Food Safety and Inspection Service, USDA

§ 307.7 Safety requirements for electrical stimulating (EST) equipment.

(a) General. Electrical stimulating (EST) equipment is equipment that provides electric shock treatment to carcasses for the purpose of accelerating rigor mortis or facilitating blood removal. These provisions do not apply to electrical equipment used to stun and/or slaughter animals or to facilitate hide removal. Electrical stimulating equipment consists of two separate pieces—the control system and the applicator. The EST control system contains the circuitry to generate pulsed DC or AC voltage for stimulation and is separate from the equipment used to apply the voltage to the carcass. The voltage is applied by inserting a probe that penetrates the carcass or is inserted in the rectum, placing a clamp in the nose, a carcass rubber, a conveyor with energized surfaces traveling with the carcass, or any other acceptable method.

(b) Safety requirements—(1) Circuits, grounding. Either a bonded grounding conductor shall lead from each section of the carcass rail within the stimulating enclosure to the service ground, or the secondary voltage (stimulating circuit) shall be insulated from the service ground. If the stimulating section of the carcass rail and carcass drive mechanisms are insulated from the service ground then the stimulating rail or the return path shall be electrically bonded to the transformer secondary to isolate the stimulation voltage.

(2) Enclosure. Electrical stimulation shall occur in an area that will prevent persons from contacting an energized surface. If the area is surrounded by physical barriers, the enclosure shall be either electrically grounded or it shall be made of materials that do not conduct electricity. The interior of the stimulating area shall be visible from the start switch so the operator can be assured that there is no person, equipment or material present that should not be there prior to starting the stimulating sequence. If light or sound beam sensors form the enclosure, the stimulating equipment shall be automatically shut off when the sensor signals are broken.

(3) Mandatory Warning Devices and Signals. The following warning devices or signals shall be installed at each opening to the stimulating area through which a person would normally enter:

(i) A red light that flashes distinctly during the operating cycle of the stimulating equipment.

(ii) An ANSI Z53.1-Color Code sign reading (a) “Danger Electrical Hazard” for stimulating voltage below 50 or (b) “Danger High Voltage” for stimulating voltage above 50.

(iii) An emergency stop button.

(4) Optional Warning Device—Horn or Bell. If a warning horn or bell is installed, the signal shall be audible.
above background noises in the vicinity, and it shall sound for at least 1 second before each manual stimulation or before the carcass chain is started in an automatic system.

(c) **Operation**—(1) **Training.** Only persons who have received safety instruction by the equipment manufacturer or designee may operate electrical stimulating equipment.

(2) **Cleaning and Maintenance.** To prevent an electrical shock to personnel, the electricity supplied to the stimulating surfaces shall be locked-off when cleaning, mechanical inspection, maintenance or testing are performed.

(3) **Water.** To prevent an electrical shock, personnel shall not spray streams of water on energized carcases or on energized stimulating surfaces.

(d) **Special provisions for manually operated equipment.**

(1) Stimulating probes or clamps shall be stored in a sanitary container which is insulated with a material approved by the Administrator.  

(2) The electric wires attached to a clamp or probe shall not allow for contact between the probe or clamp and an electrical ground and shall not extend outside the enclosure.

[53 FR 46432, Nov. 17, 1988, as amended at 64 FR 56415, Oct. 20, 1999]

---

**PART 309—ANTE-MORTEM INSPECTION**

Sec.

309.1 Ante-mortem inspection in pens of official establishments.

309.2 Livestock suspected of being diseased or affected with certain conditions; identification suspects; disposition on post-mortem inspection or otherwise.

309.3 Dead, dying, disabled, or diseased and similar livestock.

309.4 Livestock showing symptoms of certain metabolic, toxic, nervous, or circulatory disturbances, nutritional imbalances, or infectious or parasitic diseases.

309.5 Swine; disposal because of hog cholera.

309.6 Epithelioma of the eye.

309.7 Livestock affected with anthrax; cleaning and disinfection of infected livestock pens and driveways.

309.8 Cattle affected with anasarca and generalized edema.

309.9 Swine erysipelas.

309.10 Onset of parturition.

309.11 Vaccine livestock.

309.12 Emergency slaughter; inspection prior to.

309.13 Disposition of condemned livestock.

309.14 Brucellosis-reactor goats.

309.15 Vesicular diseases.

309.16 Livestock suspected of having biological residues.

309.17 Livestock used for research.

309.18 Official marks and devices for purposes of ante-mortem inspection.

**AUTHORITY:** 21 U.S.C. 601–695; 7 CFR 2.18, 2.53.

**SOURCE:** 35 FR 15563, Oct. 3, 1970, unless otherwise noted.

§ 309.1 Ante-mortem inspection in pens of official establishments.

(a) All livestock offered for slaughter in an official establishment shall be examined and inspected on the day of and before slaughter unless, because of unusual circumstances, prior arrangements acceptable to the Administrator have been made in specific cases by the circuit supervisor for such examination and inspection to be made on a different day before slaughter.

(b) Such ante-mortem inspection shall be made in pens on the premises of the establishment at which the livestock are offered for slaughter before the livestock shall be allowed to enter into any department of the establishment where they are to be slaughtered or dressed or in which edible products are handled. When the holding pens of an official establishment are located in a public stockyard and are reserved for the exclusive use of the establishment, such pens shall be regarded as part of the premises of that establishment and the operator of the establishment shall be responsible for compliance with all requirements of the regulations in this subchapter with respect to such pens.

---

1 A list of approved insulation materials is available upon request from the Facilities, Equipment and Sanitation Division, Technical Services, Food Safety and Inspection Service, U.S. Department of Agriculture, Washington, DC 20250.