

OSH INFORMATION MEMORANDUM: 80-X-43

TO: All OSH Directors, Supervisors, and Field Personnel

FROM: William M. Lybrand, Director of OSH

SUBJECT: New Meat Tenderizing Technology in the Meat Packing Industry

DATE: August 1, 1980

Purpose

This memorandum provides an alert of possible electrical hazardous conditions associated with a new meat tenderizing technology being introduced into the meat packing industry.

(NOTE: This memorandum shall not be construed or assumed as proof that any manufacturer's equipment or the total installation is unsafe in any way until after completion of an inspection which establishes that there are hazardous conditions.)

Background

Electrical stimulation for tenderizing meat has been developed during the past year, a process which apparently improves the meat. Since it is gaining wide publicity in the industry, the use of the meat tenderizing equipment is becoming widespread.

- a. The electrical stimulation equipment operates off standard 120 Volt AC. By use of a transformer the voltage is stepped up to 400V to 600V, which is applied to the carcass either manually or automatically. Before application of electricity, the carcass is cleaned and suspended, usually on a conveyor track. When the energized element (a probe or rub-bar) makes contact and is "turned on", the whole carcass becomes "hot". Current flows through the carcass into the conveyor track or conductor back to its source.
- b. The electrical stimulation is performed on the carcass shortly after it is killed. Rigor mortis has not occurred and the muscles still retain much energy. Due to the ever-present water, size of carcass, violent movement due to the application of electricity, crowded conditions, speed of operation, elevated voltages and numerous other factors, conditions are potentially favorable for electrical shock.
- c. To our knowledge, only four manufacturers are currently producing the stimulation equipment which does not necessarily mean others will not appear. The concept is simple and the equipment, which is easy to manufacture, is being distributed and installed nationwide. It is estimated that 100 units have been sold. Every meat process plant is a possible location where the electrical stimulation process could be used.

Action

The Compliance Officer during his inspection shall check at least the following items:

- a. Whether the meat tenderizer operator is qualified in the sense of being knowledgeable about the electrical hazards of the installation and the working conditions.
- b. Whether the design of the equipment and its installation is in accordance with the requirements of the National Electrical Code by reviewing the installation, and schematics of equipment and circuitry. The following are some of the articles in the NEC that may apply as adopted by Article VI, Section 1910.309(a):
 - (1) NEC 110-2 Approval (as defined in Article VI, Section 1910.308(d))
 - (2) NEC 110-17(a) Guarding of live parts, such as exposed electrical parts on step-up transformers or regulators
 - (3) NEC 250-42 Equipment grounding
(a) and (b)
 - (4) NEC 400-4 Hard usage types service cords and cables.
Table 400-4,
Note 5

Also the General Duty Clause, Article I, Section 1.12 for recognized serious hazards such as electrical shock in a wet environment.

- c. Whether the operating procedures and working conditions are safe for the operator, adjacent workers and passersby by such means as lockouts, alarms, flashing lights, danger signs, area restrictions, physical or electrical barriers, interlocks, necessary personal protection from water spraying of the carcass, working GFCIs, etc.

Effective Date

This memorandum is effective immediately and supersedes any other directive on this particular subject.