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August 11, 2004

Debra Beasley  
USDA-APHIS-VS  
Sanitary International Standards Team  
Riverdale, MD

Dear Dr. Beasley:

The AVMA appreciates the opportunity to provide comments on the OIE draft **Guidelines for the Humane Killing of Animals for Disease Control Purposes, Guiding Principles for the Land Transport of Animals, and Guiding Principles for the Transport of Animals by Sea**. As requested, our comments are formulated for each section as a general statement, followed by suggested revised language where appropriate. Because we were uncertain as to the degree of editorial revision that would be welcome, we have refrained from such suggestions with the exception of where editorial revision has the potential to substantially improve readability or accuracy, or where we are already recommending substantive revision(s). Suggested deletions are ~~struck through~~, suggested additions are underlined.

#### **General Comment**

There appears to be considerable and unnecessary duplication within many of the OIE documents. We ask that the USDA suggest to the OIE that the workgroups (or OIE staff) carefully review their respective documents and attempt to eliminate such duplication prior to their adoption and publication.

#### **Regarding Guidelines for the Humane Killing of Animals for Disease Control Purposes...**

##### Article 1—General principles of humane killing

General comment—No mention is made within the general principles document concerning the importance of considering compatibility of method chosen with any subsequent required evaluation of animal tissue for disease control and/or food safety purposes. In general, the AVMA believes that 12 criteria must be addressed when evaluating the suitability of methods for humane killing: 1) ability to induce loss of consciousness and death while minimizing pain, distress, anxiety, and apprehension; 2) time required to induce loss of consciousness; 3) reliability; 4) safety of personnel; 5) irreversibility; 6) compatibility with requirement and purpose; 7) emotional effect on observers or operators; 8) compatibility with subsequent evaluation, examination, or use of tissue; 9) drug availability and human abuse potential; 10) compatibility with species, age, and health status; 11) ability to maintain equipment in proper working order; and 12) safety for predators/scavengers should the carcass be consumed.

Point 4—We recognize that individuals who are employed or who volunteer to perform mass euthanasias are under tremendous stress and that this stress can affect their attitude and, therefore, their performance. We request that material be added to this point to reflect that concern and suggest the following modification: “All personnel involved in the humane killing of animals should have the relevant skills and competencies. All

personnel should be carefully monitored for any signs of stress that may lead to inhumane killing practices.”

Point 11—In addition to continuous monitoring during the procedure, we believe it important to verify that euthanasia was successful; therefore, we recommend the following additional verbiage: “There should be continuous monitoring of the procedures to ensure they are consistently effective with regard to animal welfare, operator safety and biosecurity. Following the procedures, all animals should be checked to ensure that humane killing was successful.”

#### Article 3—Responsibilities and skills of the specialist team

Team leader—Bullet points 7 and 8 under *Responsibilities* appear to be incomplete thoughts. In addition, although the guiding principles mention the importance of including operator safety and biosecurity concerns within the written report, these items are not reflected in either bullet point. We therefore suggest that bullet points 7 and 8 be combined and rewritten as: “Provide a written report at the conclusion of the killing, describing the practices adopted and their effect on animal welfare, operator safety, and biosecurity.”

Veterinarian—For the reasons indicated above, we believe the last bullet point under *Responsibilities* should be rewritten as: “in cooperation with the leader, prepare a written report at the conclusion of the killing, describing the practice adopted and their effect on animal welfare, operator safety, and biosecurity.”

#### Article 5—Table summarizing killing methods

General comment—Mass killing of horses does not appear to be addressed by this document. Their omission is of concern to us, because in the United States, federal law (and some state law) includes equids in its definition of livestock. We would be pleased to assist the workgroup by providing appropriate information on preferred methods of euthanasia for this species. An applicable reference is the *2000 Report of the AVMA Panel on Euthanasia*, which may be accessed at: [www.avma.org/resources/euthanasia.pdf](http://www.avma.org/resources/euthanasia.pdf).

Penetrating and nonpenetrating captive bolt—The AVMA Panel on Euthanasia has indicated that, when used appropriately, the penetrating captive bolt is an acceptable and practical method of euthanasia for horses, ruminants, and swine. No requirements for adjunctive use of pithing or bleeding are suggested by their report. In contrast, the Panel has stated that “The nonpenetrating captive bolt only stuns animals and should not be used as a sole means of euthanasia.”

Percussive blow—According to the written description in the guidelines document, this refers to a blow to the head and not thoracic (cardiopulmonary, cardiac) compression. We believe related language in the table should be more specific (i.e., refer to a percussive blow to the head).

Decapitation—Although it has been demonstrated that electrical activity in the brain persists for 13 to 14 seconds following decapitation, more recent studies and reports indicate that this activity does not infer the ability to perceive pain, and conclude that loss of consciousness develops rapidly. Therefore we suggest that the reference “pain to animal” under the header “animal welfare concerns” be modified to read “potential pain to animal.”

Electrical—The AVMA believes it is imperative that animals be unconscious before being electrocuted, and electrical stunning is one acceptable means to accomplish this. Although an effective 1-step stunning and electrocution method has been described for sheep and hogs, euthanasia by electrocution in most species remains a 2-step procedure.

Lethal injection—One of the primary advantages of barbiturates is their rapid onset of action, therefore, we question the classification of their induction of unconsciousness as “not immediate”? We recognize that the rapidity of effect of lethal injection depends on drug type, dose, concentration, route, and accuracy and rate of injection. Perhaps it would be more technically accurate to make reference to that fact in this table?

#### Article 6—Free bullet

Introduction—The guidelines state: “~~A free bullet should be aimed to penetrate the skull or soft tissue at the top of the neck of the animal, to cause irreversible concussion and death.~~” According to the AVMA Panel’s report, “A gunshot to the heart or neck does not immediately render animals unconscious and thus is not considered to meet the panel’s definition of euthanasia.” Alternatively, the Panel indicates that: “For use of a gunshot to the head as a method of euthanasia in captive animals, the firearm should be aimed so that the projective enters the brain, causing instant loss of consciousness. This must take into account differences in brain position and skull conformation between species, as well as the energy requirement for skull bone and sinus penetration.” We suggest that the Panel’s language be substituted for existing language in the document as indicated by ~~striketrough~~ and underline. Accurate targeting for a gunshot to the head in various species has been described and appropriate diagrams as obtained from the literature would be a helpful addition to the guidelines document.

#### Article 7—Penetrating captive bolt

Introduction and Requirements for effective use—Again, although pithing or bleeding may be a reasonable ‘insurance policy,’ neither is required for humane euthanasia when a penetrating captive bolt is used appropriately.

#### Article 8—Nonpenetrating captive bolt

Introduction and requirements for effective use—Again, although the AVMA Panel’s report does not specifically address the use of nonpenetrating captive bolts in poultry, it does state that: “The nonpenetrating captive bolt only stuns animals and should not be used as a sole means of euthanasia.”

#### Article 10—Percussive Blow

Requirements for effective use—Bullet point 1, which states: “A single sharp blow should be delivered to the central skull bones, either by an implement (such as a hammer or a commercially available poultry killer)” appears to be incomplete. “Either” suggests an alternate method, which is not provided for review.

#### Article 11—Decapitation

Recommendation—We understand that the current focus of the OIE is on agricultural animals. That said, we do have concerns about the recommendation that decapitation should be considered only for killing poultry. In fact, decapitation can be used effectively to euthanize rodents and small rabbits as well.

Article 15—CO<sub>2</sub>/air mixture, Article 16 —Inert gas/CO<sub>2</sub> mixtures, and Article 17—  
Inert gases

Requirements for effective use—Bullet points 2 and 3 (in Article 15—CO<sub>2</sub>/air mixture”) appear to have been created by breaking a single thought into two statements. This may be a function of the software controlling pagination of the document, but if not, these bullet points should be combined into a single statement. The AVMA also believes that only compressed gas in cylinders should be used because the inflow to chambers can be regulated precisely. Carbon dioxide generated by other methods, such as dry ice, fire extinguishers, or chemical means (e.g., antacids) is unacceptable. Nitrogen and argon are readily available as compressed gases. We suggest that the underlined statements be included in the guidelines as part of the requirements for effective use of these methods (both articles).

Article 18—Carbon monoxide

Requirements for effective use—Bullet point 4 states: “~~If the CO is produced by a diesel engine, the gas should be cooled to ambient temperature and filtered to remove impurities in the gas.~~” Another technique that has been used to produce CO is chemical interaction of sodium formate and sulfuric acid. These techniques are associated with problems such as production of other gases, achieving inadequate concentrations of carbon monoxide, inadequate cooling of the gas, and maintenance of equipment. Therefore, the AVMA believes the only acceptable source of CO is compressed gas in cylinders. We recommend text within the guidelines be deleted as indicated and the underlined text be substituted for this bullet point. Bullet point 7 should include specific mention of the need for CO monitors to warn personnel of hazardous concentrations; we suggest the following addition: “...preventive measures put in place (e.g., CO monitors to warn personnel of hazardous concentrations).” We further recommend that an additional bullet point be added to this section stating, “Any electrical equipment exposed to CO (e.g., lights and fans) must be explosion proof.”

Article 19—Lethal Injection

Introduction—The guideline states that: “In practice, barbiturates and combinations of hypnotic and curareform drugs are commonly used.” To clarify the acceptability of combinations, the AVMA requests the following addition: “A combination of pentobarbital with a neuromuscular blocking agent is not an acceptable euthanasia agent.” Curariform agents cause respiratory arrest before loss of consciousness, so the animal may perceive pain and distress after it is immobilized. The AVMA absolutely condemns the use of these agents by themselves as a means of euthanasia and requests that the OIE take a similar approach to its recommendations.

Requirements for effective use—Regarding bullet point 3, “Intravenous administration is preferred, but intraperitoneal or intracardiac administration may be appropriate, especially if the agent is non-irritating,” the AVMA believes that intracardiac injection is only acceptable when performed on heavily sedated, anesthetized, or comatose patients. Intraperitoneal administration of a nonirritating euthanasia agent is acceptable, provided the drug does not contain neuromuscular blocking agents. Intramuscular, subcutaneous, intrathoracic, intrapulmonary, intrahepatic, intrarenal, intrasplenic, intrathecal, and other nonvascular injections are not acceptable methods of administering injectable euthanasia agents. We therefore suggest the following replacement for bullet point 3: “Intravenous administration is preferred. Intracardiac injection is only acceptable when performed on heavily sedated, anesthetized or comatose patients. Intraperitoneal administration of a nonirritating euthanasia agent is acceptable, provided the drug does not contain neuromuscular blocking agents. Intramuscular, subcutaneous, intrathoracic,

intrapulmonary, intrahepatic, intrarenal, intrasplenic, intrathecal, and other nonvascular injections are not acceptable methods of administering injectable euthanasia agents.”

Disadvantages—The following grammatical error should be corrected in bullet point 2: “Highly trained personnel ~~is~~are required for administration.” We also suggest the addition of the following two bullet points to this section: “Use of controlled substances may require official documentation of use” and “Care is essential in the disposal of contaminated carcasses.” We use the example of barbiturates as background for the latter recommendation.

### Regarding **Guiding Principles for the Land Transport of Animals...**

#### General comment

There are multiple references to appendices XXX. We assume that these appendices will be provided for review at a later date?

#### Article 1—Responsibilities

Responsibilities of veterinary services—Bullet point 4 suggests that the appropriate veterinary services authority will set “licensing standards for drivers, animal handlers and managers.” We support the need for training, but are concerned that requiring licensing might place an inappropriate burden on the USDA in the United States. We suggest the following alternate language: “setting competence standards for drivers, animal handlers, and managers.”

Private veterinarian and paraprofessionals involved in transporting animals—This bullet point states: “Private veterinarians and paraprofessionals involved in transporting animals and the associated handling procedures should receive specialist training.” The AVMA policy on identification of board-certified veterinarians indicates that only veterinarians certified by an AVMA-recognized veterinary specialty organization should refer to themselves as specialists. We request that “specialist” be changed to “special” so that the latter part of the statement reads: “...should receive special training.”

#### Article 3—Documentation

Veterinary certification—The bulleted items describe what should be included on the veterinary certificate that accompanies consignments of animals. Requirements exist that are not included in this list and the items that are listed are not always required (e.g., vaccination status). We suggest the three bullet points be deleted, replacing them with the following alternate language: “When veterinary certification is required to accompany consignments of animals, it should include information required by authorities in both exporting and importing jurisdictions.”

#### Article 8—Unloading and post-journey handling

Animal health procedures (e.g., quarantine)—In addition to “quarantine” or “slaughter,” “treatment” should be added as an option in bullet point 2 so that the bullet point reads: “Animals which could have become infected during the journey should be examined by qualified personnel after unloading and, if necessary, ~~either~~ be quarantined, treated, or slaughtered.”

### Regarding **Guiding Principles for the Transport of Animals by Sea...**

#### General Comment

Multiple references to appendices XXX appear within this document. Once again, we assume that these appendices will be provided for review at a later date.

### Article 1—Responsibilities

Responsibilities of the veterinary services of the importing country—Bullet point 5 ends in a question mark, which may be appropriate because it isn't clear exactly which standards for vessels are to be met; those of the exporting country or those of the importing country? Also, it is not apparent to us that veterinary services staff are the appropriate authorities to be assessing fitness of maritime vessels?

Private veterinarians and paraprofessionals involved in transporting animals—Again we request that “specialist” be changed to “special” to distinguish special training from board certification.

### Article 3—Documentation

Veterinary certification—As was the case in the guidelines for land transport, the bulleted items describe what should be included on the veterinary certificate that accompanies consignments of animals. Once again, requirements exist that are not included in this list and the items that are listed are not always required (e.g., vaccination status). We suggest the four bullet points be deleted, replacing them with the following alternate language: “When veterinary certification is required to accompany consignments of animals, it should include information required by authorities in both exporting and importing jurisdictions.”

Once again, we very much appreciate the opportunity to respond. Should you have questions or require additional information, please do not hesitate to contact me. I may be reached at the phone number as provided in the letterhead (ext. 6618), or you may contact me on my direct line at 847-285-6618 or via e-mail at [ggolab@avma.org](mailto:ggolab@avma.org).

Sincerely,

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