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TITLE 326 AIR POLLUTION CONTROL BOARD

FIRST NOTICE OF COMMENT PERIOD

LSA Document #05-332(APCB)

DEVELOPMENT OF NEW RULES CONCERNING REGULATIONS OF EMISSIONS FROM OUTDOOR FURNACES AND OUTDOOR BOILERS

PURPOSE OF NOTICE

The Indiana Department of Environmental Management (IDEM) is soliciting public comment on new rule 326 IAC 4-3 concerning regulation of emissions from outdoor furnaces and outdoor boilers. IDEM seeks comment on the affected citations listed and any other provisions of Title 326 that may be affected by this rulemaking.

CITATIONS AFFECTED: 326 IAC 4-3.

AUTHORITY: IC 13-14-8; IC 13-17-3-12; IC 13-17-4-1.

SUBJECT MATTER AND BASIC PURPOSE OF RULEMAKING

Basic Purpose and Background

In an effort to control heating costs, homeowners are increasingly turning to furnaces installed outside the home to heat their homes. These units are typically many times larger than an indoor wood stove with potentially high emissions of particulate matter. Currently, outdoor furnaces are not regulated in Indiana or at the national level. The department has received numerous complaints concerning outdoor furnaces in residential areas and has received requests to develop regulations for outdoor furnaces.

There are many different types of, and names for, wood burning appliances. Outdoor furnaces are considered the same as outdoor boilers and references to outdoor furnaces in this notice includes outdoor boilers. An indoor wood burning device designed to heat only part of a house is commonly referred to as a wood stove or wood heater. If a wood burning device is designed to provide heat for an entire house, then that device is located outside the house and referred to as a wood furnace. In general, these furnaces are part of a larger group called outdoor furnaces.

Outdoor furnaces heat water or air that is pumped back into the home or other small buildings. Units are typically the size of a small wood shed or mini-barn. They can heat buildings ranging in size from one thousand eight hundred (1,800) to twenty thousand (20,000) square feet. Outdoor furnaces are much larger and differ from the much smaller indoor wood stoves, pellet stoves, fireplaces, and barbecue pits.

Most outdoor furnaces or outdoor boilers use wood as the primary fuel. Some outdoor furnaces have auxiliary units or attachments that allow gas, oil, or coal to be burned in addition to wood. Stack heights on outdoor wood furnaces are typically in the range of eight (8) to ten (10) feet above ground level. Chimneys on homes are almost always above the roof line and are typically twenty (20) to thirty (30) feet above ground level.

Outdoor furnaces or outdoor boilers are available in a wide variety of sizes and efficiencies. However, the basic design of outdoor furnaces causes fuel to burn incompletely, or smolder, which can result in thick smoke and high particulate emissions. Problems are aggravated if an outdoor furnace is not sited properly or not used following manufacturers' recommendations.

Smoke is a primary complaint from residents who live near outdoor furnaces. Temperature inversions cause smoke to stay close to the ground. The smoke drifts across property lines and penetrates adjacent structures. It can also drift across nearby roadways and block visibility for drivers.

New York, Connecticut, Maryland, Massachusetts, Michigan, New Jersey, Vermont, and the Northeast States for Coordinated Air Use Management have filed a petition to the United States Environmental Protection Agency (U.S. EPA) seeking regulations of outdoor furnaces and outdoor boilers. U.S. EPA has tested some outdoor furnaces. The overall efficiency is approximately fifty percent (50%) of the thermal energy of the wood. For comparison purposes, the efficiency of a fireplace may be as low as ten percent (10%). According to the U.S. Federal Energy Management Program, the thermal energy-efficiency of a base model gas-fired water industrial boiler is seventy-eight percent (78%). Most modern hot air furnaces have a thermal energy efficiency of about eighty percent (80%).

Pollutants in the emissions from outdoor furnaces include particulate matter, carbon dioxide, and volatile organic compounds

including formaldehyde, benzene, polycyclate, aromatic hydrocarbons, and a number of trace chemicals.

The United States Environmental Protection Agency (U.S. EPA) has regulated “wood heaters”, which are defined as “an enclosed, woodburning appliance capable of and intended for space heating and domestic water heating...” (40 CFR, Part 60, Subpart AAA, 60.530) under standards that have been in effect for all wood heaters manufactured and sold at retail since July 1, 1992 (40 CFR, Part 60, Subpart AAA 60.533). These standards exempt outdoor furnaces. Since outdoor wood furnaces are not regulated by U.S. EPA, some local ordinances have been adopted to ban their use, such as in Otego, New York where the law declares “furnaces create noxious and hazardous smoke, soot, fumes, odors, and air pollution, [which] can be detrimental to citizens’ health, and can deprive neighboring residents of the enjoyment of their property or premises.”.

Vermont has proposed regulations for outdoor wood-fired boilers and they are on schedule to become effective after the Vermont legislative session. Vermont passed standards on water stoves, another name used for outdoor furnaces, in 1997 prohibiting them from being located closer than two hundred (200) feet to another residence and required an increased stack height for water stoves closer than five hundred (500) feet. However, citizen complaints continued. Vermont’s proposed rules are more stringent, including emission limits and sales regulations. The Connecticut legislature has passed an act concerning outdoor wood-burning furnaces that include the requirement to use manufacturers’ recommendations, stack heights, and siting restrictions.

Alternatives To Be Considered Within the Rulemaking

Approaches to regulating outdoor furnaces include the following:

Alternative 1. Establish emission standards for outdoor furnaces.

Particulate emissions can be very high. There are also emissions of carbon dioxide and volatile organic compounds.

- Is this alternative an incorporation of federal standards, either by reference or full text incorporation? No.
- Is this alternative imposed by federal law or is there a comparable federal law? No
- If it is a federal requirement, is it different from federal law? Not applicable.
- If it is different, describe the differences. Not applicable.

Alternative 2. Restrict type of and use of outdoor furnaces

Examples include requiring minimum stack heights, minimum setbacks from homes or other structures, the following of manufacturers’ recommendations, and the restriction of moisture content of wood that can be burned.

- Is this alternative an incorporation of federal standards, either by reference or full text incorporation? No.
- Is this alternative imposed by federal law or is there a comparable federal law? No
- If it is a federal requirement, is it different from federal law? Not applicable.
- If it is different, describe the differences. Not applicable.

Alternative 3. Ban outdoor furnaces or partial ban on types of outdoor furnaces

Examples include banning the use except for primary heating of the home, banning the use in residential neighborhoods, or banning the use on particular days or times of the day. Such a ban could also grandfather existing furnaces.

- Is this alternative an incorporation of federal standards, either by reference or full text incorporation? No.
- Is this alternative imposed by federal law or is there a comparable federal law? No
- If it is a federal requirement, is it different from federal law? Not applicable.
- If it is different, describe the differences. Not applicable.

Alternative 4. A Combination of Alternatives 1 through 3

- Is this alternative an incorporation of federal standards, either by reference or full text incorporation? No.
- Is this alternative imposed by federal law or is there a comparable federal law? No
- If it is a federal requirement, is it different from federal law? Not applicable.
- If it is different, describe the differences. Not applicable.

Applicable Federal Law

This rulemaking is not based on federal law. However, U.S. EPA has a voluntary residential wood smoke reductions initiative that targets emissions from indoor wood stoves.

Potential Fiscal Impact

The potential fiscal impact depends on the alternative approaches selected. For example, for an owner to comply with any of the alternatives, it may mean buying a new outdoor furnace or not being able to use an outdoor furnace that the owner has already purchased. The cost of an outdoor furnace ranges from three thousand dollars (\$3,000) to ten thousand dollars (\$10,000) depending on size and capacity. Owners or users of outdoor furnaces can typically save between forty percent (40%) to seventy percent (70%) compared to other types of heating equipment, but savings vary widely from year to year, by region, and are based on the individual owner’s furnace and how the owner uses it.

The cost of restrictions or partial ban is more difficult to determine. It may be as low as a few hundred dollars to modify a stack height or may result in modifications such as re-siting the furnace that may cost many hundreds of dollars. It is possible that the entire outdoor furnace for an owner would have to be entirely replaced because the existing one could not be modified. However, there would still be cost-savings and benefits due to newer models being more efficient.

The cost of wood for wood furnaces can vary widely depending on the type and availability of wood. If clean burning wood is required, the cost would depend on the difficulty of acquiring the new wood versus the existing noncompliant wood. Wood on average for the nation costs six-thousandths of a dollar (\$0.006) per one thousand (1,000) British Thermal Units (BTU) compared to natural gas (2004) at seven-thousandths of a dollar (\$0.007) per one thousand (1,000) BTU, propane at sixteen-thousandths of a dollar (\$0.016) per one thousand (1,000) BTU, and electric heat at twenty-six thousandths of a dollar (\$0.026) per one thousand (1,000) BTU. However, these costs vary widely depending on the region of the country and current supplies. Health impacts and environmental damage resulting from emissions from outdoor furnaces have not been quantified.

Small Business Assistance Information

IDEM established a compliance and technical assistance (CTAP) program under IC 13-28-3. The program provides assistance to small businesses and information regarding compliance with environmental regulations. In accordance with IC 13-28-3 and IC 13-28-5, there is a Small Business Assistance Program Ombudsman to provide a point of contact for small businesses affected by environmental regulations. Information on the CTAP program, the monthly CTAP newsletter, and other resources available can be found at www.in.gov/idem/ctap.

Small businesses affected by this rulemaking may contact the Small Business Regulatory Coordinator:

Sandra El-Yusuf

IDEM Compliance and Technical Assistance Program

OPPTA - MC60-04

100 N. Senate Avenue, W041

Indianapolis, IN 46204-2251

(317) 232-8578

selyusuf@idem.in.gov

The Small Business Assistance Program Ombudsman is:

Eric Levenhagen

IDEM Small Business Assistance Program Ombudsman

External Affairs - MC50-01

100 N. Senate Avenue, IGCN 1301

Indianapolis, IN 46204-2251

(317) 234-3386

elevenha@idem.in.gov

Public Participation and Workgroup Information

An external workgroup will be established to discuss issues involved in this rulemaking. The first workgroup meeting is scheduled for December 14, 2005 at 1 p.m., at the Indiana Government Center-South, 402 West Washington Street, Conference Center Room B, Indianapolis, Indiana. If you wish to attend or receive notice of workgroup meetings, or have suggestions related to the workgroup process, please contact Sean Gorman, Rules Development Section, Office of Air Quality at (317) 234-3533 or (800) 451-6027 (in Indiana)

STATUTORY AND REGULATORY REQUIREMENTS

IC 13-14-8-4 requires the board to consider the following factors in promulgating rules:

- (1) All existing physical conditions and the character of the area affected.
- (2) Past, present, and probable future uses of the area, including the character of the uses of surrounding areas.
- (3) Zoning classifications.
- (4) The nature of the existing air quality or existing water quality, as the case may be.
- (5) Technical feasibility, including the quality conditions that could reasonably be achieved through coordinated control of all factors affecting the quality.
- (6) Economic reasonableness of measuring or reducing any particular type of pollution.
- (7) The right of all persons to an environment sufficiently uncontaminated as not to be injurious to human, plant, animal, or aquatic life or to the reasonable enjoyment of life and property.

REQUEST FOR PUBLIC COMMENTS

At this time, IDEM solicits the following:

- (1) The submission of alternative ways to achieve the purpose of the rule.
- (2) The submission of suggestions for the development of draft rule language.

Mailed comments should be addressed to:

#05-332(APCB) Outdoor furnaces

Sean Gorman Mail Code 61-50

c/o Administrative Assistant
Rules Development Section
Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204.

Hand delivered comments will be accepted by the IDEM receptionist on duty at the Tenth Floor reception desk, Office of Air Quality, Indiana Government Center-North, 100 North Senate Avenue, Indianapolis, Indiana.

Comments may be submitted by facsimile at the IDEM fax number: (317) 233-2342, Monday through Friday, between 8:15 a.m. and 4:45 p.m. Please confirm the timely receipt of faxed comments by calling the Rules Section at (317) 233-0426.

COMMENT PERIOD DEADLINE

Comments must be postmarked, faxed, or hand delivered by January 3, 2006.

Additional information regarding this action may be obtained from Sean Gorman, Rules Development Section, Office of Air Quality, (317) 234-3533 or (800) 451-6027 (in Indiana).

Kathryn A. Watson, Chief
Air Programs Branch
Office of Air Quality