

## Append LCCO 10.8 Emissions from Fuel-Burning Equipment

### 3. Outdoor Hydronic Heaters

#### A. Applicability

- 1) This Regulation applies to the installation and use of outdoor hydronic heaters (OHH), also known as “outdoor wood boilers” or “outdoor wood furnaces,” in Linn County and to any person who installs, operates, or owns an outdoor hydronic heater with a capacity less than one million BTU per hour input. [Outdoor hydronic heaters with a capacity equal to or greater than one million BTU per hour input are subject to Section 10.5 Locally Required Permits].

#### B. Definitions

- 1) Outdoor hydronic heater – “Outdoor hydronic heater” (also known as outdoor wood boiler) means a fuel burning device designed to (1) burn wood or other approved solid fuels; (2) that the manufacturer specifies for outdoor installation or installation in structures not normally occupied by humans (e.g., garages); and (3) heats building space and/or water via the distribution, typically through pipes, of a fluid heated in the device, typically water or a water/antifreeze mixture.
- 2) Qualified Model - “Qualified model” is a model that either
  - a. The U.S. Environmental Protection Agency has certified under the EPA Hydronic Heater Program as:
    1. Phase 1 emission level qualified model or
    2. Phase 2 emission level qualified model until March 31, 2010 (assuming the manufacturer and EPA have signed a Phase 2 Partnership Agreement). After March 31, 2010, a “qualified model” is any Phase 2 emission level qualified model. (Note: models that qualified during the Phase 1 Program based on testing by the ASTM cordwood test method exemption are no longer being qualified by EPA as of December 31, 2008.).
  - b. A unit not certified under the EPA Hydronic Heater Program may petition the Department for approval as a locally qualified model. Requests for approval must be accompanied by performance test results developed in accordance with current EPA Hydronic Heater Program test guidelines.
- 3) Phase 1 emission level qualified model - A “Phase 1 emission level qualified model” is a model that the U.S. Environmental Protection Agency has determined, based on test results from an independent accredited laboratory, meets the U.S. EPA Hydronic Heater Voluntary Program Phase 1 fine particulate emission level of 0.60 lbs/million Btu heat input or less for all fuel types listed in the owner’s manual and/or mentioned in marketing/sales materials.
- 4) Phase 2 emission level qualified model - A “Phase 2 emission level qualified model” is a model that the U.S. Environmental Protection Agency has determined, based on test results from an independent accredited laboratory, meets the U.S. EPA Hydronic Heater Voluntary Program Phase 2 fine particulate emissions level of 0.32 lbs/million Btu heat output or less for all fuel types listed in the owner’s manual and/or mentioned in marketing/sales materials, and that did not exceed 18.0 grams/hr of fine particles in any individual test run that was used in the calculation of the average.

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Prepared by: Linn County Public Health, Air Quality Division

Date: March 12, 2009

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C. New Units

- 1) All new Outdoor Wood Furnaces shall be constructed, established, installed, operated and maintained in conformance with the manufacturer's instructions and the requirements of this ordinance. In the event of a conflict, the requirements of this ordinance shall apply unless the manufacturer's instructions are stricter, in which case the manufacturer's instructions shall apply.
- 2) Setback and stack height requirements for Outdoor Hydronic Heaters that are uncertified. An Outdoor hydronic heater that does not meet the definition of "Phase 1 emission level qualified model" or "Phase 2 emission level qualified model" as set forth in Paragraph B, and purchased after [insert rule promulgation date] must be installed at a minimum distance from the property line and stack height, measured from ground level to the top of stack, as set forth in Tables C-1A through C1-C.

**Table C-1A  
Uncertified Units with a Minimum Stack Height of 10 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is:
<del>125,000</del> Btu/hour	<del>10</del> feet	<del>700</del> feet
<del>250,000</del> Btu/hour	10 feet	<del>1050</del> feet
<del>350,000</del> Btu/hour	<del>10</del> feet	<del>1400</del> feet
<del>500,000</del> Btu/hour	10 feet	<del>1725</del> feet
<del>750,000</del> Btu/hour	10 feet	<del>2250</del> feet
<del>1,000,000</del> Btu/hour	10 feet	<del>2550</del> feet

**Table C-1B  
Uncertified Units  
Uncertified Units with a Minimum Stack Height of 15 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is:
<del>125,000</del> Btu/hour	<del>15</del> feet	<del>425</del> feet
<del>250,000</del> Btu/hour	15 feet	<del>825</del> feet
<del>350,000</del> Btu/hour	<del>15</del> feet	<del>1075</del> feet
<del>500,000</del> Btu/hour	15 feet	<del>1400</del> feet
<del>750,000</del> Btu/hour	15 feet	<del>2000</del> feet
<del>1,000,000</del> Btu/hour	15 feet	<del>2250</del> feet

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**Table C-1C  
Uncertified Units  
Uncertified Units with a Minimum Stack Height of 20 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is:
125,000 Btu/hour	20 feet	275 feet
250,000 Btu/hour	20 feet	600 feet
350,000 Btu/hour	20 feet	850 feet
500,000 Btu/hour	20 feet	1125 feet
750,000 Btu/hour	20 feet	1500 feet
1,000,000 Btu/hour	20 feet	1775 feet

- 3) Setback and stack height requirements for Outdoor Hydronic Heaters that are Phase 1 emission level qualified models. Outdoor hydronic heaters that meet the applicable "Phase 1 emission level qualified model" but not the "Phase 2 emission level qualified model" as set forth in Paragraph B and purchased after [insert rule promulgation date] must be installed at a minimum distance from the property line and stack height, measured from ground level to the top of stack, as shown in Tables C-2A through C-2C.

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**Table C-2A  
Phase 1 Certified Units  
Minimum Stack Height of 10 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is
125,000 Btu/hour	10 feet	200 feet
250,000 Btu/hour	10 feet	300 feet
350,000 Btu/hour	10 feet	425 feet
500,000 Btu/hour	10 feet	600 feet
750,000 Btu/hour	10 feet	750 feet
1,000,000 Btu/hour	10 feet	875 feet

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**Table C-2B  
Phase 1 Certified Units  
Minimum Stack Height of 15 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is
125,000 Btu/hour	15 feet	100 feet
250,000 Btu/hour	15 feet	275 feet
350,000 Btu/hour	15 feet	375 feet
500,000 Btu/hour	15 feet	475 feet
750,000 Btu/hour	15 feet	725 feet
1,000,000 Btu/hour	15 feet	975 feet

**Table C-2C  
Phase 1 Certified Units  
Minimum Stack Height of 20 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is
<u>250,000 Btu/hour</u>	20 feet	<u>100 feet</u>
<u>350,000 Btu/hour</u>	20 feet	<u>150 feet</u>
<u>500,000 Btu/hour</u>	20 feet	<u>275 feet</u>
<u>750,000 Btu/hour</u>	20 feet	<u>425 feet</u>
<u>1,000,000 Btu/hour</u>	20 feet	<u>525 feet</u>

4) Setback and stack height requirements for Outdoor Hydronic Heaters that are Phase 2 emission level qualified models. Outdoor hydronic heater that meet the applicable, "Phase 2 emission level qualified model" as set forth in Paragraph B and purchased after [insert rule promulgation date] must be installed at a minimum distance from the property line and stack height, measured from ground level to the top of stack:

- a. OHH with a heat input rating no greater than 1,000,000 Btu/hour and a stack height no less than 15 feet must installed at least 100 feet from the property line
- b. An OHH with a heat input rating no greater than 1,000,000 Btu/hour and a stack height of at least 10 feet but not greater than 15 feet must installed at least 150 feet from the property line.

5) Outdoor Hydronic Heaters that apply to be locally certified units pursuant to Paragraph 3.B.2.b.

- a. Following receipt of a complete application for a locally certified unit, the Department will determine the minimum setback distance from the OHH unit to the property line of the owner at stack heights of 10, 15, and 20 feet that demonstrates compliance with the National Ambient Air Quality Standards.
- b. The minimum distances determined in subparagraph 5.a will supersede the minimum distances specified in Paragraphs C.2 through C.4 of this section for uncertified units.
- c. The public shall be given notice of the determination of an alternative minimum distance on any unit being reviewed as a locally certified unit. The public will be provided a minimum of 30 days to provide comment to the Department. The Department shall respond to the comments received prior to issuing a final alternative minimum distance for a locally certified unit.
- d. After consideration of the application for a locally certified unit and comments received from the public, the Air Pollution Control Officer shall issue a determination for a locally certified unit.

6) Stack Configuration. Notwithstanding the minimum stack height requirement specified in Paragraphs C.2 through C.4 of this section, the exhaust stack of the OHH shall be two feet higher than the peak of the OHH and no less than 10 feet above ground elevation measured at the point of installation. The

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Minimum Stack Height of 10 feet¶  
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stack shall be oriented vertically and the discharge of exhaust shall be unobstructed.

- 7) Multiple OHH Units. An owner or operator of more than one Outdoor Hydronic Heater must use the following procedure to determine the minimum distance of your OHH to the property line.
- Determine the total heat input rating of all OHH units on the property.
  - Determine the lowest stack height of any individual OHH.
  - Determine the certification status of the highest emitting unit
  - Determine the minimum distance for your OHH using the table that applies to the heat input, stack height, and certification status established in steps a, b, and c.

D. Installed Units

- Units installed prior to *[insert rule promulgation date of ordinance]* shall be operated and maintained in conformance with the manufacturer's instructions and the requirements of this ordinance. In the event of a conflict, the requirements of this ordinance shall apply unless the manufacturer's instructions are stricter, in which case the manufacturer's instructions shall apply.
- Time Limit Removal Program. All installed and existing outdoor hydronic heaters within Linn County that do not meet the applicable requirements of Paragraph C for new units shall be removed from all properties by *[insert date that is 3 years from promulgation date]* or rendered permanently inoperable by *[insert date that is 3 years from promulgation date]*.
- Prior Sale or Transfer of Real Property. Prior to the completion or consummation of a sale or transfer of any real property on or after *[date]*, all existing and/or installed outdoor hydronic heaters that do not meet the applicable requirements of Paragraph C for new units shall be replaced, removed, or rendered permanently inoperable.

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E. Visible Emission Standard

- No person shall cause or allow the emission of a smoke plume from any outdoor hydronic heater to exceed an average of 20 percent opacity for six consecutive minutes in any one- hour period.

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F. Fuel Requirements

- No person that operates an outdoor hydronic heater shall use a fuel other than the following:
  - Untreated wood;
  - Wood pellets made from untreated wood;
  - Home heating oil in compliance with the applicable sulfur content limit, propane or natural gas may be used as starter fuels for dual-fired outdoor hydronic heaters as specifically permitted by manufacturer's instructions;
  - Trees, tree trimmings, branches, and stumps, but does not include brush, weeds, leaves, grass, shrubbery, yard trimmings, or other landscape wastes;
  - Biomass as defined in Section 10.2 of this ordinance
  - Other fuels as approved by the Department.
- Fuel stored on site shall be covered or kept in an enclosed structure.

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G. Nuisance Conditions

1. No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration that are injurious to human, plant or animal life or to property, or that unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, toxic, or deleterious emission, either alone or in combination with others.
2. If an existing Outdoor Hydronic Heater is, through the course of a proper investigation by the Department, creating a verifiable nuisance, the following steps may be taken by the owner and the (appropriate department) having jurisdiction:
  - a. Modifications made to the unit to eliminate the nuisance such as extending the chimney, or relocating the Outdoor Hydronic Heater or both.
  - b. Cease and desist operating the unit until reasonable steps can be taken to ensure that the Outdoor Hydronic Heater will not be a nuisance.

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H. Permitting of Outdoor Hydronic Heaters

1. Any person building, erecting, altering, or replacing an Outdoor Hydronic Heater shall first obtain a permit for authorization to install and operate prior to the initiation, construction, installation, or alteration of any portion of the Outdoor Hydronic Heater. Thereafter, a permit for modification and additions to the existing sources and new equipment must be obtained before any on-site construction takes place.
2. Every application for Authorization to Install and Operate pursuant to this section shall be filed in the manner and form prescribed by the Air Pollution Control Officer.
3. The Air Pollution Control Officer shall act within a reasonable period of time on an application for Authorization to Install and Operate, and shall notify the applicant in writing of the approval, conditional approval, or denial.
4. In the event of denial of an application for Authorization to Install and Operate, the Air Pollution Control Officer shall notify the applicant in writing of the reasons therefore. Service of this notification may be made in person or by certified mail, and such service may be proven by the written acknowledgment of the persons served or by affidavit of the person making the service. The Air Pollution Control Officer shall not accept any additional application unless the applicant has corrected the conditions specified by the Air Pollution Control Officer as the reasons for denial of the permit.
5. Installed Units. Units that are installed prior to [insert date of promulgation] shall apply for an Authorization to Install and Operate within [insert date two year from date of promulgation].
6. Transfer of Permits. An Authorization to Install & Operate permit for an Outdoor Hydronic Heater shall be non-transferable:
  - a. From one location to another
  - b. From one piece of equipment to another
  - c. From one person to another.

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## Section 10.2 Definitions

“Biomass” means <sup>1</sup>:

1. Any organic material grown for the purpose of being converted to energy;
2. Any organic byproduct of agriculture that can be converted into energy; or
3. Any material that can be converted into energy and is nonmerchutable for other purposes, that is segregated from other nonmerchutable material, and that is:
  - a. A forest-related organic resource, including mill residues, precommercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or
  - b. A wood material, including pallets, crates, dunnage, manufacturing and construction materials (other than pressure-treated, chemically-treated, or painted wood products), and landscape or right-of-way tree trimmings.

Source:

<sup>1</sup> 40 CFR Part 60 Subpart B Adoption and Submittal of State Plans for Designated Facilities

Section 10.24 Penalty shall be modified as noted where language added is underlined and language ~~deleted~~ is shown stricken as follows

### Section 10.24 Penalty

A violation of any of the requirements of this ordinance ~~are~~ is subject to the following penalties:

1. A violation of any provision of this ordinance or any code, rules, or regulations adopted herein by reference shall constitute a county infraction.
2. Open Burning and Outdoor Hydronic Heater Penalties.
  - a. Any person convicted of committing a county infraction upon Section 10.8(3) (Outdoor Hydronic Heaters) or Section 10.10 (Open Burning) of this ordinance shall be fined as follows:

First offense: \$100

Second offense: \$200

Third and subsequent offense: according to the provisions of §10.24(3)

- b. Notwithstanding § 10.24(2)(a) of this ordinance, any person convicted of committing a county infraction based upon Section 10.8(3) (Outdoor Hydronic Heaters) or Section 10.10 (Open Burning) of this ordinance shall be fined according to the provisions of §10.24(3) if the material contained in the ~~open~~ burning involves any of the following:

- 1) tires or other rubber materials
- 2) asphalt shingles or other asphalt materials

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- 3) any material potentially containing asbestos, unless it was tested by an approved laboratory prior to the burning and proven to be negative
  - 4) creosote treated wood
  - 5) trade waste materials
- c. Notwithstanding § 10.24(2)(a) of this ordinance, any person convicted of committing a county infraction based upon Section 10.8(3) (Outdoor Hydronic Heaters) or Section 10.10 (Open Burning) of this ordinance shall be fined according to the provisions of §10.24(3) if the burning involves commercially generated waste including, but not limited to, burning to avoid fees for proper disposal, burning in conjunction with scrapping or salvaging operations, or burning material hauled from other locations.
3. Pursuant to authority granted by §455B.146 of the Code of Iowa, any person charged with committing a county infraction based upon any section of this ordinance (except Section 10.8(3) or 10.10 as specifically exempted above) shall, upon conviction be subject to a civil penalty of not more than Ten Thousand Dollars (\$10,000) per day for each day of the violation. Each day that a violation occurs or is permitted to exist by the violator shall constitute a separate offense.

*Paragraphs 4 through 11 of §10.24 remained unchanged.*

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**Table C-3A**  
**Phase 2 Certified Units**  
**Minimum Stack Height of 10 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is
0.25 MMBtu/hour	10 feet	175 feet
0.50 MMBtu/hour	10 feet	275 feet
0.75 MMBtu/hour	10 feet	375 feet
1.00 MMBtu/hour	10 feet	475 feet

**Table C-3B**  
**Phase 2 Certified Units**  
**Minimum Stack Height of 15 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is
0.25 MMBtu/hour	15 feet	75 feet
0.50 MMBtu/hour	15 feet	150 feet
0.75 MMBtu/hour	15 feet	225 feet
1.00 MMBtu/hour	15 feet	300 feet

**Table C-3C**  
**Phase 2 Certified Units**  
**Minimum Stack Height of 20 feet**

If the heat input rating of your OHH is no greater than	and your stack height, measured from ground level, is no less than	then the minimum distance of your OHH to the property line is
0.25 MMBtu/hour	20 feet	50 feet
0.50 MMBtu/hour	20 feet	100 feet
0.75 MMBtu/hour	20 feet	150 feet
1.00 MMBtu/hour	20 feet	200 feet