of those plants, between two and 30 percent of the cattle were vocalizing or struggling. Two more plants had 50 percent of the cattle vocalizing, and the ninth plant had 100 percent vocalizing or struggling in the restrainer.

Stunning

Humane stunning procedures are required by the Humane Slaughter Act of 1978, and multiple stuns of an animal are considered inhumane. This survey obtained information on stunning methods. (See Table 2.)

Captive bolt stunners were used in 54 of the 61 plants visited. Twenty-six used cartridge-fired stunners, while eight used pneumatic stunners. Twenty used both types. Fifty-two of the 54 using captive bolt stunners had a maintenance program for them. Fifty-three plants used penetrating-type captive bolt stunners. The remaining plant used a nonpenetrating-type stunner. Five of the 54 establishments utilized electrical stunners as well as captive bolt stunners. Most of the captive bolt stunners were used with a 90 to 100 percent efficiency rate. In those plants with lower efficiency rates, the low efficiency usually resulted from inexperienced operators, misplacement of the stunner, or misfiring of the stunner.

Electrical stunners were used exclusively in seven plants. Animals were stunned only once in all plants, except one where old sows were being slaughtered. In that plant it was noted that frequently the stunning device was applied to old sows more than once. All electrical stunners had controls for amperage and voltage. The timing was automatically controlled on all electrical stunners except one, where the operator controlled the timing. In this one plant, the manual control of the timing was not observed to cause any problems.

In 56 plants employees were stunning animals using hand-held devices, while five other plants had automated their stunning procedures. Some plants used various types of automated conveyors to transport animals to the stunning area/box/pen, but the stunning was performed using hand-held devices.

TABLE 2

TYPES OF STUNNERS BEING USED			
Captive Bolt 54		Electrical 12	
Both Cartridge and Pneumatic 20			
Cartridge 26		Pneumatic 8	
Head 12		Head/body 0	
Penetrating 45	Non-Penetrating 1	Penetrating 8	Non-Penetrating 0

NOTE: The information in the above table was collected from a biased sampling of plants and, as such, results would not be universally found nor indicative of the entire pool of slaughter plants.

It is desirable that animals be bled as soon after stunning as possible to utilize post stunning heart action and to obtain complete bleeding. Also, the longer the interval between stunning and bleeding, the more likely that an animal will regain consciousness. It is considered inhumane to allow an animal to regain consciousness after the stunning procedure, so the bleeding should be done as quickly as possible after stunning. Although a stunning-to-bleed interval is not specified in the regulations, the stunning-to-bleed intervals were monitored and recorded. The intervals ranged from less than 15 seconds (in six plants) to greater than 60 seconds (in 34 plants). The remainder of the plants (19) had stunning-to-bleed intervals between these extremes. Stunning-to-bleed intervals were not recorded for two plants slaughtering in accordance with religious guidelines that prohibit stunning prior to bleeding.

FSIS Employee Safety

When plant employees keep firearms available in case an animal escapes the stunning area/box/pen, FSIS employee safety is of the highest concern to the Agency. In the 21 plants where firearms were available for use in the stunning area/box/pen, safety precautions appeared adequate to assure FSIS employee safety and no instances of misuse were reported.

Facilities

Most of the plant facilities were adequately maintained to assure humane handling of animals. (See Table 3.) Sixty of the 61 plants surveyed had floors, driveways and ramps that were constructed to minimize slipping of animals. Fifty-seven had pens, driveways, ramps, and a stunning box free of sharp objects and loose, splintered and broken planking.

Humane treatment of animals includes providing adequate water and room for moving around and/or lying down. In 53 of 59 plants when animals were held overnight, the

animals had sufficient room to lie down. In two other plants, animals were never held on premises overnight. In 55 plants water was available in each holding pen. In the remaining six plants, water was not available in every holding pen. Overcrowding was a problem in five plants. In one plant the pens were not only overcrowded, but water eight to 12 inches deep covered over half of the pen's floors as a result of stopped-up drains. In several other plants, overcrowding resulted when nighttime delivery of animals overfilled the pens. In one such situation, animals that arrived during the night were crowded into a holding pen so tightly that, when a dead cow was observed on its back in a feed bunk, plant management surmised that the death resulted from the overcrowding.

Most operations also provided the livestock with shelter from inclement weather. Fifty-eight of the 61 plants surveyed had all or part of their livestock pens covered with watertight roofs. All but one plant had their suspect pens and restraining devices covered. The one remaining had only the drive alley covered.

Forty-six of the 61 plants had restraining devices in their stunning areas. Nineteen of the plants with restraining devices had controls to prevent undue pressure on the animal restrained. Twenty-seven did not have controls. In 15 plants restraining devices were not used.

TABLE 3

FACILITIES	
(61 plants total)	
Floors, driveways, and ramps designed to minimize slipping of animals	60
Sufficient room for animals to lie down, when kept overnight	53
Facilities free of sharp objects	57
Adequate water provided in the holding pens	55
Holding pens of adequate size	56
Shelter provided from inclement weather	58
Suspect pens: Provided	60
Covered	60
Restraining devices:	
In the stunning area	46
With pressure controls	19
Adequate ante-mortem facilities	60

NOTE: The information in the above table was collected from a biased sampling of plants and, as such, results would not be universally found nor indicative of the entire pool of slaughter plants.

Thirty-four of the 44 plants slaughtering cattle did not have any animals vocalizing or struggling in the restraining area/box/pen. In eight of those plants where vocalizing was occurring, it was attributed to confinement in the restraining device rather than to any

pressure from the restraining device. For this survey, vocalizations of animals other than cattle were not noted. During the planning of the survey, Dr. Grandin noted that vocalizations were not necessarily significant for other species.

Suspect pens were provided in all plants when required by FSIS personnel. Required equipment for restraining, temperaturing, and identifying suspect animals was available in all plants, as were denaturants for condemned animals, although in some locations, they were not being properly used. All but one of the plants provided adequate on-premises facilities to perform ante-mortem inspection procedures. The remaining plant did not have a proper means to restrain ambulatory animals for veterinary disposition; however, no resulting problems were reported to the Review Officer. This plant subsequently corrected its facility deficiencies.

Inspection Procedures

In 57 plants, inspectors performed ante-mortem inspection procedures in a safe manner. In the other four plants, Review Officers recorded that FSIS personnel did not perform ante-mortem inspection procedures from a safe vantage point. In some plants, FSIS personnel had to enter the pens with large animals to perform ante-mortem tasks. In one plant no restraining device was available for abnormal hogs observed in the suspect pen.

All plants provided the required equipment to perform ante-mortem inspection procedures, and facilities were adequate, except as noted above. Company employees at 31 plants voluntarily segregated animals with abnormal conditions by observing livestock at rest and in motion before FSIS personnel conducted ante-mortem procedures. FSIS ante-mortem inspection procedures were then completed. Plant employees provided a preliminary screening for abnormalities in animals' behavior and physical conditions.

Nineteen plants have approved alternative ante-mortem inspection procedures on file. These procedures require a good history of regulatory compliance, suitable facilities, condemnation rates within the national average for market hogs and fat cattle, application of the approved procedure to domestic livestock, and plant segregation of abnormal animals. In two of the 19 plants, the procedures were being inappropriately applied to older or cull animals instead of to the appropriate market animals, i.e., a hog slaughter plant was using an alternative procedure for all hogs including large hogs imported from Canada, and a cow slaughter plant was inappropriately using an alternative ante-mortem procedure on cows instead of fat cattle. In addition to the plants using approved procedures, a cow slaughter plant that had not submitted a procedure for approval was inappropriately using an alternative ante-mortem procedure on cows. FSIS inspection supervisors provided instruction on the appropriate application of alternative ante-mortem procedures to the plants involved.

This survey found that pen cards were adequately maintained in nearly all cases and were completed appropriately after each ante-mortem inspection. Pen cards were maintained on file at the plants for at least a week in 58 of the 61 plants surveyed.

During the survey, 24 establishments were found to remove animals from the official premises after unloading. In most cases, animals were removed because they were of a different type than those killed in the plant (too large, too small, or the wrong species). In other cases, they were delivered by mistake to the plant; there were too many for one day's slaughter and were removed to other facilities overnight; or they were removed prior to presentation for inspection. In one case, plant officials stated that distressed animals were forwarded to another plant for slaughter.

Ante-mortem Dispositions

Ante-mortem dispositions in the surveyed plants were in accordance with the regulations. Forty-eight of 61 plants had a copy of the Livestock Carcass Disposition Review available for use by the Veterinary Medical Officer (VMO). In all plants, the plant employees segregated animals identified by the FSIS ante-mortem inspection procedures into suspect pens for further ante-mortem examination by the FSIS VMO. In addition to normal FSIS inspection procedures, 46 of 61 plants had plant employees segregate all animals with signs of disease or abnormalities into suspect pens prior to normal ante-mortem inspection by the FSIS VMO. In 58 plants, the suspect animals were properly identified. In all cases the VMO examined the animals segregated into the suspect pens.

In 54 of the 61 plants surveyed employees properly identified animals that were dead on arrival or had died in the pens, and in these plants, the animals were condemned and adequately denatured (application of appropriate chemicals to preclude use as human food) under the supervision of FSIS inspection personnel. In all 61 plants, animals dead on arrival, or which had died in the pens, were condemned and reported as such on FSIS Form 6200. Animals received in a dying condition were identified as "U.S. Condemned" under the supervision of the FSIS veterinarian and reported on FSIS Form 6200. Condemnation and destruction of animals took place in a reasonable amount of time in 60 of the 61 plants surveyed. In one plant, some animals were identified as "U.S. Condemned" as early as 6:00 AM, but were not destroyed until the end of the day.

FSIS inspection supervisors corrected procedural deficiencies in controlling animals that were dead on arrival (DOA) or died in the pens (DIP) by providing instruction on proper handling and denaturing. Where the mixing of animals with abnormalities with normal animals occurred, FSIS supervisors provided guidance to plant officials on the proper handling of animals with abnormalities and suspect animals.

Central Nervous System (CNS) Procedures

Central Nervous System (CNS) disorders include any disease that affects the brain and/or the spinal cord. The diagnosis of these disorders is based on symptoms such as head-tilting or having the head in an abnormal position, paresis or paralysis, staggering, circling, depression, drowsiness, weakness, coma, licking, and muscular tremors. An international issue that has arisen in the past few years is the presence of Bovine

Spongiform Encephalopathy (BSE) in some meat supplies. Central Nervous System (CNS) disorders, and BSE specifically, have not been a problem in the United States. (BSE is not known to exist in the United States.)

In 52 of the 61 plants surveyed, the FSIS VMO's stated that they were aware of the FSIS policies and sampling requirements for Central Nervous System (CNS) disorders in cattle. The Review Staff explained the procedures to the nine remaining VMO's (three of which were assigned to cattle slaughter). The District Office followed up to reemphasize existing policies and sampling requirements.

Historically, when cattle were suspected of having CNS disorders, the animals were condemned and Animal Plant Health Inspection Service (APHIS)/ Veterinary Services (VS) was contacted for sampling. In-plant inspection records in 18 plants indicated that the number of brain samples (19 samples) submitted to the National Veterinary Services Laboratory (NVSL) equaled the number of animals reported as condemned for CNS disorders on FSIS Form 6200. However, Review Officers noted that the IIC was not always informed when Veterinary Services personnel collected a sample from an animal that displayed CNS symptoms, nor were they notified of the results. VMO's in 14 of the 18 plants where samples were collected stated that they maintained a log in the inspection office documenting the date and name of the person notified when CNS disorders were encountered. Inspection personnel in the remaining four cattle slaughter plants stated that they did not keep such records, but would start a log if CNS sampling occurred in the future.

INSPECTION FOLLOW-UP

District Management Follow-up

Following each plant visit the results of the survey were discussed with plant management. In all instances where deficiencies involving humane handling were identified, FSIS inspection officials took immediate and effective corrective action. Operations were temporarily suspended, when necessary, until plant officials provided adequate corrective/preventive actions to assure that all animals were humanely handled. Results from 17 of the 61 plants that indicated serious problems were immediately referred to the appropriate District Office for additional follow-up. The results from all plant visits were forwarded to the appropriate District Office at the conclusion of the survey.

The Review Staff referred these deficiencies to the appropriate District office, and the District Manager requested a written response from the Circuit Supervisor regarding the corrective actions of each establishment. In all cases, management officials in each plant were informed of their responsibilities as defined in the Humane Methods of Slaughter Act of 1978. Written and verbal responses from plant officials assured that humane handling procedures had been implemented. Written responses from District Managers stated that appropriate preventive/corrective actions had been taken and constructive feedback had been given to field supervisors where needed. The District Managers also stated that they would continue to monitor the ante-mortem

requirements for humane handling and take corrective action if problems arise. District Office staff personnel planned to correlate with field supervisors regarding monitoring and enforcement responsibilities.

RECOMMENDATIONS

- A. A docket committee should be formed to examine the regulations in **Part 313 – Humane Slaughter of Livestock**. This committee would assess the appropriateness and efficacy of the existing regulation and make recommendations for revisions.
- B. Once the work of the docket committee is appropriately underway, the already established Working Group on Humane Slaughter Issues, which includes representatives from numerous specializations, should review the findings of this survey and modify their work agenda accordingly. Specifically, the FSIS Working Group on Humane Slaughter Issues should:
 1. Determine how to re-emphasize the authorities and inspection responsibilities contained within section 313.50 of the meat inspection regulations, pending any recommended revisions by the docket committee. This section outlines specific instructions on what steps inspection personnel should take when they observe instances of inhumane slaughter or handling in connection with slaughter.
 2. Determine if/how systems could be put in place for FSIS humane slaughter oversight and operational protocol (standards) consistent with the strategy of making industry responsible to assure humane handling. These systems would need to consider measurable objective criteria for humane handling, verifiable controls for the system and a process for FSIS regulatory oversight duties. The Working Group should assess options and recommend whether plants should be required to develop, operate and verify humane system controls on a voluntary or mandatory basis. The Administrator has already instructed the Agency to also determine options requiring industry adoption of objective criteria in GMPs similar to pre-HACCP processes such as SSOPs.
 3. In line with the option chosen, determine criteria for plant records, training of employees in humane control systems, objective criteria for humane handling, documentation of failures, means to take corrective actions and to document results of those actions. FSIS will need to determine when inspection will be withheld or suspended if the prevention system is not adequately assuring humane control. District Enforcement Operations participation should be added to the Working Group to assess these issues.
- C. Certain recommendations will require coordination among program development and technical staffs. OPPDE should take the lead, working with Technical Service Center, to:

1. Determine how to re-emphasize the uniform application of the Agency policy for allowing the removal of live animals from the official premises as stated in MPI Regulation 309.2. Recommend Agency policy regarding handling of plant rejected animals under HACCP systems.
2. Determine the procedures and controls for the disposition for "Dead on Arrival," "Died in Pen," and "US Condemned" animals, and establish guidelines for removing "US Condemned" tags from carcasses.
3. Determine how District Offices should instruct Circuit Supervisors to improve communications at the plant level between APHIS and FSIS personnel to ensure sampling of animals with CNS disorders. Consider the recommendation to have APHIS and FSIS personnel attend each other's work unit meetings or conference calls to share information on each agency's policies and discuss their responsibilities.
4. Recommend how IIC's could best be instructed to establish a periodic review of humane handling procedures, and whether or not they should be conducted jointly with plant officials, to insure coverage of:
 - a. Unloading procedures
 - b. Driving procedures
 - c. Stunning procedures
 - d. Stun-to-bleed intervals, including those for downers
 - e. Facilities and equipment
 - f. Availability of feed and water

Enclosure

SPECIAL REVIEW CHECKLIST FOR HUMANE SLAUGHTER, AND ANTE-MORTEM INSPECTION PROCEDURES

Date: _____

Name of Reviewer: _____ Circuit Supervisor: _____

Est. Name: _____ Est. Number: _____

Address: _____ Area/District: _____

Whenever a comment may be pertinent to the study, please provide specific detailed information by section and number on the attached comment sheet. In addition, during this review, record any observation that you feel is pertinent to the overall objective of this study. These questions are based mainly on requirements found in the Meat and Poultry Inspection Regulations, Manual, Policies, or Bulletins; however, some questions are included for informational purposes.

PLEASE CIRCLE THE CORRECT RESPONSE

Humane Slaughter

I. Handling

1. What species are slaughtered at this plant? (a) cattle , (b) sheep, (c) swine, (d) calves, (e) horses, and/or (f) other; please specify

2. What is the rate of slaughter for each? Cattle _____; Sheep _____;
Swine _____; Calves _____; Equine _____; Other _____
3. Are livestock pens, driveways, ramps, and stunning box free from sharp objects and loose, splintered, or broken planking? Yes No
4. Are facilities to provide food and water adequate for each of the animals held in excess of 24 hours?
Yes No N/A
5. Are downer/disabled animals humanely removed from the truck when they arrive at the plant?
Yes No Unknown
(**Note:** If downer/disabled animals arrive during the review, the reviewer should observe the removal procedures.)

6. Are animals that become non-ambulatory on the premises (in runways, alleys, pens, or chutes) moved and/or handled humanely?
Yes No

7. Are electrical prods used to drive animals? Yes No
If no, proceed to question 9.

7a. Estimate the percentage of animals prodded with an electrical prod: _____%
(Note: Observing the area for about 15 minutes will enable the reviewer to get a good estimate.)

8. If electrical prods are attached to AC house current, is the voltage reduced by a transformer to the lowest effective voltage not exceeding 50 volts AC?
(Please answer for battery operated devices as well)
Yes No Do not know N/A

8a. If yes/no, how is this determined?

9. Are objects other than electrical prods used for driving animals? Yes No

9a. If yes, describe the objects _____

10. What parts of the body are animals being prodded with electrical prods or other objects?
(Indicate specific area(s) prodded)

11. Do electric prods or other objects cause animals to vocalize when they are prodded? Yes No

11a. If yes, explain: _____

12. Are livestock forced to move faster than a normal walking speed?
Yes No

12a. If yes, explain: _____

13. Have inspection personnel observed any incidents of inhumane handling or slaughter (as defined in the Humane Methods of Slaughter Act of 1978) in the past 12 months? Yes No
If no, proceed to question 14.

13a. If yes, how many and what kind of violation(s)? _____

13b. If yes, what action was taken by inspection personnel? _____

13c. What step(s) was/were taken to prevent a recurrence of the violation(s)?

14. How many animals were on the premises during the review? _____

15. Estimate the percentage of cattle vocalizing in the crowd pen and single file or double file chute which leads to the stunning box or restrainer. _____%

15a. Please explain, if there is an obvious reason for observed vocalizing.

16. Estimate the percentage of cattle vocalizing in the stunning box, conveyor restrainer or head holding device. _____%

16a. Please explain, if there is an obvious reason for observed vocalizing.

II. STUNNING (A minimum of 50 animals should be observed, if possible)

1. What stunning device(s) is (are) used in this plant (such as: captive bolt, gunshot, electrical, chemical, other)? Specify (include placement of the stunner)

2. Is the stunning method automated? Yes No

3. Was electrical immobilization used to hold animals at the time of stunning? Yes No

4. Are captive bolt stunners used? Yes No

If no, proceed to question 10.

5. If the captive bolt stunner is cartridge fired, is the charge used appropriate for the animal being stunned? Yes No

6. Are captive bolt stunners on a maintenance program? Yes No

7. What is the type of stun gun being used?

Cartridge fired _____

Pneumatic _____

8. Calculate the percentage of animals stunned with one shot. _____%

If 100%, go to question 9.

8a. Reasons for missed shots: (choose all that apply)

1. Gun was placed correctly, but misfired? Yes No

2. Gun was placed in wrong location? Yes No

3. Untrained operator? Yes No

4. Gun too heavy, bulky and difficult to aim? Yes No

9. Is the captive bolt stunner a **penetrating** or **non-penetrating** type?

a) penetrating b) non-penetrating

10. Are electrical stunners used? Yes No

If no, proceed to question 17.

11. Were head only stunners placed either across the head or on top of the head and under the jaw to ensure the electric current passes through the animal's brain? Yes No

12. Estimate the percentage of animals in which the electrodes were correctly placed. _____%
(Note: Count for about 15 minutes for all species electrically stunned.)

13. Are head-body stunners used? Yes No
If no, proceed to question 15.

14. Were head-body stunners placed on the forehead or behind the ear, and on the body or leg to ensure the electric current passes through the animal's brain?
Yes No

15. Are timing, voltage and electrical current controlling devices in place?
Yes No

15a. If no, explain. _____

16. If applicable, list the amperage (current), voltage and timing in use for each species slaughtered.

<u>Species</u>	<u>Amperage</u>	<u>Voltage</u>	<u>Timing(Seconds)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

17. Was more than one stun required for each animal? Yes No

17a. If yes, explain why more than one stun was required.

18. What is the observed stunning-to-bleed time interval? (a) less than 15 seconds; (b) 15 to 30 seconds; (c) 30 to 60 seconds; (d) greater than 60 seconds.

19. If firearms are used, is the safety of inspection personnel completely assured during stunning operations? Yes No N/A

ANTE-MORTEM INSPECTION (AM)

III. FACILITIES

1. Are AM holding pens of sufficient size to hold (a) up to one hour's kill, (b) 1-4 hour's kill, (c) more than 4 hour's kill, (d) other (explain); _____

2. Are floors, driveways and ramps constructed in a manner to minimize slipping of animals? Yes No

3. If animals are held overnight, is there sufficient room for them to lie down? Yes No
N/A

4. Do animals have access to water in all holding pens? Yes No

- 4a. Please describe the watering facilities: _____

5. Are a reasonable portion of the livestock pens and the area where the suspect pen and restraining device are located, under a watertight roof?
Yes No Partially
- 5a. (explain) _____

6. Does the restraining device include controls which prevent undue pressure on the animal being restrained? Yes No
- 6a. Does it cause the animals to vocalize or struggle? Yes No
- 6b. Estimate the percentage struggling. _____%
(This can best be observed while counting in the stunning area for the 15 minute period.)
7. Does the stunning box have a non-slip floor surface? Yes No N/A
8. Is one animal at a time being stunned as appropriate? Yes No
9. Did the reviewer observe animals slipping in the stunning box? Yes No
- 9a. Estimate the percentage slipping. _____%
(Observe during counting in the stunning area for the 15 minute period.)
10. Is a suspect pen provided? Yes No
11. Is the pen identified "U.S. Suspect?" Yes No
12. Does the establishment provide equipment and trained personnel for restraining suspect animals?
Yes No
13. Does the plant provide trained personnel to move all the animals?
Yes No
14. Is 20fc lighting available over the entire suspect pen and 10fc lighting in other AM inspection areas (measured at three feet above the floor) when inspection is performed? Yes No
15. Is required equipment (i.e., thermometer, identification devices, denaturing material) available and provided by the establishment? Yes No
16. Does the plant have adequate on-premise facilities for AM inspection?
Yes No

IV. PROCEDURES

1. Are livestock observed at rest by plant personnel? Yes No N/A
- 1a. Are livestock observed at rest by inspection personnel? Yes No
2. Are livestock observed in motion, individually from each side by plant personnel? Yes No N/A
- 2a. Are livestock observed in motion, individually from each side by inspection personnel? Yes No
3. Are livestock observed in motion, individually from one side using a mirror? By plant personnel? Yes No N/A
- 3a. Are livestock observed in motion, individually from one side using a mirror? By inspection personnel? Yes No
4. Do FSIS personnel perform ante-mortem from a safe vantage point? Yes No
5. Have inspection personnel discussed with the establishment ways to safely perform antemortem inspection of downed/disabled animals on the vehicles? Yes No Do not know
6. Is there an approved alternate ante-mortem procedure on file at this plant? Yes No
If no, proceed to question 8.
7. If yes, is the procedure appropriate for the type(s) of animal(s) being slaughtered? Yes No N/A
- 7a. If no, explain: _____

8. Are pen cards completed after each ante-mortem inspection? Yes No
9. Do pen cards contain all required information? Yes No
10. Are pen cards transferred to the kill floor prior to stunning the animal(s)? Yes No
11. Are completed pen cards compared with the number of animals brought to slaughter to assure that all animals receive AM inspection? Yes No
12. Are pen cards kept on file in the government office for at least one week? Yes No
13. Are any live animals removed from the official premises after unloading? Yes No
- 13a. If yes, under what circumstances? _____

V. ANTE-MORTEM DISPOSITIONS

1. Is a copy of the Livestock Carcass Disposition Review available for the VMO? Yes No
2. Prior to ante-mortem inspection by the FSIS inspector, do the plant employees segregate all animals observed with signs of diseases or abnormalities into suspect pens? Yes No
3. Does the plant segregate all animals identified by FSIS's antemortem inspection into suspect pens for further ante-mortem examination by the FSIS veterinarian? Yes No
- 3a. Are suspect animals properly identified?
Yes No
4. Does the FSIS veterinarian examine all animals segregated into the suspect pen? Yes No
5. Are all Dead on Arrival (DOA) or Died in Pens (DIP) animals identified as a U.S. Condemned and adequately denatured under the supervision of an FSIS inspector or veterinarian? Yes No
6. If no, are all Dead on Arrival (DOA) or Died in Pens (DIP) animals reported as U.S. Condemned under the supervision of inspection personnel on FSIS Form 6200 series? Yes No
7. Are all animals in a dying condition identified as U.S. Condemned under the supervision of the FSIS veterinarian? Yes No
8. Are all animals in a dying condition reported as U. S. Condemned on FSIS form 6200 series?
Yes No
9. Are animals identified as condemned destroyed in a reasonable amount of time?
Yes No
10. At this plant, were any animals observed on ante-mortem inspection with symptoms of Central Nervous System (CNS) disorders? Yes No
- 10a. If yes, what was the disposition? _____
11. Are FSIS VMOs aware of CNS sampling requirements? Yes No
12. Are brain/nervous tissue samples collected from the condemned animal? Yes No N/A
- 12a. If yes, by whom? _____
13. Is Veterinary Services contacted regarding the condemned animal? Yes No
N/A
14. If yes, is a log maintained in the FSIS inspection office with the date and name of the person notified? Yes No N/A
15. If any animal, suspected of having a CNS disorder is reported to APHIS but not sampled, is the incident immediately reported through the FSIS chain of command? Yes No N/A

16. Do the in-plant inspection records for brain samples, submitted to National Veterinary Service Laboratory (NVSL), equal the number of animals reported on the 6200 series as condemned on ante-mortem inspection for CNS disorders? Yes No N/A

COMMENT SHEET

Section & Number	Comments
	(Note: Reviewers made specific comments on observations as needed to explain answers in the checklist.)