

RULES AND REGULATIONS

Title 7—AGRICULTURE

DEPARTMENT OF AGRICULTURE

[7 PA. CODE CHS. 28 AND 28a]

Commercial Kennel Canine Health Regulation

The Department of Agriculture (Department) rescinds Chapter 28 and adopts Chapter 28a (relating to commercial kennel canine health regulations) to read as set forth in Annex A.

Statutory Authority

The Department adopts this final-form rulemaking under the Dog Law (act) (3 P. S. §§ 459-101—459-1205) and the specific authority in sections 221(g) and 902 of the act (3 P. S. §§ 459-221(g) and 459-902).

The Canine Health Board (Board), created under section 221 of the act, issued temporary guidelines published at 39 Pa.B. 310 (January 17, 2009). As required by section 221(g) of the act, those temporary guidelines were published by the Department as a proposed rulemaking at 39 Pa.B. 5315 (September 12, 2009).

More specifically, section 221(f) of the act charges the Board and the Department with the duty to determine standards and promulgate regulations to provide for the health and well being of dogs in the specific areas of ventilation, auxiliary ventilation, humidity and ammonia levels, lighting and flooring in commercial kennels as set forth in section 207(h)(6)—(8) and (i)(3) of the act (3 P. S. §§ 459-207(h)(6)—(8) and (i)(3)) and section 221(f) of the act.

The Department, under its general authority in section 902 of the act and under the specific duty and authority in section 221(g) of the act, adopts Chapter 28a.

Purpose of the Final-Form Rulemaking

The final-form rulemaking is required to effectuate the edicts of the act and the duty of the Board and the Department to determine and establish standards, based on animal husbandry practices, to provide for the welfare of dogs under sections 207(h)(7) and (8) and (i)(3) and 221(f) of the act. The final-form rulemaking establishes standards for ventilation, auxiliary ventilation, humidity and ammonia levels, delineates lighting requirements for either natural or artificial lighting, or both, requires carbon monoxide detectors in some commercial kennels and sets forth the flooring standards required by the act, as well as establishing parameters for additional flooring options. The standards are based on consultation, input and verification from experts such as engineers that design and build kennel housing facilities, architects, animal scientists from the Pennsylvania State University (PSU) and veterinarians from the Board and the Department. The Department also consulted the minutes of Board meetings, did its own research and relied upon animal, including canine, health studies. In addition, the Department met or had discussions with a group of kennel owners from the Pennsylvania Professional Dog Breeders Association and their lobbyist, the president and CEO of the American Canine Association and a senior field representative from the American Kennel Club (AKC).

Comment and Response

The final comment and response document is over 400 pages in length. Therefore, the Department set the

comment and response document forth as a separate document, as it would have been impossible to include it in this preamble. The comment and response document is posted on the Department's web site and will be sent to interested persons upon written request.

Summary of Overall Changes

The major features of and changes to the final-form rulemaking are summarized as follows.

The Department agrees that the Board crafted guidelines, promulgated as a proposed rulemaking by the Department with the intent to insure the health and welfare of dogs housed in commercial kennels, including that the kennels remained "sufficiently ventilated at all times when dogs are present" to "determine auxiliary ventilation to be provided" if the air temperature reaches or exceeds 85° Fahrenheit, provide for proper humidity and ammonia levels, delineate proper lighting ranges and establish dog health criteria for alternative flooring options. However, in the final-form rulemaking, the Department made changes to the format and substance of the standards established by the Board.

First, the Department reorganized the final-form rulemaking by breaking it into sections that reflect specific areas of authority granted by the act, namely ventilation, auxiliary ventilation, humidity levels, ammonia levels, lighting and flooring. This was done to provide more clarity to the reviewing entities and to provide clarity to the regulated community.

Second, the Department made substantive changes to the ventilation provisions. Although based on the work done by the Board, the measurement standards have been amended. In its consultations with engineers and architects, all of whom design kennel facilities, those experts confirmed that mechanical ventilation systems were necessary to assure the proper ventilation levels in kennel facilities. The proper levels were determined by the research done by the Board and additional research done by the Department in drafting the final-form rulemaking. The research included additional discussions with engineers and architects that design and build kennel facilities, consultations with animal scientists, a meeting with an AKC senior field representative and information and input from Board and Department veterinarians.

The Department, in the final-form rulemaking, no longer requires a measurement of "air changes per hour," but instead requires a measurement of cubic feet per minute (CFM) per dog. Air changes per hour have been replaced by CFM per dog and standards and measuring tools for the CFM per dog standard are quite specific and have been added to final-form § 28a.2(b) and (f) (relating to ventilation).

The change to CFM per dog is consistent with comments submitted by Dr. Kephart of PSU and discussions and consultations with Dr. Mikesell and Dr. Kephart as well as discussions and consultations with engineers from Learned Design and Paragon Engineering Services. Additionally, standards regarding circulation of the air, minimum fresh air rates and filtration have been established in subsection (f) of the final-form regulation. Final-form § 28a.2(b) entails information the Department requires of the kennel owner. The information requested is directly related to and provides verification of compliance with the ventilation and air circulation standards in § 28a.2 and

the auxiliary ventilation, humidity and ammonia level provisions in final-form §§ 28a.3—28a.5 (relating to auxiliary ventilation; humidity levels; and ammonia levels).

Because of the restructuring of the final-form rulemaking, many of the provisions in § 28a.2 have been moved, modified or deleted.

In addition, the provision in § 28a.2(i) requiring 100% fresh air has been deleted from the final-form rulemaking. Although 100% fresh air circulation is not prohibited by the final-form rulemaking, the change to this subsection was made after consultations with the engineers and architects that design kennel buildings revealed that a 100% fresh air exchange rate in this Commonwealth would make it too expensive and difficult to heat or cool the kennel housing facility, not allow for recapture of heated or cooled air and not allow for proper humidity control in the kennel housing facility. The ventilation standards now established in the final-form rulemaking are more easily measured and verified, continued to account for the health and safety of dogs housed in commercial kennels and require or allow kennel owners to increase or reduce the air circulation in a kennel based on the number of dogs housed in the kennel facility.

There are two general reasons behind these changes. First, CFM per dog is much more easily measured and verified and more objective in nature. As set forth in the final-form rulemaking, compliance will be based on CFM information on the ventilation equipment, certification from an engineer or architect that installed or inspected the equipment and information supplied by the kennel owner and verified by a professional engineer, such as the cubic feet of each area of the kennel housing facility in which dogs are housed and the number of dogs housed or able to be housed in each area of the kennel housing facility. Second, CFM per dog will require and allow kennel owners to design their ventilation systems to have the total capacity required to assure circulation of the proper amount of air required by the final-form rulemaking for the total number of dogs able to be housed in the kennel housing facility. It will then allow the kennel operator to utilize only that capacity necessary to achieve the required circulation for the number of dogs housed or kept in the kennel facility. In other words, the system will be easier to design, ventilation rates will be more specific and easier to verify and the system will be less costly to operate. While still requiring the system to be designed to account for the maximum number of dogs the kennel owner will have in the kennel housing facility, it will allow the kennel owner to utilize less of the total capacity of the system if dog numbers decrease. This not only lowers operation costs, but also sets a proper standard to assure dogs are not subjected to a circulation standard that is too strong or unable to be enforced. It is a more objective standard, easier to measure and verify and fairer and less costly to operate, as the total CFM rate will increase and decrease based on the number of dogs.

A one-time certification, by a professional engineer, of the ventilation, auxiliary ventilation and humidity system to be utilized is required by the final-form rulemaking. This requirement allows the kennel owner and the Department to assure the required standards can and will be met by the operating system and does not require or rely upon measurements or assessments made by nonengineers such as the kennel owner or State dog wardens.

The illness standards established under the ventilation provisions in the final-form rulemaking have also been changed from the proposed rulemaking. Proposed

§ 28a.2(9), regarding conditions in dogs that were signs of illness and stress, has been modified in the final-form rulemaking. The corresponding provisions in the final-form rulemaking are in § 28a.2(h).

The Department discussed these issues with animal scientists from PSU as well as with Department and Board veterinarians. The number and type of conditions in dogs that may denote poor ventilation has been reduced and are consistent with the suggestions of the experts consulted. In addition, the signs of stress or illness trigger an investigation of the ventilation, air circulation, humidity levels, heat index (HI) values and ammonia levels in the area or room of the kennel where those signs exist in dogs. If the investigation reveals problems in those areas, then proper enforcement action may be taken by the Department. However, the mere existence of the signs of stress or illness does not in and of itself constitute a violation of this final-form rulemaking.

The type of conditions in dogs and the illnesses or signs of stress listed are all associated with conditions that veterinarians have asserted can result from poor ventilation, air circulation, humidity, heat stress or ammonia or carbon monoxide levels that are not within the ranges established by the final-form rulemaking. For instance, respiratory distress can be associated with humidity, temperature levels or ammonia levels that are too high as well as insufficient air circulation or auxiliary ventilation. Section 28a.2(h)(2) sets forth the signs associated with heat distress or heat stroke, which again denotes insufficient air circulation, auxiliary ventilation or humidity level controls, or both, in that part of the kennel facility. Matted, puffy, red or crusted eyes and listlessness can be associated with high ammonia or high carbon monoxide levels. Fungal and skin disease can denote improper humidity control in the kennel facility.

Third, the final-form rulemaking no longer requires the reduction of ambient temperature levels in commercial kennels. Although the implementation and use of temperature reducing air conditioning systems is still allowed and preferable, the Department, after viewing the comments submitted by the Office of Attorney General, Independent Regulatory Review Commission (IRRC) and the House and Senate Agricultural and Rural Affairs Committees (House and Senate Committees) regarding requiring ambient air temperature reduction when kennel housing facilities exceeded 85° Fahrenheit, decided to utilize the absolute authority in the act to regulate humidity levels and thereby assure a proper environment. The authority to regulate humidity levels is absolute. The humidity levels established in the final-form rulemaking are based on animal husbandry and scientific information regarding dog survivability and safety and HI levels. The rationale for the approach and support for the levels established in the final-form rulemaking is in previous answers to comments and hereafter.

Without temperature control, the Department sought to ascertain the proper humidity levels and auxiliary ventilations standards that would assure the health, safety and welfare of dogs confined to kennels when temperatures rise above 85° Fahrenheit. Kennel owners and others have asserted in their comments that their kennel buildings can be made to “feel cooler” through the use of additional air circulation/ventilation or the mere increase of fan speed and the amount of air being pulled through the kennel building. However, science does not support this comment or conclusion.

The Department, with the assistance of engineers and Department and Board veterinarians and research provided by Dr. Karen Overall of the Board, reviewed HI values for cattle, swine, poultry and humans. Those values show that all of those animals are in a danger zone once temperatures rise above 85° Fahrenheit if there is not a correlated reduction in humidity levels. The reason for this is supported by the physiology of cooling. Humans, cattle and equine cool their internal body temperatures by perspiring, which is the most efficient cooling mechanism. Dogs and swine do not have sweat glands over a majority of their body and do not perspire. Dogs cool their internal body temperatures mostly through panting, with a minimum amount of cooling provided by perspiring through the pads on their feet. However, perspiring or panting in and of itself does not result in the cooling of the body. For the cooling effect to occur the perspiration or moisture, whether it is a human, cow or on the tongue of the dog, has to be evaporated. On a humid day or in a humid environment, there is already a lot of moisture in the air and the evaporative process is either less efficient or does not take place and the internal body temperature continues to rise.

In sum, a cooling effect cannot be provided by simply increasing the amount of humid air flowing over the body of a dog or other animal. Pulling already moist and humid air over the body does not and will not allow for the evaporation of perspiration and will not provide a cooling of the body. The result is that when temperatures rise above 85° Fahrenheit, humidity levels shall be controlled to attain an HI value that will assure the health, safety and welfare of dogs confined in kennels. The HI charts in Appendix A evidence that value should be set at a maximum HI of 85° Fahrenheit (85 HI).

Finally, the Department, with the assistance of Board member Dr. Overall and along with Department veterinarians reviewed, found a dog study that established "survivability" levels for confined dogs. The study, which is included with the comment and response document, sets forth evidence that beagle dogs cannot survive for more than 6 hours at maximum HI values of between 100°—106° Fahrenheit. The study goes further to conclude the relative humidity values in the study should be reduced by 20% to assure the welfare and safety of dogs. The final-form rulemaking allows a 4-hour window (consistent with Federal animal welfare regulations standards) for kennel owners to reduce the humidity levels in their kennels to attain the required HI value of 85. However, during that 4 hour window, the HI value must never go above 90° Fahrenheit (90 HI). The maximum HI value to ensure survivability and safety, the latter requiring the recommended 20% reduction in humidity levels from the study's maximum values, is 95—98 HI. However, this is tempered by the Tufts Animal Condition and Care (TACC) criteria, specifically the TACC Weather Safety Scale, authored in 1998 by Dr. Gary Patronek, then-director of the Center for Animals and Public Policy at Tufts University School of Veterinary Medicine and first published in *Recognizing and Reporting Animal Abuse: A Veterinarian's Guide*. This widely-used scale, one of several canine assessment tools focused on consequences for the dog, indicates that, even with water and shade available as in a commercial kennel setting, a potentially unsafe situation develops above 90° Fahrenheit, especially for brachycephalic, obese or elderly dogs, as well as dogs under 6 months of age. Although this final-form rulemaking is based on HI, regulates relative humidity rather than temperature, and a temperature over 90° Fahrenheit would be permitted if combined with a rela-

tive humidity that would result in an HI of no more than 90, the inclusion of the TACC Weather Safety Scale as a basis for the regulation emphasizes that the standard being set goes beyond survivability to minimize adverse heat-related consequences for dogs in commercial kennels. The survivability study and the TACC Weather Safety Scale are generally acknowledged to be the only two scholarly resources that give specific heat-related safety guidance applicable to canines.

The Department will be able to monitor and regulate this requirement because of a change to the final-form rulemaking that requires the Department to provide and install the temperature and humidity recording devices. This takes away the cost to the kennel owner of purchasing these devices, allows the kennel owner to constantly and consistently monitor temperature and humidity levels and removes inconsistency in the devices utilized to take readings or the areas of the kennel measured.

In conclusion, the Department's research, consultations and discussions support the humidity levels established in the final-form rulemaking. The humidity levels are necessary and proper for the health, safety and welfare of dogs confined to kennels. The range or humidity levels established for kennels when the temperature is 85° Fahrenheit or below is within normal animal husbandry practices and set at the least stringent levels suggested. Humidity levels and the time period of exposure established in the final-form rulemaking for temperatures above 85° Fahrenheit are supported by scientific research performed on animals with more efficient cooling mechanisms than dogs or are based on scientific research specifically done on dogs. Finally, the engineers and architects consulted believe the requirements in the final-form rulemaking are attainable and the Department set forth the cost estimates in the regulatory analysis form that accompanies the final-form rulemaking.

Fourth, the Department reassessed the auxiliary ventilation standards that shall be utilized when the temperature within the commercial kennel rises above 85° Fahrenheit. The Department, after consultation with engineers and an AKC senior field representative, set forth auxiliary ventilation options that are currently being utilized by kennel owners and approved and verified by the engineers as being attainable and, if properly utilized in conjunction with humidity standards, providing appropriate ventilation to address dog health issues when temperatures rise above 85° Fahrenheit.

Fifth, with regard to lighting, the Department, with the assistance of members of the Board and Department veterinarians, did additional research into the issue of the proper illumination levels in kennels. In addition, the Department spoke with animal husbandry scientists at PSU and with engineers at Learned Design and Paragon Engineering Services who design kennel buildings. The consensus was that 40—60 foot candles of light is necessary to assure proper animal husbandry practices, including the ability to monitor the dogs, assure sanitation and cleanliness of the kennel (compliance with statutory and regulatory standards) and provide for the proper health and welfare of the dogs. In addition, the Department researched and reviewed National Institutes of Health (NIH) policies and guidelines regarding biomedical and animal research facility design. The NIH requires average lighting levels in animal facilities to be between 25—75 foot candles, which translates to 279—800 lux. The guidelines state the exact lighting levels should be based on species.

The veterinarians and animal husbandry scientists consulted felt the range of 40—60 foot candles, which translates to 430—650 lux, was appropriate for both the dogs and the humans that had to care for those dogs. This level is further supported by NIH standards for office and administration areas and PSU's standards for class room lighting, which are also between 40—60 foot candles. This level will provide for the health and welfare needs of the dogs housed in the facilities and allow for proper inspection of the facilities and animal husbandry practices, such as cleaning and sanitizing and monitoring the dogs for health issues.

The night time lighting provision has been removed from the final-form rulemaking. However, for clarity purposes, the night time lighting standard was consistent with studies done that show dogs need a minimum level of night time lighting (1—5 foot candles) to allow a natural startle response. The night time lighting standard was for the welfare of the dogs. Kennel owners can turn on or add additional light at night time if there is a need for them to be in the kennel.

The final-form rulemaking allows lighting standards to be achieved through the use of either natural or artificial light, or both, and sets both general and specific standards for each type of lighting. The final-form rulemaking does not require that a certain area of the kennel facility be devoted to windows or skylights to allow natural light and utilizes the language of the Federal regulations set forth under the Animal Welfare Act (7 U.S.C.A. §§ 2131—2159) with regard to the type of coverings for windows and skylights. In addition, the final-form rulemaking reiterates the language of the act with regard to excessive light and uniformity of diffusion of such light (which is also consistent with the *Federal Code of Regulations*) The Department has also defined excessive light, based on literature provided by a Board veterinarian.

Finally, based on IRRC's clarity comments, the Department reformatted final-form § 28a.8 (relating to flooring). This section now begins by reiterating the standards established by the act. The last subsection of the flooring section addresses alternative flooring.

The Board has the authority, but is under no obligation, to address individual alternative flooring requests or types under section 207(i)(3)(iii) of the act. That provision clearly states the Board "may" address alternative flooring. The Board is under no obligation to address these requests, either through the regulations or through another avenue such as a public meeting or hearing of the Board. If the Board chooses to address a particular type of flooring, the Board can determine based on its expertise whether or not that particular type of flooring meets the standards in section 207(i)(3)(i) of the act and the animal husbandry and welfare requirements in section 221(f) of the act.

To the extent the Board, and hence the Department, did address alternative flooring in the final-form rulemaking, it did so by establishing requirements that are based on animal husbandry, their expertise as veterinarians and input received during their deliberations on the guidelines. The Department included the standards set by the Board in the initial guidelines and the proposed rulemaking—such as requiring proper drains, flooring that is not capable of heating to a level that could cause injury to the dogs and will provide a nonskid surface—in the final-form rulemaking, but added language to these provisions to clarify the intent and provide more objective standards. In addition, based on discussions with Department and Board veterinarians, the Department added

language that provides for the welfare of the dogs, based on proper animal husbandry practices. The Department's State dog wardens and veterinarians have witnessed the ill effects caused to dogs that are housed on a surface that splays their feet, caused damages to the feet or pads or allows the pads, feet or toenails of dogs to become snared or entrapped. Therefore, § 28a.8(d)(4) was added to the final-form rulemaking to effectuate those animal husbandry and welfare practices. This should add some clarity to the requirements for alternative flooring.

In another attempt to add clarity, the Department added § 28a.8(e) to the final-form rulemaking. Section 207(i)(3) of the act contains flooring standards for dogs over 12 weeks of age. However, dogs under 12 weeks of age are not subject to those same requirements and may be housed on flooring meeting the standards of section 207(h)(2)(x) of the act and § 21.24(d) (relating to shelters). These provisions do not account for or contemplate nursing mothers housed with their puppies or for dams or foster dams housed with dogs less than 12 weeks of age. Therefore, because of the confusion regarding the absence of specific direction in the act, the Department established a standard for this specific situation and added language to the final-form rulemaking delineating that standard. Final-form § 28a.8(e) requires that at least 50% of the flooring of a primary enclosure that contains a nursing mother and her litter or a dam or foster dam and puppies less than 12 weeks of age must meet the flooring standards for the adult dog (that is, those in section 207(i)(3) of the act).

Summary of Major Features

§ 28a.1. Definitions.

This section defines terms utilized in Chapter 28a to further clarify the regulations. The Department made significant amendments to the substantive provisions of this section based on comments received after publication of the proposed rulemaking and on research and input from experts and industry members. As a result, the Department revised the definition of "excessive light" and added definitions to the final-form rulemaking.

The definition of "excessive light" was revised as a result of comments from IRRC and others regarding clarity. The term "excessive light" and the prohibition against excessive light is in section 207(h)(8) of the act. In addition, the prohibition against excessive light is in 9 CFR 3.2(c) and 3.3(c) (relating to indoor housing facilities; and sheltered housing facilities). The final-form rulemaking merely restates the requirements of the act with regard to excessive light. However, since the definition was questioned, the Department, with the assistance of Dr. Karen Overall of the Board, researched what level of lighting would be considered excessive for canines. The result of that research is the definition, which essentially states that direct, undiffused light of an intensity that is 12 foot candles or more greater than the maximum foot candles of light (that the dog is raised in) required by the final-form rulemaking would be considered harmful and therefore "excessive" if it is shining directly into the primary enclosure of a dog.

The definition of "circulation or circulated air" was added to provide clarity to the ventilation provisions in the final-form rulemaking. As stated in the general summary of changes, the Department made significant changes to the ventilation requirements in the proposed rulemaking. The changes were based on input from the engineers consulted. Those engineers also suggested adding this definition and provided and approved the language for the definition.

The definition of “commercial kennel” from the act was added to this section to allow for more clarity for both the regulated community and the general public.

The definition of “CFM—Cubic Feet per Minute,” as set forth more specifically in the comment and response document, based on input from engineers and animal scientists, the Department changed the ventilation measurement standard in the final-form rulemaking from “air exchanges per hour” to CFM per dog. In general, the change allows for a more accurate, objective and consistent measurement that is easier to comply with and verify. It also provides economic advantages with regard to the ability to tailor the ventilation system and the rate of air circulation to the number of dogs housed in the commercial kennel facility.

The lighting provisions of the final-form rulemaking, consistent with section 207(h)(8) of the act, mandate that dogs receive a diurnal light cycle. The proposed rulemaking did not define what that entailed and commentators requested that the Department more fully define or provide substantive language to provide clarity with regard to what pattern of lighting would be considered a diurnal light cycle. The Department decided to define “diurnal light cycle.” The Department consulted animal scientists and Board and Department veterinarians to come up with an appropriate definition. The definition is consistent with normal animal husbandry practices and definitions.

As with the definition of “circulation,” the definition of “fresh air ventilation” is added to provide clarity to the ventilation provisions in the final-form rulemaking. The term was also added because of a comment regarding the phrase “100% fresh air,” which appeared in the proposed rulemaking. The term now helps to define what percent of the ventilated and circulated air in a kennel facility must be “fresh air ventilation,” which is at least 30 CFM of the total ventilated air. The definition was provided and approved by the engineers consulted.

Numerous commentators suggested the Department should define “full-spectrum lighting” in the final-form rulemaking. Full-spectrum lighting is required for commercial kennels that utilize artificial light to illuminate their kennel facility. The Department consulted dictionaries and the Internet and spoke with the engineers in when defining the term. Full-spectrum lighting has been available since the 1930s.

For reasons set forth more fully and specifically in the comment and response document, the final-form rulemaking does not require a reduction in ambient temperatures inside a commercial kennel facility. Instead the final-form rulemaking focuses on appropriate humidity levels. Humidity and temperature levels go hand-in-hand in determining the HI, which is the human-perceived equivalent temperature. High heat and humidity are dangerous to human and animal health. The Department has utilized HI charts and studies to determine the proper HI for dogs. The definition of “Heat Index (HI) or Temperature and Humidity Index (THI)” is taken from the definition established by the United States National Weather Service.

The definition of “professional engineer”—The definition was taken directly from § 139.2a (relating to definitions). This definition was added to account for and give clarity to § 28a.2(b)(1), which was added to the final-form rulemaking. This paragraph requires certification by a professional engineer that the ventilation system in the commercial kennel meets the standards and requirements

of the regulation. This is a one-time requirement and alleviates the necessity for a kennel owner to purchase measurement equipment or attempt to ascertain compliance on his own or to rely on measurements, readings and calculations performed by the Department.

The engineers consulted suggested the Department define the terms “ventilation or ventilating” to provide clarity. The Department agreed and utilized a definition supplied by one and approved by both engineers.

§ 28a.2. Ventilation.

As previously stated, proposed § 28a.2 has been significantly revised, including changing the measurement of ventilation and air circulation to CFM per dog. Provisions regarding auxiliary ventilation, humidity and ammonia standards have been reestablished under a separate section.

The following details specific changes made to § 28a.2 in the final-form rulemaking.

The proposed first sentence is not a regulatory standard and has been removed from the final-form rulemaking.

Proposed § 28a.2(1) regarding the reduction of temperature and removal of dogs once the kennel temperature reaches 85° Fahrenheit has been deleted from the final-form rulemaking. The Office of Attorney General, the House and Senate Committees and IRRC questioned the authority of the Department to require the ambient temperature be reduced to or maintained at 85° Fahrenheit in commercial kennels. While temperature reduction is not prohibited and is preferred, the Department utilized its absolute authority and duty to regulate humidity to account for the health and welfare of dogs in commercial kennels once the temperature rises above 85° Fahrenheit.

Proposed § 28a.2(2) and (3), regarding humidity standards, has been deleted and moved to final-form § 28a.4. The humidity provisions in the final-form rulemaking establish separate and distinct humidity levels for when temperatures in the commercial kennel are at or below 85° Fahrenheit and when the temperature in the kennel facility rises above 85° Fahrenheit. The humidity range for temperatures below 85° Fahrenheit has been broadened to 30%—70% and the humidity ranges acceptable when temperatures rise above 85° Fahrenheit are very specific and based on HI values. The ranges established are based on consultations with engineers, architects, animal scientists and veterinarians, as well as National weather service information, HI standards for animals such as swine, poultry, cattle and humans, a survivability study conducted on dogs and the TACC Weather Safety Scale for dogs. The ranges are based on animal science and evidence of heat stress and are consistent with the ranges engineers suggest are utilized in their designed facilities or are proper and attainable in commercial kennels.

Proposed § 28a.2(4), regarding ammonia levels, has been deleted and moved to § 28a.5. The ammonia level standards, after consultation and discussions with engineers, architects, animal scientists and veterinarians as well as research cited or done by those experts, denoted that 10 parts per million (ppm) was too low to effectively measure and monitor. The consensus of the experts consulted was that a level of 15 ppm or lower was acceptable and proper for animal welfare. They agreed that a level of 20 ppm still caused eye and respiration problems in animals with long term exposure to these levels.

Proposed § 28a.2(5), regarding proper levels of carbon monoxide, has been deleted. The final-form rulemaking reestablishes provisions regarding carbon monoxide since animal scientists and veterinarians agree that the colorless and odorless gas can be harmful or deadly to the dogs. However, § 28a.6 (relating to carbon monoxide detectors) does not set a carbon monoxide level but instead requires carbon monoxide monitors to be installed in a kennel that utilizes a carbon based heating, cooling or ventilating system. This provides the kennel owner with a warning that the dogs and humans in the facility are in danger from high carbon monoxide levels. The expulsion of carbon monoxide and other gases are part of ventilation and regulated under that authority.

Proposed § 28a.2(6), regarding malfunction of the mechanical ventilation system, has been moved to § 28a.2(g). The kennel owner no longer has to consult with the Department on the steps to be taken and the Department will no longer be required to retain an engineer. Instead, under § 28a.2(g)(1)–(4), the kennel owner shall immediately take steps to correct the malfunction or failure and if temperatures rise above 85° Fahrenheit, notify the kennel's veterinarian within 4 hours and notify the Department after 24 hours. The provision sets forth the time period within which notification shall be given and now takes weekends, nights and holidays into consideration. The kennel owner shall contact the kennel veterinarian to consult on dog health issues and notify the Department when the malfunction has been repaired.

Proposed § 28a.2(7), regarding particulate matter, has been deleted from the final-form rulemaking.

Proposed § 28a.2(8), regarding air changes, has been deleted from the final-form rulemaking.

The provisions in proposed § 28a.2(8) have been replaced as follows:

Proposed § 28a.2(8)(i), regarding air exchanges per hour, have been replaced in the final-form rulemaking with a CFM per dog standard in § 28a.2(f)(2) and (4). The rate of 100 CFM per dog per minute is standard practice according to the engineers consulted and comports with the information and suggestions of the animal scientists consulted by the Department. In addition, the 100% fresh air requirement has been deleted from the final-form rulemaking. A minimum of 30 CFM per dog per minute must be fresh air, the rest may be recirculated. This standard also comports with the standards suggested by the engineers and animal scientists. As set forth more fully in the comment and response document, the change to CFM was made after consultations with engineers and animal scientists and provides for a more objective measurement standard. It will also decrease the cost of compliance and monitoring to both the regulated community and the Department.

Proposed § 28a.2(8)(i), (i)(A) and (ii), regarding calculating air exchanges per hour, has been replaced in the final-form rulemaking. The final-form rulemaking now measures ventilation in CFM per dog and certification of the systems by a professional engineer under § 28a.2(b) and (f). This includes information regarding the volume and dimensions of the facility and the total number of dogs to be housed in the facility under § 28a.2(b). In addition, the Department may take periodic measurements and readings under § 28a.2(c)(2).

Proposed § 28a.2(8)(iii), regarding violations, has been deleted. The kennel owner will be in violation of a specific section or subsection with which he does not comply. The related provisions of § 28a.2(8)(iv) have also been deleted.

Proposed § 28a.2(8)(v), which required the Department to hire an engineer if the kennel owner violates a ventilation provision, has been deleted. The kennel owner, not the Department, is responsible for taking steps to attain and assure compliance and the Department does not have authority to require the kennel owner to allow a person who is not an employee of the Department into the kennel.

Proposed § 28a.2(9), regarding signs of illness and stress in dogs, has been moved to § 28a.2(h). The number and type of conditions in dogs that may denote poor ventilation has been reduced. In addition, the signs of stress or illness trigger an investigation of the ventilation, air circulation, humidity levels, HI values and ammonia levels in the area or room of the kennel where those signs exist. If the investigation reveals problems in those areas, then proper enforcement action may be taken by the Department. The mere existence of the signs of stress or illness however, does not in and of itself constitute a violation of these regulations. The type of conditions in dogs and the illnesses or signs of stress listed are associated with conditions that veterinarians have asserted can result from poor ventilation, air circulation, humidity, heat stress or ammonia or carbon monoxide levels that are not within the ranges established by the regulations. For instance, respiratory distress can be associated with humidity and temperature levels or ammonia levels that are too high as well as insufficient air circulation or auxiliary ventilation. Section 28a.2(h)(2) sets forth the signs associated with heat distress or heat stroke, which again denotes insufficient air circulation, auxiliary ventilation or humidity level controls, or both, in that part of the kennel facility. Matted, puffy, red or crusted eyes and listlessness can be associated with high ammonia or high carbon monoxide levels. Fungal and skin disease can denote improper humidity control in the kennel facility.

Proposed § 28a.2(10), regarding dog odor, stale air, moisture and air flow, has been deleted. The final-form rulemaking establishes specific ventilation and ammonia and humidity control mechanisms which, if implemented properly, will control for these factors.

Proposed § 28a.2(11), regarding filtering the air with small particle, nonozone producing air filters, has been moved to § 28a.2(f)(5). The filtration standards merely require a common minimum efficiency reporting value (MERV) rated filter that can be acquired at a home building supply store. The minimum MERV value is 8. This is standard practice in kennel facilities designed by the engineers consulted.

Proposed § 28a.2(12), regarding applicable codes, has been deleted. As set forth more fully in the comment and response document, the Department does not have authority to regulate applicable Federal, State or local building codes.

The following subsection have been added to § 28a.2 in the final-form rulemaking.

Section 28a.2(a) amends the introductory language of proposed § 28a.2. The new language still requires a mechanical ventilation system, but adds the word "functional" for more clarity and to denote it must be able to ventilate and circulate air. The system must also be in operation at all times to meet the 100 CFM per dog air circulation standards of the section. The 100 CFM per dog standard was set in conjunction with consultations with engineers that design and build kennel facilities and utilize this rate as a standard in those kennel designs

and in response to animal scientists who suggested a CFM rating per dog was more objective and fair. The CFM rate per dog allows a kennel owner to provide ventilation on a basis that takes into account the number of dogs in the kennel facility.

The final-form rulemaking also adds language to this section that makes it clear the system must meet the requirements in §§ 28a.3—28a.6. These sections have been set forth as independent, but related, sections for clarity and form.

Final-form § 28a.2(b), regarding certification of ventilation system, requires written certification from a professional engineer attesting that the system was designed or inspected by a professional engineer and that it meets the standards and requirements of the ventilation, auxiliary ventilation, humidity and ammonia control sections of the final-form rulemaking and that carbon monoxide monitors are installed where necessary. It also requires the submission of information setting forth the dimensions of the kennel, a description of the mechanical ventilation equipment, including CFM ratings, and the humidity control and auxiliary ventilation equipment or system to be utilized as well as the highest number of dogs upon which the certification was based. The latter information will allow the Department to assure that changes have not been made to the certified system going forward. Engineers shall also set forth where the temperature and humidity monitors required by the regulations shall be installed. The time line for submission of certification is in § 28a.2(b)(2) and (3).

The certification requirement as a whole was implemented in response to comments questioning the subjectivity and expense of kennel owners and State dog wardens having to take individual readings on each visit to assure compliance. Commentators wanted a more objective approach that would be less costly and time consuming to both the regulated community and the Department. By requiring a one-time certification (unless recertification is required based on the standards of that provision), the kennel owner and the Department are assured by an independent, professional party that the system installed, if operated correctly, meets the requirements of the regulation. In addition, the engineers consulted have verified that they would already be certifying any system they designed or inspected and that there are enough engineers to handle the certification process that would have to take place in this Commonwealth. This process lowers the cost of compliance, allows for a completely objective approach to assuring compliance and interjects a third party chosen by the kennel owner to design or retrofit the kennel to comply with the regulatory standards. The party shall be a licensed professional engineer who is familiar with the standards of the regulations and can assure the system installed meets all the parameters of the regulations.

Final-form § 28a.2(c), regarding inspection, establishes the general minimum criteria and standards regarding the ventilation, auxiliary ventilation and humidity control systems that will be reviewed and checked during each kennel inspection by a State dog warden or other employee of the Department.

Final-form § 28a.2(d), regarding recertification, requires a kennel owner to have his ventilation, auxiliary ventilation or humidity control system recertified by a professional engineer if he is found to be in violation of the ventilation, auxiliary ventilation, humidity or ammonia level requirements in the final-form rulemaking.

Final-form § 28a.2(e), regarding ventilation and circulation, sets forth the general standard provided for in the proposed rulemaking requiring mechanical ventilation equipment. It sets forth additional objective and clarifying language requiring the system to physically move air, provide ventilation, fresh air exchange, circulation, heating, dehumidification and filtration and gives examples of the type of equipment that may be included. The mechanical system is necessary to provide and meet the CFM ventilation requirements in the regulations. The CFM rates are established based on consultations with engineers that design kennel facilities, animal scientists and veterinarians.

Final-form § 28a.2(f), regarding standards, establishes general and specific ventilation rates for the area of kennels and kennel facilities that house dogs.

Paragraph (1) establishes the general criteria that ventilation and circulation, at the required rates, be provided throughout the kennel and kennel housing facility where dogs are housed, kept or present. Paragraph (2) establishes the circulation rate at 100 CFM per dog per minute. This rate is consistent with the rates espoused by animal scientists and engineers that design and build kennel housing facilities. The rate will provide proper ventilation and air circulation. The CFM per dog will be required to be increased when temperatures in the kennel and kennel housing facility rise above 85° Fahrenheit and auxiliary ventilation is required.

Paragraph (3) requires the ventilation system to have the capacity to meet the CFM per dog rate established in paragraph (2) by requiring the capacity to be based on the highest total number of dogs held in the kennel at any one time.

Paragraph (4) no longer requires 100% fresh air, but instead allows air to be recirculated in the kennel. It requires that at least 30 CFM per dog of the circulated air be fresh air, as defined in the final-form rulemaking. The engineers and animal scientists consulted set this standard as a common animal husbandry practice and a standard that will protect the health and welfare of the dogs. In addition, the recirculated air standard will allow kennel owners to control humidity and ammonia levels in the kennel facility and reduce heating costs in the winter months.

Paragraph (5) requires a standard air filter meeting at least a MERV 8 efficiency. These filters are standard filters utilized in ventilation and air circulation systems and can be found in most building supply stores. The standard was suggested by and agreed upon by the engineers and animal scientists consulted.

Paragraph (6) establishes the design and placement of the ventilation to assure it provides proper circulation of air to the dogs housed in the kennel facility. The engineers consulted suggested and agreed upon the language.

Final-form § 28a.2(g), regarding malfunctions, establishes general and specific requirements and actions a kennel owner shall take in response to a mechanical malfunction or failure of the ventilation system. This section prescribes notice provisions for when the temperature inside the kennel exceeds 85° Fahrenheit and requires the kennel owner to consult with his veterinarian regarding canine health issues. When temperatures in the kennel building exceed 85° Fahrenheit during the malfunction or breakdown, the kennel owner has a 4-hour time period to correct the malfunction, after which he shall consult his veterinarian regarding dog health issue and begin recording temperature and humidity levels

within the kennel facility. This is consistent with the 4-hour window provided for humidity levels and dog health issues in other parts of the final-form rulemaking. The kennel owner shall notify the Department of the malfunction if it exceeds 24 hours and temperatures in the kennel are above 85° Fahrenheit.

§ 28a.3. *Auxiliary ventilation.*

In this final-form rulemaking, the Department added § 28a.3 to address auxiliary ventilation. This was done to provide more clarity to the final-form rulemaking, both with regard to notification of specific standards to the regulated community and authority under the act. The auxiliary ventilation standards were not clearly or specifically set forth in the proposed rulemaking. The auxiliary ventilation provisions are within the mandates of the act. Sections 207(h)(7) of the act requires that “. . . The Canine Health Board shall determine auxiliary ventilation to be provided if the ambient air temperature is 85° F or higher.”

The specific changes made to the final-form rulemaking regarding auxiliary ventilation are summarized as follows:

Final-form § 28a.3(a) sets forth the general standard required under section 207(h)(6) and (7) of the act, regarding the requirement that auxiliary ventilation be utilized in any part of a kennel facility where dogs are present, housed or kept, when the temperature in the kennel rises above 85 degrees F. It provides the clarity that the auxiliary ventilation is to be provided in addition to (auxiliary), not in place of the required ventilation and humidity standards of the regulation. The kennel must still maintain the ventilation and humidity controls required by the regulation. It also provides that in the event of a malfunction or failure of the primary ventilation system, the auxiliary ventilation system may be utilized.

Final-form § 28a.3(b) sets forth auxiliary ventilation devices and techniques that may be utilized by the kennel owner. They are based on discussions with an AKC senior breed field representative that has knowledge of techniques currently utilized in breeding kennels and were reviewed and approved by engineers consulted by the Department. These techniques and devices are not the only ones that can be utilized. The section provides guidance to the regulated community regarding what may be utilized.

§ 28a.4. *Humidity levels.*

Sections 207(h)(7) and 221(f) of the act confer upon the Board and the Department, as the promulgating agency, the authority and absolute duty to establish humidity levels that account for the health and welfare of dogs housed in commercial kennels. Section 207(h)(7) of the act states that “Housing facilities for dogs must be sufficiently ventilated at all times when dogs are present to provide for their health and well-being and to minimize odors, drafts, ammonia levels and to prevent moisture condensation” and that “The relative humidity must be maintained at a level that ensures the health and well-being of the dogs housed therein. The appropriate . . . humidity . . . ranges shall be determined by the Canine Health Board.” Section 221(f) of the act, regarding the purpose of the Board, states that “The board shall determine the standards based on animal husbandry practices to provide for the welfare of dogs under section 207(h)(7) . . .”

The standards in final-form § 28a.4(a)—(4) are based on discussions with engineers that build and design

kennel housing facilities, animal scientists from PSU and veterinarians from the Board and the Department.

With regard to the standard humidity range in final-form § 28a.4(a)(1), the humidity range of 30%—70% when temperatures are below 85° Fahrenheit is a standard range utilized in most animal husbandry practices. This is according to the experts consulted. The engineers and some veterinarians believed the range should be tighter (40%—65%), but the Department chose to utilize the greater range, since the experts consulted did not believe that range would be detrimental to the welfare of the dogs.

With regard to the humidity levels to be established when temperatures in a kennel facility rise above 85° Fahrenheit, the Department utilized the HI. The HI combines the effects of temperature and humidity to come up with an HI value. The HI value establishes what a certain temperature and humidity combined actually feels like. An HI does not require the control of temperature. It allows for higher temperatures, so long as humidity is properly controlled. It gives kennel owners more flexibility than the Federal regulations and allows the Department to determine the humidity level that must be attained, when temperatures are above 85° Fahrenheit, for the kennel facility to be at a value that will account for the welfare of the dogs housed therein.

The science behind controlling humidity to allow for proper animal welfare is that the higher the humidity level, the more water vapor the air is holding or carrying. The more water vapor in the air, the harder it is for an animal to cool its internal body temperature, since cooling of the body is not achieved through mere perspiration or panting, but rather through the absorption of the perspiration by the air passing over the skin of an animal or the tongue of the dog. Air containing high levels of humidity cannot absorb the perspiration on the skin or water on the dogs tongue and cooling does not occur or is less efficient. This is why high temperatures and high humidity combine to form heat stress dangers. It is also the reason that merely blowing a larger volume of hot, humid air over a dog or other animal will not allow for additional cooling of the internal body temperature of that animal.

Final-form § 28a.4(a)(2) addresses the humidity range, expressed in an HI value, that must be achieved when the temperature in any part of the kennel housing facility rises above 85° Fahrenheit. The HI value of 85 established by this section is based on HI charts that apply to other animals, such as swine, cattle and fowl, and also on HI values that apply to humans. In all cases, an HI that is higher than 85 begins to put these animals into a heat stress danger. Most of these animals have body cooling systems that are more efficient than those of dogs, with humans being the most efficient. Therefore, the Department believes an HI value of 85 for dogs is the most conservative regulatory approach the Department can take and still provide a humidity level that accounts for the welfare of dogs. The engineers, animal scientists and veterinarians consulted agree an HI value of 85 is appropriate. In addition, the 85 HI value is consistent with the temperature extremes regulated by the Animal Welfare Act, which requires kennel owners to reduce temperature levels in kennels to 85° Fahrenheit (see 9 CFR 3.2(a) and 3.3(a)). It allows a 4-hour window to achieve that temperature. The temperature extreme is consistent with the heat stress indexes previously referenced. Furthermore, a survivability study conducted on beagles entitled “A Temperature/Humidity Tolerance In-

dex for Transporting Beagle dogs in Hot Weather,” which was sponsored by the Federal Aviation Administration, supports the heat stress tolerances established by this section, as does the TACC Weather Safety Scale for dogs.

Final-form § 28a.4(a)(3) establishes a window of time, once the temperature in the kennel rises above 85° Fahrenheit, for kennel owners to address humidity levels to comply with the 85 HI requirement. The 4-hour window is consistent with the 4-hour window in 9 CFR 3.2(a) and 3.3(a), in which a kennel owner shall achieve a temperature of 85° Fahrenheit.

The final-form rulemaking does not require a temperature reduction and temperatures in the kennel facility may remain above 85° Fahrenheit after the 4-hour period, but the humidity levels within the kennel facility shall have been adjusted to comply with and achieve an HI value of 85. In addition, the 4-hour window is consistent with previously referenced survivability study conducted on beagles. The survivability study, as well as the TACC criteria, specifically the TACC Weather Safety Scale, authored by Dr. Gary Patronek, then-director of the Center for Animals and Public Policy at Tufts University School of Veterinary Medicine and first published in *Recognizing and Reporting Animal Abuse: A Veterinarian's Guide*, form the basis for setting the HI cap of 90. A kennel facility may not go above an HI value of 90 and may not exceed that value during the 4-hour window. The survivability study and the TACC Weather Safety Scale are generally acknowledged to be the only two scholarly resources that give specific heat-related safety guidance applicable to canines.

The survival study establishes scientific evidence that most breeds of dogs would not survive for more than 6 hours in conditions when the HI rose above 95—98. The study is a survival study, so it does not mean that conditions of 95—98 HI are proper or should be sustained for any length of time. An upper cap of 90 HI that may not be crossed was established using both this study and the TACC Weather Safety Scale.

Kennel owners shall still utilize auxiliary ventilation immediately upon the temperature reaching 85° Fahrenheit and should begin to immediately take action to decrease humidity levels to assure the 85 HI value is met and maintained. Again, this is the most conservative regulatory approach the Department felt it could take and, based on scientific evidence, still protect the health and welfare of dogs.

Final-form § 28a.4(a)(4) sets forth how the HI shall be calculated and provides an objective standard for both the regulated community and the Department regulator. The HI charts are codified in Appendix A. The Department has also provided the web site where the HI calculation can be performed and provided examples of HI values.

The Department consulted engineers to assure the humidity levels associated with the HI values could be achieved and that kennels could be built or retrofitted or employ dehumidification devices that would allow them to meet the standards. The engineers assured the Department that these humidity levels could be achieved in commercial kennels and systems could be designed or dehumidification devices placed to assure compliance.

Final-form § 28a.4(a)(5) sets forth a moisture condensation requirement that is consistent with section 207(h)(7) of the act, which requires that “Housing facilities for dogs must be sufficiently ventilated at all times when dogs are present to provide for their health and well-being and . . . to prevent moisture condensation. . . .”

Final-form § 28a.4(b)(1), regarding measurement and control standards, delineates and sets clear and objective standards regarding when and how humidity level readings shall be taken. A primary concern throughout the comments was that the regulation establishes clear standards, including standards denoting how the regulation would be enforced and the measurement standards to be utilized. This language provides the regulated community and the Department clarity with regard to enforcement of this provision.

Final-form § 28a.4(b)(2) establishes the standards the measuring devices must meet and sets forth the requirement that the Department pay for and own the devices. The Department researched devices on the market to assure they met the standards established by this paragraph and were readily available. The Department also checked with the engineers to assure the devices met their approval. In establishing this paragraph, the Department took into account numerous comments that called for a more objective standard for measuring devices and a standard that would reduce the cost to the regulated industry. This paragraph accomplishes both goals. There will be only one standard type of measuring device that must meet standards established by the regulation. The Department will pay for and install the devices in accordance with the recommendations of the engineer certifying the kennel. Both the kennel owner and the Department may refer to the devices, the kennel owner to assure he is meeting the standards on an hourly and daily basis and the Department to assure the kennel is complying with the humidity requirements in the regulation. The final standard is completely objective, standardizes the measurement devices and reduces the cost to both the regulated community and the Department (both equipment costs and the time cost associated with taking measurements utilizing hand-held devices).

Final-form § 28a.4(b)(3) delineates what Department inspectors will look for and what is required to establish some evidence that the kennel can regulate humidity.

Final-form § 28a.4(b)(4) sets an objective cooling capacity requirement if air conditioning is utilized in the kennel facility. The requirements were established by the engineers consulted.

Final-form § 28a.4(b)(5) and (6) makes it clear that the humidity monitoring devices may not be tampered with or changed in any manner by any person other than a State dog warden or employee of the Department. This will maintain the integrity of the readings and assure the readings are accurate and not able to be manipulated or changed.

Final-form § 28a.4(b)(7) addresses the concerns expressed by some commentators regarding proper calibration of measurement devices and the frequency at which measuring devices will be checked to assure proper accuracy.

Final-form § 28a.4(b)(8) establishes enforcement standards regarding monitoring devices.

§ 28a.5. Ammonia levels.

Sections 207(h)(7) and 221(f) of the act confer upon the Board and the Department, as the promulgating agency, the authority and the absolute duty to establish ammonia levels that account for the health and welfare of dogs housed in commercial kennels. Section 207(h)(7) of the act states that “Housing facilities for dogs must be sufficiently ventilated at all times when dogs are present to provide for their health and well-being and to minimize odors, drafts, ammonia levels. . . . The appropriate . . . am-

monia ranges shall be determined by the Canine Health Board.” Section 221(f) of the act, regarding the purpose of the Board, states that “The board shall determine the standards based on animal husbandry practices to provide for the welfare of dogs under section 207(h)(7). . . .”

The level in § 28a.5(a) was established after consultations with veterinarians and animal scientists. The consensus was that levels of 10 ppm were too low to be accurately measured, but that levels of 20 ppm were too high for long term exposure. Therefore, the agreement was that a level of 15 ppm or lower was the appropriate standard. The 20 ppm decision was based on the expertise of the veterinarians and animal scientists and their experience with animal husbandry and the effects of ammonia levels of 20 ppm on the eyes and respiratory system of agricultural animals. The measurement standards in subsection (b) were established because the science around ammonia establishes that it is a heavy gas that will be found close to the floor of an enclosed building. The consensus of the engineers and the veterinarians was that the readings should therefore be taken at the level of the dogs.

§ 28a.6. *Carbon monoxide detectors.*

Sections 207(h)(7) and 221(f) of the act confer upon the Board and the Department, as the promulgating agency, the authority and the absolute duty to establish proper ventilation rates that account for the health and welfare of dogs housed in commercial kennels. Section 207(h)(7) of the act states that “Housing facilities for dogs must be sufficiently ventilated at all times when dogs are present to provide for their health and well-being and to minimize odors, drafts, ammonia levels and to prevent moisture condensation. . . . The appropriate . . . ventilation . . . ranges shall be determined by the Canine Health Board.” Section 221(f) of the act states that “The board shall determine the standards based on animal husbandry practices to provide for the welfare of dogs under section 207(h)(7). . . .” The definition of “ventilation” in § 28a.1 (meeting the engineers’ approval) includes “. . . replacing air in any space to control temperature and humidity or remove moisture, odors, smoke, heat, dust, airborne bacteria, carbon monoxide, carbon dioxide, and to replenish oxygen.”

The Department, after consulting with the engineers, animal scientists and veterinarians from the Board and the Department and reviewing comments, determined that carbon monoxide should be monitored to assure the proper ventilation ranges are being achieved and to assure the welfare of the dogs. Carbon monoxide is an odorless and colorless gas that is deadly if there is prolonged exposure to a range that is too high. The persons consulted felt it was absolutely necessary to, while not establishing ranges, at least monitor for the gas. The final-form rulemaking does not include a set range, instead requiring the installation of common carbon monoxide monitoring devices in kennels that utilize carbon monoxide emitting devices. The regulation is tailored only to kennels that may have a carbon monoxide build up, sets an objective standard by requiring common detection devices to be installed and does not add a big equipment or monitoring cost to the regulation.

§ 28a.7. *Lighting.*

Section 28a.7 (relating to lighting) delineates lighting standards for both natural and artificial light in accordance with the duty and requirements in section 207(h)(8) of the act.

The Department agreed with the comments that the first sentence was not proper regulatory language and

deleted that sentence from the final-form rulemaking. In addition, the final-form rulemaking does not require natural light or some of the mandates in the proposed rulemaking associated with providing natural light.

The Department deleted from the final-form rulemaking what was in proposed § 28a.3(1)(i)—(vi). This paragraph related to natural lighting. The Department agrees there is no legal authority to require natural light when the act states light shall be provided by natural or artificial means.

The provisions deleted from the final-form rulemaking required the following: subparagraph (i), each dog have exposure to natural light through windows, skylights or other external openings; subparagraph (ii), a total combined minimum amount of the kennel area that must be external openings, such as windows or skylights (8% of the floor space); subparagraph (iii), dogs be protected from excessive light (this requirement is in the act and has been retained in the final-form rulemaking); subparagraph (iv), provide an outdoor area of shade; and subparagraphs (v) and (vi) set requirements that kennels receiving approval to provide indoor exercise only be required to be configured in a manner that would provide natural light to each primary enclosure and provide full spectrum lighting.

In addition, proposed § 28a.3(2)(i)—(v) set forth requirements for artificial lighting. Those standards have been revised in the final-form rulemaking, as described in more detail as follows.

The Department added provisions to the final-form rulemaking that allow for natural or artificial lighting, or both. The final-form rulemaking provides general lighting standards that apply to both natural and artificial lighting and specific standards that apply only to natural or artificial lighting.

Section 28a.7(a) provides the general lighting standards that apply to all lighting, from either natural or artificial means. These general standards in § 28a.7(a)(1)—(3) and (5) mirror section 207(h)(8) of the act, which states that “Housing facilities for dogs must be lighted well enough to permit routine inspection and cleaning of the facility and observation of the dogs. Animal areas must be provided a regular diurnal lighting cycle of either natural or artificial light. Lighting must be uniformly diffused throughout housing facilities and provide sufficient illumination to aid in maintaining good housekeeping practices, adequate cleaning and observation of animals at any time and for the well-being of the animals. Primary enclosures must be placed so as to protect the dogs from excessive light. The appropriate lighting ranges shall be determined by the Canine Health Board.”

Section 28a.7(a)(1) relates to sufficient lighting to allow for observation and maintenance provisions of the act.

Section 28a.7(a)(2) relates to uniform diffusion of the lighting.

Section 28a.7(a)(3) sets forth the diurnal lighting cycle language from the act.

Section 28a.7(a)(4) establishes the lighting ranges that shall be provided to carry out the mandates in section 207(h)(8) of the act. The Department changed these standards in the final-form rulemaking. The revisions were based on additional research and consultations undertaken by the Department in response to comments that stated the lighting ranges in the proposed rulemaking, up to 80 foot candles, were excessive. The standards established in the final-form rulemaking,

40—60 foot candles, are based on NIH standards and the fact that exam rooms at PSU require lighting of 40—60 foot candles. The Department, with the assistance of members of the Board and Department veterinarians, did additional research into the issue of the proper illumination levels in kennels. In addition, the Department spoke with animal husbandry scientists at PSU and with engineers who design kennel buildings. The consensus was that 40—60 foot candles of light is necessary to assure proper animal husbandry practices, including the ability to monitor the dogs, assure sanitation and cleanliness of the kennel (compliance with statutory and regulatory standards) and provide for the proper health and welfare of the dogs.

Section 28a.7(a)(5) reiterates the exposure to excessive light standard in the act.

Section 28a.7(b) establishes additional standards that are specific to natural light and artificial light sources.

With regard to natural light, in § 28a.7(b)(1), the Department followed the language in the Animal Welfare Act requiring that a window or opening, with the exception of the openings that provide for unfettered access to the exercise area, which provides natural light shall be covered with a transparent material such as glass or hard plastic and remain unobstructed.

With regard to artificial light, the Department made the following changes to proposed § 28a.3(2) (final-form § 28a.7(b)(2)(i)—(iii)).

Section 28a.7(b)(2)(i) requires that artificial lighting be provided by full spectrum lighting. Full spectrum lighting is the only lighting source that nearly approximates the spectrum of light provided by the sun. According to the veterinarians consulted by the Department, natural sunlight is important for the health of dogs housed in kennels for vitamin D levels and eye development, among other issues. Therefore, the lighting to be provided has been determined to be full spectrum, which most closely imitates the spectrum and wavelengths of light received from the sun. The Department moved the foot candle provisions from this section and to the general standards of the final-form rulemaking. In addition, the foot candle standard was reduced from 50—80 to 40—60 foot candles.

The Department deleted the requirement in proposed § 28a.3(2)(ii) regarding providing night time artificial lighting. The purpose of this subparagraph was to provide some low level lighting to allow for the natural startle responses. However, it became apparent from the comments received that the subparagraph was causing confusion. The veterinarians consulted agreed the provision could be taken out without harming the welfare of the dogs.

Proposed § 28a.3(2)(iii) was deleted and similar language was moved to the general provisions of the final-form rulemaking.

The Department amended proposed § 28a.3(2)(iv), final-form § 28a.7(b)(2)(ii). After consulting with Board members, it became apparent that the intent of the subparagraph was to assure the lighting was kept in good repair. The Department removed the phrase “may not have a visible flicker” and utilized language that brings clarity and objectivity to the subparagraph.

The Department amended proposed § 28a.3(2)(v), final-form § 28a.7(b)(2)(iii). The purpose of the subparagraph was to assure the lighting sources are placed and utilized in a manner that will not cause injury to a dog. The new language more clearly expresses the intent and gives examples.

Proposed § 28a.3(3), regarding applicable codes, has been deleted from the final-form rulemaking. Local codes vary and are enforced by the local township, borough or municipality. The Department could not know all applicable local codes and does not have authority to enforce those codes. Kennel owners will be required by local and Federal code officials to comply with applicable codes.

§ 28a.8. Flooring.

The final-form rulemaking, at the suggestion of IRRC and other commentators, has been amended to delineate the flooring standards established by the act and set forth alternative flooring standards in a separate subsection. This should provide the regulated community with more clarity regarding the standards established by the act and the regulation.

Section 28a.8(a)(1) and (2) reiterates the flooring standards in section 207(h)(9) and (i)(3)(i) of the act.

Section 28a.8(b) reiterates the flooring requirements in section 207(i)(3)(ii) of the act, regarding slatted flooring.

Section 28a.8(c) sets forth the Board’s authority under section 207(i)(3)(iii) of the act and is inserted to provide clarity to the regulated community.

Section 28a.8(d) establishes standards for additional flooring options and maintains most of the standards set forth by the Board in its guidelines and in the proposed rulemaking.

Proposed § 28a.4(1) was deleted and combined with proposed § 28a.4(2) to form § 28a.8(d)(1). The Department, in response to comments, added clarifying language to this provision. The clarifying language nearly mirrors the language of the Animal Welfare Act regulations regarding proper drainage.

Section 28a.8(d)(2) was revised to denote that when a drain is provided, it must have a drain cover. The purpose of a drain cover is to assure a dog’s foot, paw or pad will not become stuck or be harmed by an open drain.

Section 28a.8(d)(3) amends proposed § 28a.4(4). The revisions were made in response to comments that stated the provisions needed more clarity. The Department more closely set forth the intent of the provision, which is that materials that may harm the dog because they become exceptionally hot when exposed to direct rays of the sun or a heating source may not be utilized. The Department also separated the provision regarding radiant heat flooring from this provision.

Section 28a.8(d)(4) was added after consultation with the Department’s Bureau of Dog Law Enforcement (Bureau) and Board veterinarians to address animal husbandry and dog welfare issues not addressed in the proposed rulemaking. The Board is required to address these issues, under section 221(f) of the act, when reviewing alternative flooring options. The Bureau has witnessed the foot and pad problems in § 28a.8(d)(4). These are the very problems and dog welfare issues the act was intended to rectify. The language of this provision makes it clear that alternative flooring that would continue to cause the problems delineated in the provision is not acceptable.

Section 28a.8(d)(5) was added to specifically address the use of radiant heat flooring or floor cooling systems. Radiant heat floors were addressed in the proposed rulemaking. Commentators expressed confusion regarding the language and requested more clarity. The revised language is intended to add clarity and objectivity.

Proposed § 28a.4(5), regarding applicable codes for drains, has been deleted. The Department cannot know the separate applicable local codes, nor does the Department have the authority to enforce local codes. Kennel owners will be required by local and Federal code officials to comply with applicable codes.

Section 28a.8(d)(6) revises proposed § 28a.4(6). The revisions were made in response to comments suggesting the language of the proposed rulemaking was not clear or objective enough. The new language adds clarity and objectivity. Examples of materials were deleted because they seemed to cause confusion as to whether they were the only materials allowed and since the new language adds clarity.

Section 28a.8(d)(7) was revised to add clarity. The new language is consistent with the act and the Department's regulations and references the applicable provisions. This should add the clarity and objectivity necessary for compliance and enforcement.

Section 28a.8(d)(8) was revised in response to comments regarding clarity.

Section 28a.8(e) was added to provide clarity and harmonize the flooring standards in the act that relate to dogs under 12 weeks of age and dogs over 12 weeks of age. The act does not enumerate a specific standard for flooring in primary enclosures containing nursing mothers and their litters of dams and foster dams with puppies less than 12 weeks of age. This final-form rulemaking establishes a percentage of flooring that is required to meet the adult dog flooring provisions in section 207(i)(3) of the act and which the Department believes will allow enough room for the adult dog and puppies to avoid the wire flooring, but also allows an area of wire flooring to address the concerns of the PVMA and other veterinarians regarding the puppies' waste not remaining in the primary enclosure, soiling the puppies and resulting in either the puppies or the mother dog eating the feces.

§ 28a.9. Scope and effective date.

This section was added to clarify that the regulations pertain only to commercial kennels. This section also establishes the effective date of the regulations.

Fiscal Impact

Commonwealth

The final-form rulemaking imposes additional fiscal impacts upon the Bureau. As set forth more specifically in the Regulatory Analysis Form, the cost to the Commonwealth, in the first year of the regulations, will be approximately \$64,825. The general breakdown of those first year costs are as follows: \$30,000 for computer programming upgrades and changes to existing forms; \$16,539 for humidity/temperature data loggers that will be purchased and installed by the Department; \$13,000 to equip the kennel inspectors with the necessary light, ammonia and other measurement devices; and \$5,000 for training costs. Those costs will be paid for entirely from the Dog Law Restricted Account. General fund money will not be used. The Department provided in the Regulatory Analysis Form an estimate of costs to the Bureau to enact and enforce the new regulatory standards that would be imposed by the final-form rulemaking.

Political subdivisions

The addition of mechanical ventilation, additional artificial or natural lighting and flooring changes may require Pennsylvania Uniform Construction Code (UCC)

permit and inspections. This should not specifically increase or decrease costs to local governments. Documentation from the Department of Community and Economic Development's Center for Local Government Services confirmed that municipalities are collecting fees to cover the expenses of UCC administration and enforcement, so that final-form rulemaking will not have a fiscal impact on municipalities. Additional workload generated by the final-form rulemaking will be offset by the fees collected in association with the specific permit.

The enforcement of the final-form rulemaking will neither increase nor decrease costs to local governments. Compliance with the ventilation, lighting and additional flooring standards required under Class C kennels standards will be enforced solely by the Department. Local governments will not have roles in enforcement or other areas associated with the final-form rulemaking.

Most municipalities do not have commercial kennels. The majority of commercial kennels are in 10 of the 67 counties in this Commonwealth and more than half are in Lancaster County. Commercial kennels represent about 6% of the total number of kennels regulated by the Department.

Private sector

The final-form rulemaking will impose additional costs, most of which will be imposed for initial compliance, on the regulated community (Class C kennels). Class C kennels will likely have to make changes (some significant depending on the current state of their kennel operation) to comply with the ventilation, humidity, ammonia and lighting provisions of the final-form rulemaking. The flooring provisions of the final-form rulemaking actually expand the type of flooring allowed under section 207(i)(3) of the act and do not impose new requirements. The costs to the regulated community will be varied depending on the size and condition of the existing kennel. The Department provided in the Regulatory Analysis Form an estimate of costs for a commercial kennel to comply with the final-form rulemaking, assuming the kennel does not comply with any of the provisions and would not meet current Federal regulatory standards. The costs include the cost to install and operate (on a daily basis) the proper ventilation, auxiliary ventilation systems and lighting systems that meet the ventilation, humidity, ammonia and lighting standards of the regulation. They also include the cost of any monitoring equipment and the cost of replacing light bulbs and general maintenance. The highest total cost for a kennel in the first year would be approximately \$59,000.

The breakdown of costs are based on a 1,500 square foot kennel, which could house about 100 dogs, and generally fall into the following categories: (1) design, installation and certification of the ventilation, auxiliary ventilation, humidity and ammonia systems—\$12—\$25 per square foot which equals \$37,500 at the top end; (2) yearly operation of the systems and cost of lighting and maintenance and replacement bulbs—estimated at \$6,400 per year at the top end; (3) cost to install and maintain a full spectrum lighting system—\$12,000—\$13,500 assuming that infrastructure or wiring is not in place; (4) the cost to install flooring meeting the adult standards in section 207(i)(3) of the act in at least 50% of the floor area in primary enclosures housing nursing mothers or dams and puppies less than 12 weeks of age—\$39—\$210; and (5) cost to buy measuring tools, which is not absolutely necessary, of just under \$1,000. The total high end cost in the first year of the regulation would be approximately \$58,610.

Fifty of the 111 remaining commercial kennels are currently licensed by the United States Department of Agriculture and subject to the Animal Welfare Act and its attendant regulations. Those regulations already require kennels to be heated to at least 50° Fahrenheit and kennel owners to reduce temperature levels in kennels to 85° Fahrenheit (see 9 CFR 3.2(a) and 3.3(a)). It allows a 4-hour window to achieve that temperature. In addition, 9 CFR 3.1(d) currently requires licensed kennels to have “. . . reliable electric power adequate for heating, cooling, ventilation, and lighting, and for caring out other husbandry requirements in accordance with the regulations in this subpart.” Ventilation, under the Federal standards, may be provided by “. . . windows, vents, fans, or air conditioning. Auxiliary ventilation, such as fans, blowers, or air conditioning must be provided when the ambient temperature is 85 degrees F . . . or higher. The relative humidity must be maintained at a level that ensures the health and well-being of the dogs . . . housed therein, in accordance with the directions of the attending veterinarian and generally accepted professional and husbandry practices.” Therefore, the commercial kennels regulated under this final-form rulemaking should already be utilizing some type of auxiliary ventilation when temperatures are above 85° Fahrenheit, should be providing appropriate humidity control and should be doing so in accordance with proper animal husbandry practices, as established by a veterinarian. They should be incurring some electrical, cooling and heating costs and lighting costs under 9 CFR 3.2(c) and 3.3(c).

The remaining commercial kennels are subject to the Department’s current regulatory requirements for lighting, ventilation, auxiliary ventilation and temperature and humidity levels, which are vague, but do require some type of systems to be in place.

The ventilation, humidity and lighting standards in the final-form rulemaking add the specificity (required by the act) that is not part of the current Federal or State regulations. The standards established in the final-form rulemaking were done in consultation with veterinarians from the Board who did research into the appropriate ranges and standards required for proper animal husbandry practices and were reviewed and confirmed by Department veterinarians, animal scientists and engineers that build and design kennel housing facilities. The final-form rulemaking imposes specific and objective ranges, as required by the act. Those ranges are based on animal husbandry practices, data, research and expert advice.

General Public

The final-form rulemaking may raise the cost of purchasing a dog and therefore may affect purchasers of dogs. The Department, however, does not have a way to know or calculate if increases will occur, how much increases would be or if they would be implemented by all commercial kennels. The general public will benefit from the final-form rulemaking, as the standards are intended, as were the amendments to the act that precipitated the final-form rulemaking, to improve the health and welfare of the dogs and puppies that are sold to the general public. There are no mandatory requirements imposed on the general public by the final-form rulemaking.

Paperwork Requirements

The Department will not have to develop a large array of new application forms or review procedures, but will have to amend current kennel inspection forms and implement changes to the current computer program

regarding kennel inspection. The Department has already worked with its IT department to develop and implement these changes. As set forth in the Regulatory Analysis Form, the total estimated cost to make these changes is \$30,000.

Effective Date

The final-form rulemaking has an effective or compliance date of July 1, 2011.

Additional Information

Further information is available by contacting the Department of Agriculture, Bureau of Dog Law Enforcement, 2301 North Cameron Street, Harrisburg, PA 17110-9408; Attn: Special Deputy Secretary Jessie Smith, (717) 214-3447 or Bureau Director Sue West, (717) 787-4833. A copy of the final-form rulemaking, Regulatory Analysis Form and the comment and response document can be found at the Department’s web site: www.agriculture.state.pa.us.

Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P. S. § 745.5(a)), on September 12, 2009, the Department submitted a copy of the notice of proposed rulemaking, published at 39 Pa.B. 5315, to IRRC and the Chairpersons of the House and Senate Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing the final-form rulemaking, the Department has considered all comments from IRRC, the House and Senate Committees and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P. S. § 745.5a(j.2)), on August 18, 2010, the final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on August 19, 2010, and approved the final-form rulemaking.

Findings

The Department finds that:

(1) Public notice of intention to adopt this final-form rulemaking has been given under sections 201 and 202 of the act of July 31, 1968 (P. L. 769, No. 240) (45 P. S. §§ 1201 and 1202) and the regulations thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) A public comment period was provided as required by law and all comments received were considered.

(3) Amendments to this final-form rulemaking in response to comments received were made. The amendments were within the scope of the original proposed rulemaking and the purpose of the proposed rulemaking published at 39 Pa.B. 5315 was not enlarged.

(4) The adoption of the final-form rulemaking in the manner provided in this order is necessary and appropriate for the administration of the act.

Order

The Department, acting under the act, orders that:

(a) The regulations of the Department, 7 Pa. Code, are amended by deleting a Statement of Policy in §§ 28.1—28.3 and by adding §§ 28a.1—28a.9 and Appendix A to read as set forth in the Annex A.

(b) The Secretary of Agriculture shall submit this order and Annex A to the Office of General Counsel and Office of Attorney General for approval as required by law.

(c) The Secretary of Agriculture shall certify and deposit this order and Annex A with the Legislative Reference Bureau as required by law.

(d) The final-form rulemaking has an effective or compliance date of July 1, 2011.

RUSSELL C. REDDING,
Secretary

(*Editor's Note:* The Office of Attorney General returned this rulemaking without action to approve or disapprove under the Commonwealth Attorneys Act.)

(*Editor's Note:* For the text of the order of the Independent Regulatory Review Commission relating to this document, see 40 Pa.B. 5106 (September 4, 2010).)

Fiscal Note: Fiscal Note 2-170 remains valid for the final adoption of the subject regulations.

Annex A

TITLE 7. AGRICULTURE

PART II. DOG LAW ENFORCEMENT BUREAU

CHAPTER 28. (Reserved)

§§ 28.1—28.3. (Reserved).

CHAPTER 28a. COMMERCIAL KENNEL CANINE HEALTH REGULATIONS GENERAL PROVISIONS

Sec.	
28a.1.	Definitions.
28a.2.	Ventilation.
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28a.4.	Humidity levels.
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GENERAL PROVISIONS

§ 28a.1. Definitions.

The following words and terms, when used in this chapter have the following meanings, unless the context clearly indicated otherwise.

ANSI/U.L. Standard 2034 and IAS 6-96—Independent laboratory testing standards for carbon monoxide detectors.

CFM—Cubic Feet per Minute—A measurement of the flow of a gas or liquid that indicates how much volume in cubic feet pass by a stationary point in one minute.

Circulation or circulated air—The air that is mixed within a room and typically provides heating and cooling.

Commercial kennel—A kennel that breeds or whelps dogs and does one of the following:

(i) Sells or transfers any dog to a dealer or pet shop kennel.

(ii) Sells or transfers more than 60 dogs per calendar year.

Diurnal light cycle—The daily lighting cycle provided by artificial or natural light, or both, which shall be 12 hours of light and 12 hours without light. The 12 hours of light shall coincide with and be provided during normal daylight hours.

Excessive light—Direct, undiffused light from either the sun or artificial light, such as from a lighting fixture of an

intensity that is 12 foot candles or more greater than the maximum foot candles of light required by this chapter, which is placed or directed in a manner such that the light is allowed to or is shining directly into a primary enclosure of a dog.

Fresh air ventilation—That portion of circulated air that is from the outdoors.

Full-spectrum lighting—

(i) Full-spectrum light is light that covers the electromagnetic spectrum from infrared through near-ultraviolet, or all wavelengths that are useful to plant or animal life; in particular, sunlight is considered full spectrum, even though the solar spectral distribution reaching Earth changes with time of day, latitude, and atmospheric conditions.

(ii) When applied to an electrical light bulb the term implies the product emulates natural light.

Heat Index (HI) or Temperature and Humidity Index (THI)—An index, published by the United States National Weather Service, that combines air temperature and relative humidity to determine the human-perceived equivalent temperature. Heat Index values are calculated based on temperature measurements taken in the shade. Exposure to full sunshine can increase index values by up to 15° Fahrenheit and strong winds carrying very hot, dry air will add heat to the body. (United States National Weather Service).

Mechanical ventilation—Ventilation produced by operation of a machine. So long as its operation results in compliance with the standards established in this chapter, a mechanical ventilation system may range from very basic, such as an exhaust fan, to more sophisticated systems such as a HVAC system with temperature and humidity controls.

Primary enclosure—

(i) The primary structure that restricts a dog's ability to move in a limited amount of space, such as a room, cage or compartment.

(ii) The term does not include a run described in section 207(i)(6) of the act (3 P. S. § 459-207(i)(6)).

Professional engineer—

(i) An individual licensed and registered under the Engineer, Land Surveyor and Geologist Registration Law (63 P. S. §§ 148—158.2) or a successor statute to engage in the practice of engineering.

(ii) The term does not include a person who is exempt from licensure and registration under section 5(b) of the Engineer, Land Surveyor and Geologist Registration Law (63 P. S. § 152(b)).

Ventilation or ventilating—The process of “changing” or replacing air in any space to control temperature and humidity or remove moisture, odors, smoke, heat, dust, airborne bacteria, carbon monoxide, carbon dioxide, and to replenish oxygen. Ventilation includes both the exchange of air to the outside as well as circulation of air within the building. Ventilation is used to remove unpleasant smells and excessive moisture, introduce outside air and to keep interior building air circulating, to prevent stagnation of the interior air.

§ 28a.2. Ventilation.

(a) *General requirements.* Each area of a commercial kennel and commercial kennel housing facility where a dog is housed, kept or present, including primary enclosures, must utilize a functional, mechanical ventilation

system that provides ventilation in a manner that meets the requirements of this section and §§ 28a.3—28a.6. The kennel owner or operator shall assure the mechanical ventilation system is functional, in operation at all times and meets the standards and requirements of this section. The kennel owner or operator shall also assure the auxiliary ventilation system, humidity control system and carbon monoxide detectors are functional, operational and operated or operating in a manner that meets the standards and requirements of this section and §§ 28a.3—28a.6.

(b) *Certification of ventilation system.* The kennel owner shall supply the following information to the Department:

(1) Written certification under the signature and seal of a professional engineer verifying the professional engineer has inspected the ventilation system to be certified, acknowledging familiarity with the requirements of the act and this chapter and certifying that the ventilation system of the kennel meets all of the standards and requirements of this section and §§ 28a.3—28a.6. In addition, the certification must contain the following information:

(i) The total cubic feet of the kennel and kennel housing facility, and the cubic feet of each separate room or area of the kennel and kennel housing facility where a dog is kept, housed or present.

(ii) A description of the mechanical ventilation equipment to be utilized in each room or area of the kennel and kennel housing facility where a dog is kept, housed or present, including primary enclosures. The description must include the cubic feet per minute capacity of that equipment.

(iii) A description of the humidity control system, devices or equipment to be utilized, including the total capacity of the system, devices or equipment.

(iv) A description of the auxiliary ventilation system, devices or equipment to be utilized.

(v) The highest total number of dogs that will be kept, held or present in the kennel and kennel housing facility, including primary enclosures, at any time.

(vi) The location where every device for measuring temperature and humidity required under § 28a.4(b)(1) (relating to humidity levels) should be installed to accurately measure temperature and humidity as required by this chapter in each area and room within the kennel and kennel housing facility where a dog is housed, kept or present, including primary enclosures.

(2) The certification shall be submitted to the Department by May 30, 2011, for all commercial kennels licensed as of that date, and thereafter, the certification shall be submitted as part of all commercial kennel license applications; and within 90 days of any change to the volume, cubic feet or linear dimensions of the kennel housing facility where a dog is kept, housed or present, including primary enclosures, a change in the highest total number of dogs kept, held or present, or a change to the volumetric, capacity, circulation or air exchange portions of the ventilation system or a change in any part of the auxiliary ventilation or humidity control system.

(3) A new certification is not required for the submission of a commercial kennel license application, if the commercial kennel submitting the kennel license application was licensed in the previous year, submitted a valid certification in that year and there have been not changes to the volume, cubic feet or linear dimensions of the

kennel or kennel classification since the submission of the last kennel license application and certification. In that instance, the certification submitted with the most recent commercial kennel license application may be resubmitted.

(4) The information submitted to the Department will be kept as part of the kennel's records.

(c) *Inspection.*

(1) *Inspection.* A State dog warden or other employee of the Department inspecting the kennel will at a minimum assure that:

(i) The mechanical ventilation system is functional, operational and in operation.

(ii) The auxiliary ventilation system is available, functional and operational and, where the temperature in the kennel exceeds 85° Fahrenheit, that the auxiliary ventilation system is in operation.

(iii) The humidity control system is available, functional and operational and operating or operated in a manner that meets the standards and requirements of § 28a.4.

(2) *Assurance of compliance.* A State dog warden or other employee of the Department inspecting the kennel may take ventilation, temperature, humidity and ammonia level readings and measurements to assure compliance with this chapter.

(d) *Recertification.* The Department may require recertification by a professional engineer where the ventilation, auxiliary ventilation, humidity or ammonia levels or standards fail to comply with the requirements of this chapter.

(e) *Ventilation and circulation.* Kennels and housing facilities where a dog is housed, kept or present, including primary enclosures, shall be equipped with mechanical ventilation equipment that physically moves air and can provide ventilation, fresh air ventilation, circulation, heating, dehumidification and filtration meeting the standards of this chapter. This equipment includes: air handlers, roof top units, dehumidifiers, furnaces, unit heaters and heat pumps.

(f) *Standards.* The standards established in this subsection shall be met at all times that a dog is housed, kept or present in the kennel or kennel housing facility, including primary enclosures:

(1) *General.* Ventilation and circulation of air shall be provided and distributed throughout the entire area of the kennel and kennel housing facility, at the required volumetric rates and in the manner required by this chapter in all rooms or areas of the kennel and housing facility where a dog is housed, kept or present, including primary enclosures.

(2) *Circulation and volumetric rates.* Minimum circulation rates in each area or room of a kennel and housing facility, including primary enclosures, where a dog is housed, kept or present shall be maintained at all times at a total volumetric airflow of 100 cubic feet per minute (CFM) per dog. Volumetric air flow rates may be required to be increased as set forth in § 28a.3 (relating to auxiliary ventilation).

(3) *Design capacity.* The mechanical ventilation equipment employed to physically circulate and move the air shall be designed, rated and able to circulate and move the required volume of air based on the highest total number of dogs held in the kennel and kennel housing

facility, including primary enclosures, at any one time and shall do so in a manner meeting all requirements of this section.

(4) *Fresh air rates.* At least 30 CFM per dog of the circulated air shall be fresh air; the rest may be recirculated air.

(5) *Filtration.* Filtration of circulated air shall be by disposable filters rated at a minimum efficiency reporting value (MERV) of 8 or higher.

(i) Evidence of the MERV filtration level shall be the information printed by the manufacturer on the filters.

(ii) At a minimum, filters shall be replaced quarterly in equipment serving areas of the kennel and kennel housing facility, including primary enclosures, that houses dogs.

(6) *Design and placement.* Ventilation shall provide circulation at the height of the dog, meaning the ventilation system shall be designed and placed in such a manner that each dog is in the moving air stream provided by the ventilation.

(g) *Mechanical malfunction or failure.* In the event of a mechanical system malfunction or failure, the kennel and kennel housing facility must have windows, doors, skylights, or other openings in the structure that are operable and may be opened to provide natural ventilation and the auxiliary ventilation techniques established in § 28a.3 may be utilized. In the event of a mechanical system malfunction or failure resulting in a failure to meet the requirements set forth in this section and §§ 28a.3—28a.5, the kennel owner shall do all of the following:

(1) *Kennel temperatures below 85° Fahrenheit.* Take steps to correct the malfunction or failure immediately and restore the kennel and kennel housing facility, including primary enclosures, to a condition complying with this section and §§ 28a.3—28a.5 within 72 hours of the occurrence of the malfunction or failure. If at any time during the 72-hour period the temperature in the kennel or kennel housing facility, including the primary enclosures exceeds 85° Fahrenheit, the kennel owner shall follow and comply with subparagraph (2).

(2) *Kennel temperatures in excess of 85° Fahrenheit.* Take steps to correct the malfunction or failure immediately and restore the kennel and kennel housing facility, including primary enclosures, to a condition complying with this section and §§ 28a.3—28a.5 within 4 hours of the malfunction or failure. If the malfunction or failure cannot be, or is not, corrected so that the kennel and kennel housing facility, including primary enclosures, is compliant with this section and §§ 28a.3—28a.5 within 4 hours of the occurrence of the malfunction or failure, immediately notify the kennel's veterinarian and consult on the steps to be taken to protect the health and well being of the dogs, as well as, contemporaneously keep records of the following:

(i) The time of the malfunction or failure.

(ii) Temperature and humidity readings every 4 hours thereafter until the temperature is reduced to below 85° Fahrenheit.

(iii) The time of the notification to the kennel's veterinarian and all steps taken to protect the health and well being of the dogs.

(3) *Malfunctions or failures reaching or exceeding 24 hours.* If a failure or malfunction reaches or exceeds 24 hours, immediately notify the Department of the steps

being taken to address the malfunction or failure and to protect the health and well being of the dogs. If notification to the Department is required after 4:00 p.m. on a weekday or on a weekend or holiday the kennel owner shall notify the Department by 9:00 a.m. of the next Department business day.

(4) Upon the occurrence of a malfunction or failure requiring the notification set forth in paragraph (2), notify the Department of the date and time the kennel and kennel housing facility, including the primary enclosures were restored to compliance with this section and §§ 28a.3—28a.5.

(h) *Illness or stress.* If upon inspection, dogs exhibit conditions or signs of illness or stress associated with poor or improper ventilation, air circulation, auxiliary ventilation or humidity levels the State dog warden or other employee of the Department performing the inspection may take appropriate measurements and readings in all areas of the kennel where the illness or stress is present to determine if the kennel is in compliance with all provisions of this chapter relating to ventilation, auxiliary ventilation, humidity and ammonia levels and may require a recertification under subsection (d) be provided within a time period specified, but in no event shall the time period specified be more than 30 days or less than 7 days. Signs of illness or stress associated with poor or improper levels of ventilation, air circulation, auxiliary ventilation or humidity, ammonia or carbon monoxide levels include:

(1) Respiratory distress, such as excessive panting, breathing problems and hyperventilation.

(2) Signs of heat distress or heat stroke, including excessive panting, hyperventilation, increased salivation, gums that are dry, pale, grayish and tacky, rapid pulse, weakness, confusion, inattentive behavior, vomiting, elevated body temperature or rectal bleeding.

(3) Matted, puffy, red or crusted eyes.

(4) Listlessness.

(5) Fungal and skin diseases.

§ 28a.3. Auxiliary ventilation.

(a) *General.* When temperatures, in any part of a kennel and kennel housing facility where a dog is housed, kept or present, including primary enclosures, rise above 85° Fahrenheit, auxiliary ventilation shall be provided to the dogs in that part of the kennel and kennel housing facility, including primary enclosures. The auxiliary ventilation must provide the increased volumetric air flow rates and humidity control required by this chapter and be operated in addition to, not in place of, all other ventilation and humidity requirements in this chapter. Auxiliary ventilation systems may be utilized in the event of a primary ventilation system failure or malfunction.

(b) *Types of auxiliary ventilation.* Auxiliary ventilation devices and techniques may include:

(1) Utilizing fans or air circulation equipment that increases the total volumetric airflow from 100 CFM per dog to 200 CFM per dog, either by utilizing any additional capacity the current mechanical ventilation system may provide or by adding additional fans or circulating equipment. The proper humidity levels, as established in § 28a.4 (relating to humidity levels), shall be maintained at all times.

(2) Providing cooling by moving or circulating air over cool water coils or piping, cooling towers or ice or providing cooling directly to the primary enclosure or space occupied by the dog by a means capable of cooling

the enclosure or floor upon which the dog lays or walks, such as piping or coils capable of carrying cool water under or within the flooring system, and at the same time increasing the total volumetric airflow from 100 CFM per dog to 200 CFM per dog, either by utilizing any additional capacity the current mechanical ventilation system may provide or by adding additional fans or circulating equipment. The proper humidity levels, as established in § 28a.4, shall be maintained at all times.

(3) Air conditioning sufficient to reduce temperature and humidity levels in the kennel to the required levels.

(4) Geothermal systems sufficient to reduce temperature and humidity levels in the kennel to the required levels.

§ 28a.4. Humidity levels.

(a) *General standards.* A kennel and kennel housing facility, where a dog is housed, kept or present, including primary enclosures must meet the following humidity levels:

(1) *Temperatures below 85° Fahrenheit.* When temperatures in the kennel or kennel housing facility, where any dog is housed, kept or present, including primary enclosures, are below 85° Fahrenheit, relative humidity levels shall be kept between 30% and 70%.

(2) *Temperatures above 85° Fahrenheit.* When temperatures, in any part of the kennel or kennel housing facility, where a dog is housed, kept or present, including primary enclosures, rise above 85° Fahrenheit, the relative humidity level shall be reduced to a level that will accomplish a Heat Index value of 85 or lower.

(3) *Four-hour window.* Once the temperature in any part of the kennel or kennel housing facility, where a dog is housed, kept or present, exceeds 85° Fahrenheit, the kennel owner shall have 4 hours to accomplish and maintain a Heat Index of 85 HI or lower, as required under paragraph (2). At no time during that 4-hour time period or at any other time shall the Heat Index value ever exceed 90 HI in any area, room or part of the kennel or housing facility, where a dog is housed kept or present, including primary enclosures. If within 4 hours, the kennel owner is unable to accomplish and maintain a Heat Index of 85 HI or lower, the kennel owner shall immediately notify the kennel's veterinarian and consult on the steps to be taken to protect the health and well being of the dogs, as well as contemporaneously keep the records required under § 28a.2(g)(2)(ii)—(iii) (relating to ventilation). If such a failure to accomplish and maintain a Heat Index of 85 HI or lower exceeds 24 hours, the kennel owner shall contact the Department in the manner prescribed and provide it with the information required under § 28a.2(g)(3) and (4).

(4) *Calculation of HI.*

(i) The tool that shall be utilized to determine the HI value and thereby the proper humidity levels when temperatures rise above 85° Fahrenheit shall be the Temperature and Humidity Index of the National Weather Service or its successor standard. This is also available at the National Weather Service web site at <http://www.crh.noaa.gov/> and then search HI; the HI Calculator is located at <http://www.hpc.ncep.noaa.gov/html/heatindex.shtml>.

(ii) A chart setting forth the Heat Index values is set forth in Appendix A. (Examples of the Heat Index values are: 86° Fahrenheit and 40% humidity = HI of 85° Fahrenheit; and 90° Fahrenheit and 20% humidity = HI of 86° Fahrenheit.)

(5) *Condensation.* Humidity levels, other than during times of cleaning and sanitizing, may not rise to the level where condensation occurs in any area of the kennel, kennel housing facility or primary enclosures where a dog is housed, kept or present.

(b) *Measurement and control standards.*

(1) Temperature and humidity levels shall be measured in each area or room within the kennel and housing facility where a dog is housed, kept or present and shall be measured and recorded by either a humidity gauge and a temperature gauge or by a thermo-hygrometer, which shall be installed in each room of the kennel and housing facility in which a dog is housed, kept or present.

(2) The measuring devices will be provided by and be the property of the Department and meet the following minimum standards:

(i) The device will not require hard wiring, and may be operated by batteries.

(ii) The device will store temperature and humidity data on an hourly basis and for a time period of at least 6 months.

(iii) The device will be rated as accurate to within 1° Fahrenheit.

(iv) The device will be rated as accurate to within plus or minus 2% relative humidity from 10% to 90% relative humidity.

(3) Evidence of humidity control devices shall be either dedicated dehumidifiers in each room and area of the kennel and housing facility in which a dog is housed, kept or present or may be air conditioning equipment. The equipment utilized must have documented dehumidification capability.

(4) If air conditioning is utilized, the cooling capacity shall be at least 35 Btu/hr per square foot (1 ton of cooling for every 350 square feet) of animal area as demonstrated by nameplate cooling capability on the cooling equipment.

(5) The humidity gauge and temperature gauge or thermo-hygrometer installed and provided by the Department may not be tampered with, destroyed, incapacitated, reset or disturbed, including downloading of data, by any person other than a State dog warden or an authorized employee of the Department.

(6) If such a device is tampered with, destroyed, incapacitated, reset or disturbed, it shall be the responsibility of the kennel owner to notify the Department within 24 hours on normal business days and by 9:00 a.m. of the next Department business day if the occurrence is on a weekend or holiday.

(7) The Department will remove and have the device checked for proper calibration and accuracy according to manufacturer specifications. The Department will replace any removed device with an accurate and properly calibrated humidity and temperature gauge or thermo-hygrometer.

(8) Data taken from these devices may not be used as the sole basis for a civil penalty or criminal penalty under section 903(a) or (b) of the act (3 P. S. § 459-903 (a) and (b)) for violation of this section.

§ 28a.5. Ammonia levels.

(a) *Levels.* Ammonia levels in all areas and rooms of the kennel and kennel housing facility, where a dog is housed, kept or present, including primary enclosures may not be greater than 15 ppm (parts per million)

except within 30 minutes of the completion of active sanitation of that primary enclosure.

(b) *Measurements.* Ammonia level measurements shall be taken at the level of the dogs.

§ 28a.6. Carbon monoxide detectors.

A kennel or kennel housing facility utilizing any carbon monoxide emitting device, shall install and maintain functioning carbon monoxide detectors in each room or area of the kennel and kennel housing facility in which a dog is housed, kept or present. The carbon monoxide detectors must meet or exceed the UL standard 2034 or the IAS 6-96 standard, or its successor standards.

§ 28a.7. Lighting.

(a) *General lighting standard for commercial kennels.* Lighting in commercial kennels may be provided by natural or artificial light, or both. Whether lighting is provided by natural or artificial light, or both, the following standards shall be met:

(1) There shall be ample lighting by natural or artificial means to provide sufficient illumination to allow routine inspection of the kennel, housing facility and primary enclosures and observation of the dogs at any time and to assure proper cleaning and good housekeeping practices and for the well-being of the dogs.

(2) Lighting shall be uniformly diffused throughout the kennel and housing facility where a dog is housed, kept or present, including primary enclosures.

(3) All areas of the kennel and housing facility in which a dog is housed, kept or present, including primary enclosures, shall be provided a regular diurnal cycle through natural or artificial light, or both.

(4) The lighting range provided during the 12-hour light period of the diurnal cycle shall be 40 to 60 foot candles or 430—650 lux, in all areas and rooms of the kennel and kennel housing facility, including primary enclosures, where a dog is housed, kept or present.

(5) Primary enclosures and other areas of the kennel and kennel housing facility in which a dog is housed, kept or present shall be placed or located in a manner that protects each dog from exposure to excessive light.

(b) *Specific lighting standards.* The following specific standards are in addition to, not in place of, all other requirements meeting the general lighting standards established in this section. The following specific standards apply:

(1) *Natural light.* Where kennel and housing facility lighting is provided by natural light, any window or opening, with the exception of the openings that provide for unfettered access to the exercise area, which provides natural light shall be covered with a transparent material such as glass or hard plastic and remain unobstructed.

(2) *Artificial light.* Where kennel or kennel housing facility lighting is provided by artificial lighting the following standards apply:

(i) The artificial lighting shall be provided by full spectrum lighting.

(ii) Lighting sources and systems shall be kept in good repair and functional and may not have any bulb or part of the system in disrepair, such as being unable to produce light, burned out or emitting irregular bursts of light, such as when a ballast is in disrepair.

(iii) Light sources, whether their primary purpose is to provide heat or light, shall be provided in a manner that

prevents dogs from being injured (that is, through contact with the light, fixture, bulb, switch or cord or through electrocution).

§ 28a.8. Flooring.

For dogs over 12 weeks of age, the flooring in commercial kennels must meet the following standards:

(1) *General requirements of the act.*

(i) The floors of all primary enclosures must be impervious to moisture, as required under section 207(h)(9) of the act (3 P. S. § 459-207(h)(9)).

(ii) The flooring must comply with the flooring standards established in section 207(i)(3)(i) of the act, which states “The floor of the primary enclosure shall be strong enough so that the floor does not sag or bend between the structural supports, shall not be able to be destroyed through digging or chewing by the dogs housed in the primary enclosure, shall not permit the feet of any dog housed in the primary enclosure to pass through any opening, shall not be metal strand whether or not it is coated, shall allow for moderate drainage of fluids and shall not be sloped more than 0.25 inches per foot.”

(2) *Flooring constructed with slats.* Section 207(i)(3)(ii) of the act allows floors to be constructed with slats if the floor is in compliance with the general requirements of the act, established in section 207(i)(3)(i), and set forth in paragraph (1) and meets the following conditions:

(i) The floor is flat.

(ii) The floor has spaces between the slats that are no more than 0.5 inch in width.

(iii) The floor has spaces between the slats that run the length or the width of the floor, but not both.

(iv) The floor has slats that are no less than 3.5 inches in width.

(v) All of the slats are level with the slat next to it within a single primary enclosure.

(3) *Additional flooring options.* Any flooring options that may be approved by the Canine Health Board, under the authority in section 207(i)(3)(iii) of the act, must meet the standards in section 221(f) of the act (3 P. S. § 459-221(f)), and the additional flooring requirements established under subsection (d).

(4) *Additional flooring requirements.*

(i) Solid flooring is approved and shall be sloped to a drain that is properly maintained, such as being free of debris and in good repair, so that the drain is functioning and capable of rapidly removing waste and water and keeping animals dry.

(ii) Any drain must have a drain cover which is securely fixed and made of a noncorrosive substance.

(iii) Flooring may not be made of a material, that when exposed to a heat source such as the direct rays of the sun, a lamp or radiant heating can rise to temperatures that may cause injury to the skin, feet or pads of a dog.

(iv) The flooring may not splay the feet of a dog, cause or result in damage such as cuts, swelling or ulceration to the pads of a dog's foot or allow the dog toe or toenail to slip between any openings in the floor thereby causing injury.

(v) Radiant heat flooring, or a floor cooling system, may be utilized to temper the dogs' primary enclosure, but may not be utilized as the primary heating or cooling mechanism. The temperature of that flooring must be

able to be regulated in a manner that assures it will not rise or fall to levels that would cause injury to a dog's skin feet or pads or cause hypothermia, hyperthermia, heat stress or heat stroke.

(vi) The surface of the flooring must be constructed of a material or in a manner that it will provide the dogs with footing that is not slippery or slick, so that the dog will have traction and may stand, walk and move about without falling, slipping, sliding or causing injury to its legs, hips or back. Utilizing nonslip coating and textures are one means of providing sure footing.

(vii) Flooring must be made of material that is impervious to moisture, capable of being cleaned on a daily basis or as often as necessary as required under the act and § 21.29 (relating to sanitation) and capable of being sanitized in accordance with section 207(h)(14) (3 P. S. § 459-207(h)(14)) of the act.

(viii) Flooring may not be made of or coated with materials that can be chewed and readily ingested, or are toxic to dogs, or both.

(5) *Nursing mothers.* Primary enclosures, including whelping boxes, housing bitches with nursing litters or housing dams or foster dams with puppies under 12 weeks of age must be constructed so that at least 50% of the flooring of the primary enclosure complies with the standards established under section 207(i)(3) of the act.

§ 28a.9. Scope and effective date.

(a) *Scope.* This chapter applies only to commercial kennels.

(b) *Effective Date.* This chapter is effective on July 1, 2011.

**Appendix A
85 HI**

Heat Index from Temperature and Humidity

The following chart delineates the relative humidity level that shall be reached and maintained to achieve a Heat Index value of 85.

When air temperature in any part of the kennel or kennel housing facility, where any dog is housed, kept or present, including primary enclosures rises above 85° Fahrenheit the following relative humidity levels shall be achieved and maintained.

<i>Temperature (air) in Fahrenheit</i>	<i>Relative Humidity (RH)</i>
86° Fahrenheit	40% RH or less
87° Fahrenheit	34% RH or less
88° Fahrenheit	28% RH or less

<i>Temperature (air) in Fahrenheit</i>	<i>Relative Humidity (RH)</i>
89° Fahrenheit	21% RH or less
90° Fahrenheit	11% RH or less
91° Fahrenheit	6% RH or less
92° Fahrenheit	1% RH or less

Note: At temperatures in excess of 92° Fahrenheit there is no relative humidity level that will allow an HI of 85 to be achieved.

**90 HI
Four-Hour Window**

Heat Index from Temperature and Humidity

The following chart delineates the relative humidity levels that may not be exceeded at any time.

Once the air temperature in any part of the kennel or kennel housing facility, where a dog is housed, kept or present, exceeds 85° Fahrenheit, the kennel owner shall have no more than 4 hours to accomplish and maintain a Heat Index of 85 HI or lower, as required by this chapter. At no time during that 4-hour time period or at any other time shall the Heat Index value ever exceed 90 HI in any area, room or part of the kennel or housing facility, where a dog is housed kept or present, including primary enclosures.

<i>Temperature (air) in Fahrenheit</i>	<i>Relative Humidity (RH)</i>
86° Fahrenheit	58% RH or less
87° Fahrenheit	53% RH or less
88° Fahrenheit	48% RH or less
89° Fahrenheit	43% RH or less
90° Fahrenheit	39% RH or less
91° Fahrenheit	35% RH or less
92° Fahrenheit	30% RH or less
93° Fahrenheit	25% RH or less
94° Fahrenheit	20% RH or less
95° Fahrenheit	13% RH or less
96° Fahrenheit	10% RH or less
97° Fahrenheit	7% RH or less
98° Fahrenheit	3% RH or less

Note: At temperatures in excess of 98° Fahrenheit there is no relative humidity level that will allow an HI of 90 to be achieved.

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