**Section 218.429 Standards for Control Devices**

Control devices used to comply with Section 218.428(c) of this Part shall comply with the following:

a) If the control device is a vapor recovery system (for example, condensers and adsorbers), it shall be designed and operated to recover the VOM emissions vented to it with an efficiency of 95 percent or greater.

b) If the control device is an enclosed combustion device, it shall be designed and operated to reduce the VOM emissions vented to it with an efficiency of 95 percent or greater, or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816° C.

c) If the control device is a flare, it shall:

1) Be designed for and operated with no visible emissions as determined by USEPA Reference Method 22, 40 CFR 60, Appendix A (1986), incorporated by reference in Section 218.112, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

2) Be operated with a pilot flame present at all times and shall be monitored with a thermocouple or any other equivalent device to detect the presence of the pilot flame.

3) Be steam-assisted, air assisted, or nonassisted.

4) Be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be calculated using the following equation:



Where:

|  |  |  |
| --- | --- | --- |
| Hr | = | Net heating value of the sample in MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25° C and 760 mmHg, but the standard temperature for determining the volume corresponding to one mole is 20° C; |
| K | = | Constant, 1.740 x 10-7 (l/ppm) (g-mole/scm) (MJ/Kcal) |

where

standard temperature for (g-mole/scm) is 20° C;

|  |  |  |
| --- | --- | --- |
| Ci | = | Concentration of sample component i in ppm as measured by USEPA reference method 18, 40 CFR 60, Appendix A (1986), and ASTM D 2504-83, both incorporated by reference in Section 218.112;  |
| Hi | = | Net heat of combustion of sample component I, kcal/g mole. The heats of combustion may be determined using ASTM D 2382-83, incorporated by reference in Section 218.112 of this Part, if published values are not available or cannot be calculated. |

5) Steam-assisted and nonassisted flares shall be designed and operated with an exit velocity, as determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by USEPA Reference Method 2 or 2A, 40 CFR 60, Appendix A (1986) incorporated by reference in Section 218.112 of this Part, as appropriate, by the unobstructed (free) cross sectional area of the flare tip, less than 18 m/sec (60 ft/sec).

6) Air-assisted flares shall be designed and operated with an exit velocity less than the maximum permitted velocity, V[m]ax as determined by the following equation:

Vmax = 8.706 + 0.7084 (Hr);

|  |  |  |
| --- | --- | --- |
| Vmax | = | Maximum permitted velocity, m/se; |
| 8.706 | = | Constant; |
| 0.7084 | = | Constant; |
| Hr  | = | The net heating value as determined in subsection (c)(4) of this section. |

d) The following information pertaining to closed vent systems and control devices subject to Section 218.429 shall be maintained by the owner or operator. These records shall be updated as necessary to describe current operation and equipment. The records shall be retained at a readily accessible location at the source for a minimum of two years after the control device is permanently shutdown.

1) Detailed schematics, design specifications, and piping and instrumentation diagrams;

2) The dates and description of any changes in design specifications;

3) A description of the parameter or parameters monitored and recorded as required in subsection (f)(1) to ensure that the control devices are operated and maintained in conformance with their design and an explanation why that parameter (or parameters) was selected for monitoring.

e) The control device shall be operated at all times when emissions may be vented to it.

f) Owners and operators of control devices used to comply with this Subpart shall monitor each control device to ensure that the control device is operated and maintained in conformance with its designs at all times that emissions may be vented to it. This monitoring shall be conducted in accordance with Section 218.429(d)(3). The records prepared as part of this monitoring activity shall include the dates of startup and shutdown of control devices and identify periods when the devices are not operated as designed, including periods when a flare pilot light does not have a flame.

g) The requirements of subsections (d), (e) and (f) shall not apply to a combustion device located at the source used for disposal of purged process fluid which is subject to the Burning of Hazardous Waste in Boilers and Industrials Furnaces (BIF) rules, 40 CFR Parts 260, 261, 264, 265, 266, and 270, or which is subject to the Resource Conservation and Recovery Act (RCRA) rules 35 Ill. Adm. Code Parts 703, 720, 721, 724, 725, and 726. The owner or operator of such combustion device shall satisfy applicable provisions of the RCRA or BIF rules.

(Source: Amended at 17 Ill. Reg. 16636, effective September 27, 1993)