

PART 7

Standards of Performance for New Affected Facilities

REGULATION 7.01 General Provisions

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes general requirements for new affected facilities.

SECTION 1 Applicability

Unless specifically exempted in Regulation 2.02 *Air Pollution Regulation Requirements and Exemptions*, this regulation applies to any affected facility the construction, modification, or reconstruction of which is commenced on or after the effective date of an applicable standard of performance in Regulation 7.

SECTION 2 Permits Required

Unless specifically exempted in Regulation 2.02, all affected facilities must obtain the appropriate permit issued by the District pursuant to Regulation 2 *Permit Requirements* before commencing construction, modification, or reconstruction.

SECTION 3 Reporting and Recordkeeping

Regardless of any specific requirements in other District regulations, the following reporting and recordkeeping requirements shall apply:

- 3.1 The owner or operator of an affected facility shall submit to the District written notification of the following:
 - 3.1.1 The anticipated date of initial startup of an affected facility not more than 60 days or less than 30 days before that date, and
 - 3.1.2 The actual date of initial startup of an affected facility within 15 days after that date.
- 3.2 The owner or operator of an affected facility shall retain for at least 2 years a record of the occurrence and duration of any startup, shutdown, malfunction, or emergency of the affected facility.
- 3.3 A written report of excess emissions shall be submitted to the District by each owner or operator of an affected facility for each calendar quarter. The report shall include the magnitude of excess emissions as measured by the required monitoring equipment reduced to the units of the applicable standard and the date and time of commencement and completion of each period of excess emissions. Periods of excess emissions due to startup, shutdown, malfunction, or emergency shall be specifically identified. The nature and cause of any malfunction, if known, and corrective action taken or preventive measures adopted shall be reported. Each quarterly report is due by the 30th day following the end of the calendar quarter. Reports are not required for any quarter unless there has been a period of

- excess emissions.
- 3.4 The owner or operator of an affected facility shall maintain a file of all measurements, including monitoring and performance testing measurements, and all other reports and records required by this regulation. Each measurement, report, or record shall be retained for at least 2 years following the date of the measurement, report, or record.
 - 3.5 The owner or operator of an affected facility shall submit to the District, as requested, all reports on emissions, equipment status, process information, in-stack emission monitoring, stack testing, fuels data, and other relevant information pertaining to the affected facility.

SECTION 4 Performance Tests

- 4.1 Within 60 days after achieving the maximum production rate at which an affected facility will be operated, but not later than 180 days after initial startup of the affected facility, and at other times as may be required by the District, the owner or operator of an affected facility, except an affected facility specified below, shall conduct performance tests according to Regulation 1.04 *Performance Tests* and submit to the District a written report of the results of the performance tests:
 - 4.1.1 A process operation with a process weight rate of less than 100 tons per hour,
 - 4.1.2 An indirect heat exchanger of 100 million BTU heat input per hour or less,
 - 4.1.3 An incinerator with a charging rate of 45 metric tons per day (50 tons/day) or less, or
 - 4.1.4 An affected facility specified in Regulations 7.09 *Standards of Performance for New Process Gas Streams*, 7.12 *Standard of Performance for New Storage Vessels for Volatile Organic Compounds*, 7.14 *Standards of Performance for Selected New Petroleum Refining Processes and Equipment*, 7.15 *Standards of Performance for Gasoline Transfer to New Service Station Storage Tanks (Stage I Vapor Recovery)*, 7.18 *Standards of Performance for New Solvent Metal Cleaning Equipment*, 7.20 *Standard of Performance for New Gasoline Loading Facilities at Bulk Plants*, 7.22 *Standard of Performance for New Volatile Organic Materials Loading Facilities*, 7.35 *Standard of Performance for New Ethylene Producing Plants*, 7.36 *Standard of Performance for New Volatile Organic Compound Water Separators*, 7.52 *Standard of Performance for New Fabric, Vinyl and Paper Surface Coating Operations*, 7.57 *Standard of Performance for New Graphic Arts Facilities Using Rotogravure and Flexography*, 7.58 *Standard of Performance for New Factory Surface Coating Operations of Flat Wood Paneling*, 7.59 *Standard of Performance for New Miscellaneous Metal Parts and Products Surface Coating Operations*, or 7.60 *Standard of Performance for New Synthesized Pharmaceutical Product Manufacturing Operations*.
- 4.2 The District may, upon written notice or as a condition of a permit, require the owner or operator of an affected facility, including those specified in sections 4.1.1 through 4.1.4, to conduct performance tests according to Regulation 1.04 and submit to the District a written report of the results of the performance tests.

SECTION 5 Notification and Recordkeeping

- 5.1 The owner or operator of an affected facility shall submit to the District written notification of the following:
 - 5.1.1 The date on which construction, reconstruction, or modification of an affected facility commenced, postmarked no later than 30 days after that date,
 - 5.1.2 The anticipated date of initial startup of an affected facility, postmarked not more than 60

- days nor less than 30 days before that date,
- 5.1.3 The actual date of initial startup of an affected facility, postmarked within 15 days after that date,
 - 5.1.4 The modification of an affected facility, postmarked 60 days, or as soon as practicable, before the change is commenced, including information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The District may request additional relevant information subsequent to this notice, and
 - 5.1.5 The date which demonstration of the continuous monitoring system performance test commences in accordance with section 6.3, postmarked not less than 30 days before that date.
- 5.2 The owner or operator of an affected facility shall maintain records of the occurrence and duration of any startup, shutdown, malfunction, or emergency in the operation of the affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.
- 5.3 The owner or operator of an affected facility that is required to install a continuous monitoring system shall submit to the District for every calendar quarter a written report of excess emissions . Both a printed report and computer tape or cards shall be furnished in the format specified by the District. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the following information:
- 5.3.1 The magnitude of excess emissions computed in accordance with Section 6, any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions,
 - 5.3.2 All hourly averages for sulfur dioxide and nitrogen oxides monitors. The hourly averages shall be made available on computer tape or cards,
 - 5.3.3 Specific identification of each period of excess emissions that occurs during startups, shutdowns, malfunctions, and emergencies of the affected facility, the nature and cause of the malfunction, if known, and the corrective action taken or preventive measures adopted,
 - 5.3.4 The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of the system repairs or adjustments, and
 - 5.3.5 When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted, this information shall be stated in the report.
- 5.4 The owner or operator of an affected facility shall maintain a file of all measurements, including CEMS, monitoring device, and performance testing measurements; CEMS performance evaluations; CEMS or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and other information required by this regulation. Each record shall be made in a permanent form suitable for inspection, retained for at least 2 years following the date of the measurement, maintenance, report or record, and made available to the District upon request.

SECTION 6 Monitoring Requirements

- 6.1 Unless otherwise approved by the District or specified in applicable sections, this section applies to all CEMS required under this regulation.
- 6.2 All CEMS and monitoring devices shall be installed and operational prior to conducting

performance tests under Section 4. Verification of operational status shall, as a minimum, consist of the following:

- 6.2.1 For CEMS referenced in section 6.3, completion of the conditioning period specified by applicable requirements in 40 CFR Part 60 Appendix B,
 - 6.2.2 For CEMS referenced in section 6.3, completion of 7 days of operation, and
 - 6.2.3 For monitoring devices referenced in applicable regulations, completion of the manufacturer's written requirements or recommendations for checking the operation of the device.
- 6.3 During a performance test required by Section 4, or within 30 days of this test, and at other times as may be required by the District, the owner or operator of an affected facility with a required CEMS monitoring a parameter included in section 6.3 shall conduct CEMS performance evaluations and submit to the District within 60 days of the evaluations a copy of the written report of the results of the evaluations. These CEMS performance evaluations shall be conducted in accordance with the following specifications and procedures of 40 CFR Part 60 Appendix B:
- 6.3.1 Performance Specification 1 for CEMS measuring opacity,
 - 6.3.2 Performance Specification 2 for CEMS measuring nitrogen oxides emissions,
 - 6.3.3 Performance Specification 2 for CEMS measuring sulfur dioxide emissions, and
 - 6.3.4 Performance Specification 3 for CEMS measuring the oxygen content or carbon dioxide content of effluent gases.

Section 7 Additional Standards

- 7.1 If an affected facility would, except for the date for which construction, modification, or reconstruction commenced, be subject to Regulation 6.16 *Standard of Performance for Existing Large Appliance Surface Coating Operations* and the affected facility is subject to an emission limit in 40 CFR Part 60 Subpart SS, then the affected facility shall, in addition to complying with the applicable requirements of Regulation 7, also comply with either Regulation 6.16 Section 3 or the exemption requirements of Regulation 6.16 Section 5 on the basis of a calendar-day averaging period.
- 7.2 If an affected facility would, except for the date for which construction, modification, or reconstruction commenced, be subject to Regulation 6.17 *Standard of Performance for Existing Automobile and Truck Surface Coating Operations* and the affected facility is subject to an emission limit in 40 CFR Part 60 Subpart MM, then the affected facility shall, in addition to complying with the applicable requirements of Regulation 7, also comply with Regulation 6.17 Section 3 on the basis of a calendar-day averaging period. Compliance with any emission standard of Regulation 6.17 Section 3 that is expressed in terms that include a volume of applied coating solids shall be demonstrated using capture efficiency as measured according to the method in Regulation 1.05 *Compliance with Emission Standards and Maintenance Requirements*.

Adopted v1/7-14-76; effective 9-1-76; amended v2/11-16-83, v3/4-20-88, v4/5-17-00.

REGULATION 7.06 Standards of Performance for New Indirect Heat Exchangers

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates to: KRS Chapter 77 Air Pollution Control

Pursuant to: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the air pollution control board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new indirect heat exchangers.

SECTION 1 Applicability

This regulation applies to each affected facility commenced after the applicable classification date defined below.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Affected facility" means an indirect heat exchanger having input capacity of more than one million BTU per hour.
- 2.2 "Classification date" means:
 - 2.2.1 August 17, 1971 for affected facilities with a capacity of more than 250 million BTU per hour heat input with respect to particulate emissions, sulfur dioxide emissions and, if fuels other than lignite are burned, nitrogen oxide emissions;
 - 2.2.2 April 9, 1972 for affected facilities with a capacity of 250 million BTU per hour heat input or less with respect to particulate emissions and sulfur dioxide emissions; or
 - 2.2.3 December 22, 1976 for affected facilities with a capacity of more than 250 million BTU per input with respect to nitrogen oxides if lignite is the fuel burned.
- 2.3 "Coal" means all solid fuels classified as anthracite, bituminous, sub-bituminous or lignite by ASTM designation D388-66.
- 2.4 "Coal refuse" means waste products of coal mining, cleaning, and coal preparation operations, which contain coal, matrix material, clay, and other materials.
- 2.5 "Fossil fuel" means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.
- 2.6 "Indirect heat exchanger" means any piece of equipment, apparatus or contrivance used for the combustion of fuel in which the energy produced is transferred to its point of usage through a medium that does not come in contact with or add to the products of combustion.
- 2.7 "Wood residue" means bark, sawdust, slabs, chips, shaving, mill trim, and other wood products derived from wood processing and forest management operations.

SECTION 3 Method for Determining Allowable Emission Rates

- 3.1 The total rated heat input capacity of all affected facilities within a source, including those for which an application to construct, modify or reconstruct has been submitted to the District,

shall be used as specified in sections 4 and 5 to determine the allowable emission in terms of pounds per million BTU input.

- 3.2 At such times as any affected facility is assigned an allowable emission rate by the District, at no time thereafter shall that rate be changed due to inclusion or shutdown of any affected facility at the source.

SECTION 4 Standard for Particulate Matter

No owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility, particulate matter in excess of that specified below:

- 4.1 For sources having a total heat input capacity as determined by section 3.1 that are:
 - 4.1.1 10 million BTU per hour or less, the standard is 0.56 pounds per million BTU actual heat input;
 - 4.1.2 250 million BTU per hour or more, the standard is 0.10 pounds per million BTU actual heat input;
 - 4.1.3 If the affected facility commenced before the effective date of this regulation, for heat input values between 4.1.1 and 4.1.2 above, the standard in pounds per million BTU actual heat input is equal to 0.9634 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.2356 power;
 - 4.1.4 If the affected facility commenced on or after the effective date of this regulation, for heat input values between 4.1.1 and 4.1.2 on previous page, the standard in pounds per million BTU actual heat input is equal to 1.919 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.535 power; or
- 4.2 Emissions which exhibit greater than 20% opacity except:
 - 4.2.1 For indirect heat exchangers with a heat input capacity of less than 250 million BTU/hr, a maximum of 40% opacity shall be permissible for not more than two consecutive minutes in any 60 consecutive minutes;
 - 4.2.2 For indirect heat exchangers with heat input capacity of less than 250 million BTU/hr, a maximum of 40% opacity shall be permissible for not more than six consecutive minutes in any 60 consecutive minutes during cleaning the fire box or blowing soot; or
 - 4.2.3 For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendations.

SECTION 5 Standard for Sulfur Dioxide

No owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases which contain sulfur dioxide in excess of that specified below:

- 5.1 For sources which have a total heat input capacity as determined by section 3.1:
 - 5.1.1 The standard is 1.0 pound per million BTU actual heat input for combustion of liquid and gaseous fuels if the source has a total heat input capacity of 145 million BTU per hour or less. The standard is four pounds per million BTU actual heat input for combustion of solid fuels if the source has a total heat input capacity of ten million BTU per hour or less;
 - 5.1.2 If the source has a total heat input capacity of 250 million BTU per hour or more, the standard is 0.8 pound per million BTU actual heat input for combustion of liquid and

- gaseous fuels and 1.2 pounds per million BTU actual heat input for combustion of solid fuels;
- 5.1.3 For heat input values between 5.1.1 and 5.1.2 above, the standard in pounds per million BTU actual heat input is equal to:
 - 5.1.3.1 For combustion of liquid and gaseous fuels, 7.7223 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.4106 power;
 - 5.1.3.2 For combustion of solid fuels, 9.46 times that quantity obtained by raising the total heat input capacity (in millions of BTU per hour) to the -0.3740 power.
 - 5.2 When different fuels are burned simultaneously in any combustion, the applicable standard shall be determined by proration using the equation in Appendix A.
 - 5.3 Compliance shall be based on the total heat input from all fuels burned, including gaseous fuels.

SECTION 6 Standard for Nitrogen Oxides

- 6.1 No owner or operator of an affected facility with a heat input capacity of 250 million BTU per hour or more shall cause to be discharged into the atmosphere any gases which contain nitrogen oxides expressed as nitrogen dioxide in excess of:
 - 6.1.1 0.20 lb per million BTU heat input (0.36 g per million cal) derived from gaseous fuel;
 - 6.1.2 0.30 lb per million BTU heat input (0.54 g per million cal) derived from liquid fuel;
 - 6.1.3 0.70 lb per million BTU heat input (1.26 g per million cal) derived from solid fuel (except lignite);
 - 6.1.4 0.60 lb per million BTU heat input (1.08 g per million cal) derived from lignite fuel.
- 6.2 When different fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the equation in Appendix B.

SECTION 7 Emission and Fuel Monitoring

This section applies to any affected facility of more than 250 million BTU per hour rated heat input capacity.

- 7.1 Each owner or operator shall install, calibrate, maintain, and operate CEMSs for measuring the opacity of emissions, sulfur dioxide emissions, nitrogen oxides emissions and either oxygen or carbon dioxide except as provided in section 7.2.
- 7.2 Certain of the CEMS requirements under section 7.1 do not apply to owners or operators under the following conditions:
 - 7.2.1 For an indirect heat exchanger that burns only gaseous fuel, CEMSs for measuring the opacity of emissions are not required;
 - 7.2.2 For an indirect heat exchanger that burns only natural gas, CEMSs for measuring sulfur dioxide emissions are not required;
 - 7.2.3 Notwithstanding Regulation 7.01 section 6.2, installation of a CEMS for nitrogen oxides may be delayed until after the initial performance tests under Regulation 7.01 section 4 have been conducted. If the owner or operator demonstrates during the performance test that emissions of nitrogen oxides are less than 70% of the applicable standards in section 6, a CEMS for measuring nitrogen oxides emissions is not required. If the initial performance test results show that nitrogen oxide emissions are greater than 70% of the applicable standard, the owner or operator shall install a CEMS for nitrogen oxides within

one year after the date of the initial performance tests under Regulation 7.01 section 4 and comply with all other applicable monitoring requirements under these regulations.

- 7.2.4 If an owner or operator does not install any CEMSs for sulfur oxides and nitrogen oxides, as provided under sections 7.2.1 and 7.2.3 or sections 7.2.2 and 7.2.3, a CEMS for measuring either oxygen or carbon dioxide is not required.
- 7.2.5 For an indirect heat exchanger that does not use a flue gas desulfurization device, a CEMS for measuring sulfur dioxide emissions is not required if the owner or operator monitors sulfur dioxide emissions by fuel sampling & analysis.
- 7.3 For performance evaluations under Regulation 6.01 section 6.3 and calibration checks under Regulation 7.01 section 6.4, the following procedures shall be used:
 - 7.3.1 Reference Method 6 or 7, as applicable, shall be used for conducting performance evaluations of sulfur dioxide and nitrogen oxides CEMSs;
 - 7.3.2 Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of 40 CFR Part 60 Appendix B;
 - 7.3.3 For affected facilities burning fossil fuel, the span value for a CEMS measuring the opacity of emissions shall be 80%, 90%, or 100% and for a CEMS measuring sulfur oxides or nitrogen oxides the span value shall be determined as shown in Appendix C;
 - 7.3.4 All span values computed under section 7.3.3 for burning combinations of fuels shall be rounded to the nearest 500 ppm;
 - 7.3.5 For an indirect heat exchanger that simultaneously burns fossil fuel and nonfossil fuel, the span value of all CEMSs shall be subject to the District's approval.
- 7.4 A CEMS for measuring either oxygen or carbon dioxide in the flue gases shall be installed, calibrated, maintained and operated by the owner or operator.
- 7.5 For any CEMS installed under section 7.4, the following conversion procedure shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/million BTU);
 - 7.5.1 When a CEMS for measuring oxygen is selected, the measurement of the pollutant concentration and oxygen concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the District shall be when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E = \frac{20.9CF}{20.9 - \% \text{ oxygen}}$$

where:

E, C, F and % oxygen are determined under section 7.6.

- 7.5.2 When a CEM for measuring carbon dioxide is selected, the measurement of a pollutant concentration and carbon dioxide concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$$E = \frac{100 CFC}{\% \text{ carbon dioxide}}$$

where:

E, C, Fc and % carbon dioxide are determined under section 7.6.

- 7.6 The values used in the equations in sections 7.5.1 and 7.5.2 are derived as follows:
- 7.6.1 E = Pollutant emission, g/million cal (lb/million BTU).
- 7.6.2 C = Pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by .0000415 M g/dscm per ppm (2.59 times ten raised to the minus nine power times M lb/dscf per ppm) where
M = pollutant molecular weight, g/g-mole (lb/lb-mole).
M = 64.07 for sulfur dioxide and 46.01 for nitrogen oxides.
- 7.6.3 F, Fc = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc), respectively, as follows:
- 7.6.3.1 For anthracite coal as classified according to ASTM D388-66(72), F = 1.139 dscm/million cal (10140 dscf/million BTU) and Fc = 0.222 scm CO₂/million cal (1980 scf CO₂/million BTU).
- 7.6.3.2 For sub-bituminous and bituminous coal as classified according to ASTM-D388-66 (72), F = 1.103 dscm/million cal (9820 dscf/million BTU) and Fc = 0.203 scm CO₂/million cal (1810 scf CO₂/million BTU).
- 7.6.3.3 For liquid fossil fuels including crude, residual, and distillate oils, F = 9220 dscf/million BTU and Fc = 1430 scf CO₂/million BTU.
- 7.6.3.4 For gaseous fossil fuels, F = 0.982 dscm/million cal (8740dscg/million BTU). For natural gas, propane and butane fuels, Fc = 0.117 scm CO₂/million cal (1040 scf CO₂/million BTU) for natural gas; 0.135 scm₂ CO /million cal (1200 scf CO₂/million BTU) for propane; and 0.142 scm₂ CO /million cal (1260 scf CO₂/million BTU) for butane.
- 7.6.3.5 For bark, F = 0.450 dscm/million cal (9575 dscf/million BTU) and Fc = 0.091 scm CO₂/million BTU. For wood residue other than bark, F = 0.434 dscm/million cal (9233 dscf/million BTU) and Fc = 0.086 scm CO₂/million cal (1842 scf CO₂/million BTU).
- 7.6.4 The owner or operator may use the equation given in Appendix D to determine an F factor (dscm/million cal, or dscf/million BTU) on a dry basis (if it is desired to calculate F on a wet basis, consult with the District or Fc factor scf of the F or Fc factors specified in section 7.6.3.
- 7.6.4.1 H, C, S, N, and O are content by weight of hydrogen carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired using ASTM method D3178-73 or D3176-74 (solid fuels) or computed from results using ASTM methods D1137-53(75), D1945-64(73), D1946-67(72) (gaseous fuels) as applicable.
- 7.6.4.2 GCV is the gross calorific value (cal/g, BTU/lb) of the fuel combusted determined by ASTM test methods D2015- 66(72) for solid fuels and D1826-64(70) for gaseous fuels as applicable.
- 7.6.5 For affected facilities firing combinations of fuels, the For Fc factors determined by sections 7.6.3 and 7.6.4 shall be prorated in accordance with applicable formula as given in Appendix E.
- 7.7 For the purpose of reports required under Regulation 7.01 section 5.3, periods of excess emissions that shall be reported are defined as follows:

- 7.7.1 Opacity. Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20% opacity, except that one six-minute average per hour of up to 27% opacity need not be reported.
- 7.7.2 Sulfur dioxide. Excess emissions for affected facilities are defined as any three hour period during which the average emissions (arithmetic average of three contiguous one hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standard under section 5.
- 7.7.3 Nitrogen oxides. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any three hour period during which the average emissions (arithmetic average of three contiguous one hour periods) exceed the applicable standards under section 6.
- 7.8 The District may require for any indirect heat exchanger unit of 250 million BTU per hour heat input or less any or all of the emission and fuel monitoring required by this section.

SECTION 8 Test Methods and Procedures

- 8.1 The reference methods in 40 CFR Part 60 Appendix A, except as provided in Regulation 1.04, shall be used to determine compliance with the standards prescribed in sections 4, 5, and 6 as follows:
 - 8.1.1 Method 1 for selection of sampling site and sample traverses;
 - 8.1.2 Method 3 for gas analysis to be used when applying Reference Methods 5, 6, and 7;
 - 8.1.3 Method 5 for concentration of particulate matter and the associated moisture content;
 - 8.1.4 Method 6 for concentration of sulfur dioxide;
 - 8.1.5 Method 7 for concentration of nitrogen oxides.
- 8.2 For Method 5, Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30 dscf) except that smaller process variables or other factors, may be approved by the District. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 160 °C (320 °F).
- 8.3 For Methods 6 and 7, the sampling site shall be the same as that selected for Method 5. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). For Method 6, the sample shall be extracted at a constant rate of 1 liter/min, approximately.
- 8.4 For Method 6, minimum sampling time shall be 20 minutes and the minimum sampling volume shall be 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of 2 samples shall constitute one run. Samples shall be taken at approximately 30 minute intervals.
- 8.5 For Method 7, each run shall consist of at least four grab samples taken at approximately 15 minute intervals. The arithmetic mean of the samples shall constitute the run value.
- 8.6 For each run using the methods in sections 8.1.1, 8.1.2, and 8.1.3, the emissions expressed in g/million cal (lb/million BTU) shall be determined by the following procedure:

$$E = \frac{20.7 \text{ CF}}{200 \text{ -- \% opacity}}$$

where

E = pollutant emission g/million cal (lb/million BTU).

C = pollutant concentration, g/dscm (lb/dscf), determined by Method 5, 6, or 7.

F = a factor as determined in sections 8.6.3, 8.6.4, or 8.6.5 of section 7.

% oxygen = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures of Method 3 as applicable. The sample shall be obtained as follows:

- 8.6.1 For determination of sulfur dioxide and nitrogen oxides emissions, the oxygen sample shall be obtained simultaneously at the same point in the duct as used to obtain the samples for Methods 6 and 7 determinations respectively. For Method 7, the oxygen sample shall be obtained using the grab sampling and analysis procedures of Method 3.
- 8.6.2 For determination of particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the same sampling location used for each run of Method 5 under section 8.2. Method 1 shall be used for selection of the number of traverse points except that no more than 12 sample points are required.
- 8.7 When combination of fossil fuels are fired, the heat input, expressed in cal/hr (BTU/hr), shall be determined during each testing period by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned. Gross caloric value shall be determined in accordance with ASTM methods D2015-66(72) (solid fuels) D240-76 (liquid fuels), or D1826-64(70) (gaseous fuels) as applicable. The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the steam generation system.

Adopted v1/7-14-76; effective 9-1-76; amended v2/4-21-82.

Appendix A to Regulation 7.06

Determination of Allowable Sulfur Dioxide Emissions

Allowable sulfur dioxide emissions in pounds per million BTU per hour heat input =

$$\frac{y a + z b}{y + z}$$

where:

- y = the percent of total heat input derived from liquid or gaseous fuel.
- a = the allowable sulfur dioxide emission in pounds per million BTU heat input derived from liquid or gaseous fuel.
- z = the percent of total heat input derived from solid fuel.
- b = the allowable sulfur dioxide emission in pounds per million BTU heat input derived from solid fuel.

Appendix B to Regulation 7.06

Determination of Allowable Nitrogen Dioxide Emissions

Allowable nitrogen dioxide emissions in pounds per million BTU/hour heat input =

$$\frac{0.0w + 0.2x + 0.5y + 0.1z}{w + x + y + z}$$

where:

- w = the percent of total heat input derived from lignite.
- x = the percent of total heat input derived from gaseous fuel.
- y = the percent of total heat input derived from liquid fuel.
- z = the percent of total heat input derived from solid fuel (except lignite).

Appendix C to Regulation 7.06

**Determination of Span Value
(in parts per million)**

Fossil Fuel	Span Value for Sulfur Dioxide	Span Value for Nitrogen Oxides
Gas	Not applicable	500
Liquid	1,000	500
Solid	1,500	500
Combinations	$1,000y + 1,500z$	$500(x+y) + 1,000z$

where:

- x = the fraction of total heat input derived from gaseous fossil fuel.
- y = the fraction of total heat input derived from liquid fossil fuel.
- z = the fraction of total heat input derived from solid fossil fuel.

Appendix D to Regulation 7.06

Determination of F or Fc Factor

$$F = \frac{10^{-6}[227.2(\%H) + 95.5(\%C) + 35.6(\%S) + 8.7(\%N) - 28.7(\%O)]}{GCV} \quad (\text{MetricUnits})$$
$$= \frac{10^6[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O)]}{GCV} \quad (\text{English units})$$

$$F_c = \frac{2.0 \times 10^{-6}(\%C)}{GCV} \quad (\text{Metricunits})$$

$$F_c = \frac{521 \times 10^{-6}(\%C)}{GCV} \quad (\text{Englishunits})$$

where:

H, C, S, N and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent) respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM method D3178-73 or D3176-74 (solid fuels) or computed from results using ASTM methods D1137-53(75), D19545-64(73), or D1946-67(72) (gaseous fuels) as applicable.

GCV is the gross calorific value (cal/g, BTU/lb) of the fuel combusted, determined by ASTM test method D2015-66(72) for solid fuels or D1826-64(70) for gaseous fuels as applicable.

Appendix E to Regulation 7.06

Determination of F or Fc Factor for Firing Combinations

$$F = xF_1 + yF_2 + zF_3$$

where:

x, y, z = the fraction of total heat input derived from gaseous, liquid, and solid fuel, respectively.

F_1, F_2, F_3 , = the value of F for gaseous, liquid, and solid fuels respectively under sections 7.6.3 and 7.6.4.

$$Fc = \sum X_i (Fc)_i$$

where:

X_i = the fraction of total heat input derived from each type fuel (e.g., natural gas, butane, crude oil, bituminous coal, etc.)

$(Fc)_i$ = the applicable Fc factor for each fuel type determined in accordance with sections 7.6.3 and 7.6.4.

REGULATION 7.07 Standard of Performance for New Incinerators

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of particulate emissions from new incinerators.

SECTION 1 Applicability

This regulation applies to each incinerator commenced on or after April 19, 1972, which is the affected facility. This regulation shall not apply to any medical waste incinerator, existing or new, as defined in Regulation 6.41 or 7.78. It shall not apply to any new municipal solid waste incinerator as defined in Regulation 7.76.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Auxiliary fuel" means a substance burned in an incinerator to supply additional heat to attain temperature sufficiently high to dry and ignite waste material and to maintain ignition of the waste material, but which is never in contact with the waste material.
- 2.2 "Incinerator" means any furnace used in the process of burning waste for the purpose of reducing the volume of the waste by removing combustible matter.

SECTION 3 Standard for Particulate Matter

- 3.1 No owner or operator of any affected facility shall cause, suffer, allow, or permit the emission produced by the incineration of any substance to have greater than 20% opacity.
- 3.2 No owner or operator of an affected facility up to 499 lbs/hr capacity shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.45 g/dscm (0.20 gr/dscf) corrected to 12% carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.
- 3.3 No owner or operator of an affected facility of 500 lb/hr up to and including 45 metric tons per day charging rate (50 tons/day) shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.23 g/dscm (0.1 gr/dscf) corrected to 12% carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.
- 3.4 On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator of an affected facility of more than 45 metric tons per day charging rate (50 tons/day) shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.18g/dscm (0.08 gr/dscf) corrected to 12% carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

SECTION 4 Monitoring of Operations

The owner or operator of an affected facility of more than 45 metric tons per day charging rate (50 tons per day) shall record the daily charging rates and hours of operation.

SECTION 5 Nameplate

All affected facilities shall have a nameplate installed in a conspicuous place on the unit giving the manufacturer's name, model number, rated capacity, and the types of waste material for which the unit is designed.

SECTION 6 Test Methods and Procedures

- 6.1 The reference methods as defined in Regulation 1.04 shall be used to determine compliance with the standard prescribed in section 3.
- 6.2 The sampling time for each run shall be at least 60 minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the District.
- 6.3 If a wet scrubber is used, the gas analysis sample shall reflect flue gas conditions after the scrubber, allowing for carbon dioxide absorption by sampling the gas on the scrubber inlet and outlet sides according to either the procedure under sections 6.3.1 through 6.3.5 or the procedure under section 7.
 - 6.3.1 The outlet sampling site shall be the same as for the particulate matter measurement.
 - 6.3.2 Randomly select nine sampling points within the cross section at both the inlet and outlet sampling sites. Use the first set of three points for the first run, the second set for the second run, and the third set for the remaining set for the third run.
 - 6.3.3 Simultaneously with each particulate matter run, extract and analyze for carbon dioxide an integrated gas sample traversing the three sample points and sampling at each point for equal increments of time. Conduct the runs at both inlet and outlet sampling sites.
 - 6.3.4 Measure the volumetric flow rate at the inlet during each particulate matter run using the full number of traverse points. For the inlet, make two full velocity traverses approximately one hour apart during each run and average the results. The outlet volumetric flow rate may be determined from the particulate matter run.
 - 6.3.5 Calculate the adjusted carbon dioxide percentage using the equation in Appendix A.

SECTION 7 Alternative Procedures

Alternatively, the following procedures may be substituted for the procedures in sections 6.3.3, 6.3.4, and 6.3.5.

- 7.1 Simultaneously with each particulate matter run, extract and analyze for carbon dioxide, oxygen, and carbon monoxide an integrated gas sample traversing the three sample points and sampling for equal increments of time at each point. Conduct the runs at both the inlet and outlet sampling sites.
- 7.2 After completing the analysis of the gas sample, calculate the percentages of excess air for both the inlet and outlet sampling sites.
- 7.3 Calculate the adjusted carbon dioxide percentage using the equation in Appendix B.
- 7.4 Particulate matter emissions, expressed in g/dscm, shall be corrected to 12% carbon dioxide by using the formula in Appendix C.

SECTION 8 Emission Monitoring

A continuous monitoring system for the measurement of opacity of emissions discharged into the atmosphere from each incinerator with a charging capacity of more than 45 metric tons per day (50 tons/day) shall be installed, calibrated, maintained, and operated by the owner or operator subject to this regulation. This requirement does not apply to incinerators using wet scrubbers.

Adopted v1/7-14-76; effective 9-1-76; amended v2/11-16-83, v3/9-15-93.

Appendix A to Regulation 7.07

Calculation for Adjusted Carbon Dioxide Percentage

$$\%CO_2 A = \%CO_2 D \left(\frac{Q_i}{Q_o} \right)$$

where:

- $\%CO_2A$ = the adjusted carbon dioxide percentage which removes the effect of carbon dioxide absorption and dilution air.
 - $\%CO_2D$ = the percentage of carbon dioxide measured before the scrubber, dry basis.
 - Q_i = the volumetric flow rate before the scrubber average of two runs, dscf/min.
 - Q_o = the volumetric flow rate after the scrubber, dscf/min.
-

Appendix B to Regulation 7.07

Calculation for Adjusted Carbon Dioxide Percentage, Alternate Procedure

$$\%CO_2 A = (\%CO_2 D) \frac{(100 + \% EA_i)}{(100 + \% EA_o)}$$

where:

- $\%CO_2A$ = the adjusted outlet carbon dioxide percentage.
- $\%CO_2D$ = the percentage of carbon dioxide measured before the scrubber, dry basis.
- $\%Ea_i$ = the percentage of excess air at the inlet.
- $\%Ea_o$ = the percentage of excess air at the outlet.

Appendix C to Regulation 7.07

Particulate Emissions Correction Calculation Alternate Procedure

$$C_{12} = \frac{12 C_p}{\%CO_2}$$

where:

C_{12} = the concentration of particulate matter corrected to 12% carbon dioxide.

C_p = the concentration of particulate matter.

$\%CO_2$ = the percentage of measured carbon dioxide or, when applicable, the adjusted outlet carbon dioxide percentage as determined by Appendix B.

REGULATION 7.08 Standards of Performance for New Process Operations

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates to: KRS Chapter 77 Air Pollution Control

Pursuant to: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of particulates and nitrous oxide emissions from new sources.

SECTION 1 Applicability

This regulation applies to each process operation that is the affected facility not otherwise regulated by other regulations of Regulation 7 and that commenced construction after September 1, 1976.

SECTION 2 Definitions

Terms used in this regulation that are not defined in this regulation shall have the meaning given them in Regulation 1.02 *Definitions*.

- 2.1 "Affected facility" as related to process operations means the last operation preceding the emission of air contaminants that results:
 - 2.1.1 In the separation of the air contaminant from the process materials, or
 - 2.1.2 In the conversion of the process materials into air contaminants, but does not include an air abatement operation.
- 2.2 "Duplicate operation" means any combination of two or more individual process operations of any size that are of the same nature and are located at the same stationary source.
- 2.3 "Process operation" means any method, form, action, operation, or treatment of manufacturing or processing, and shall include any storage or handling of materials or products before, during, or after manufacturing or processing.
- 2.4 "Process weight" means the total weight of all materials introduced into any affected facility that may cause any emission of particulate matter, but does not include liquid and gaseous fuels charged, air, or uncombined water.
- 2.5 "Process weight rate" means a rate established as follows:
 - 2.5.1 For continuous or long-run steady state operations, the total process weight for the entire period of continuous operation or for a typical portion of continuous operation divided by the number of hours of that period or portion of that period, or
 - 2.5.2 For cyclical or batch unit operations or unit processes, the total process weight for a period that covers a complete operation or an integral number of cycles divided by the hours of actual process operation during that period.

If the nature of any process operation or the design of any equipment would permit more than one interpretation of this definition, then the interpretation that results in the minimum value for allowable emissions shall apply.

SECTION 3 Standard for Particulate Matter

- 3.1 No owner or operator shall cause to be discharged into the atmosphere from any affected facility, or from any air pollution control equipment installed on any affected facility, any gases that may contain particulate matter that:
- 3.1.1 Is equal to or greater than 20% opacity or
- 3.1.2 Is in excess of the quantity in Table 1.
- 3.2 No person shall cause, suffer, allow, or permit any continuous emission into the open air from a control device or stack associated with any affected facility that is equal to or greater than 20% opacity.
- 3.3 Mass Emission Standard
- 3.3.1 The process weight rate entry to be used in Table 1 for duplicate new process operations is the total or combined process weight rate of all the individual component operations.
- 3.3.2 In the event of expansion of any process or duplicate operations that were in existence or under construction as of September 1, 1976, by the addition of a new process or new duplicate operation, the total allowable emission rate for all process or duplicate operations shall be determined by the following equation:

$$F = B + D - E$$

where:

- F = Total allowable emission rate for new and existing process operations.
- B = Allowable emission rate for existing operations determined by entering A into Regulation 6.09 *Standards of Performance for Existing Process Operations* Table 1.
- A = Total process weight for those process operations in existence or under construction as of September 1, 1976.
- D = Allowable emission rate that would be obtained if the new and existing process operations were treated as new operations determined by entering C into Table 1 of this regulation.
- C = Total process weight for both the new and existing process operations.
- E = Allowable emission rate that would be obtained if the existing operations were treated as new operations determined by entering A into Table 1 of this regulation.
- 3.3.3 To determine an allowable emission rate for each stack when duplicate operations vent through separate stacks, the following formula shall be used:

$$E_s = \frac{E_t P_s}{P_t}$$

where:

- E_s = Allowable emission rate for the individual stack.

E_t = Total allowable emission rate for the duplicate operation from Table 1.

P_s = Process weight rate for process operations vented through the individual stack.

P_t = Total process weight rate for the duplicate operation.

- 3.3.4 If a single process operation is vented through multiple stacks, then the allowable emission rate for all stacks venting the source shall be equal to the allowable emission rate as if the source vented through a single stack.

SECTION 4 Standard for Nitrogen Oxides

No owner or operator shall cause to be discharged into the atmosphere from any affected facility or from any air pollution control equipment installed on any affected facility any NO_x fumes in excess of:

4.1 300 ppm by volume expressed as NO_2 , or

4.2 An invisible discharge.

Adopted v1/7-14-76; effective 9-1-76; amended v2/11-16-83, v3/3-17-99.

Table 1 to Regulation 7.08

**Allowable Rate of Particulate Emissions
Based on Process Weight for Affected Facilities**

Process Weight Rate		Maximum Allowable Emission Rate
Lb/Hr.	Tons/Hr.	Lb/Hr.
≤ 1,000	≤ 0.50	2.34
1,500	0.75	3.00
2,000	1.00	3.59
2,500	1.25	4.12
3,000	1.50	4.62
3,500	1.75	5.08
4,000	2.00	5.52
5,000	2.50	6.34
6,000	3.00	7.09
7,000	3.50	7.81
8,000	4.00	8.48
9,000	4.50	9.12
10,000	5.00	9.74
12,000	6.00	10.90
16,000	8.00	13.03
18,000	9.00	14.02
20,000	10.00	14.97
30,000	15.00	19.24
40,000	20.00	23.00
50,000	25.00	26.41
60,000	30.00	29.57
70,000	35.00	30.57
80,000	40.00	31.23
90,000	45.00	31.83
100,000	50.00	32.37
120,000	60.00	33.33
140,000	70.00	34.16
160,000	80.00	34.90
200,000	100.00	36.17
1,000,000	500.00	46.79
2,000,000	1,000.00	52.28
6,000,000	3,000.00	62.32

Interpolation of the data for process weight rates up to 60,000 lb/hr shall be accomplished by use of the equation

$$E = 3.59 P^{0.62}$$

and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr shall be accomplished by the use of the equation

$$E = 17.31 P^{0.16}$$

where:

E = rate of emission in lb/hr.

P = process weight rate in tons/hr.

REGULATION 7.09 Standards of Performance for New Process Gas Streams

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions in new process gas streams.

SECTION 1 Applicability

This regulation applies to each affected facility, which means any process gas stream that:

- 1.1 Is not elsewhere subject to a standard of performance within these regulations with respect to hydrogen sulfide, sulfur dioxide, or carbon monoxide, and
- 1.2 Commenced on or after April 19, 1972.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Process gas stream" means any gas stream emitted from any process.

SECTION 3 Standard for Hydrogen Sulfide

- 3.1 A person shall not cause or allow at an affected facility the release of a process gas stream containing hydrogen sulfide with a concentration greater than 10 grains per 100 dscf at 0% excess oxygen.
- 3.2 A person shall not cause or allow at an affected facility the combustion of a process gas stream containing hydrogen sulfide with a concentration greater than 10 grains per 100 dscf at 0% excess oxygen unless the resulting emission of sulfur dioxide is less than 40 tons per year and a modeling demonstration pursuant to Regulation 2.11 is made showing attainment and maintenance of the NAAQS for sulfur dioxide.

SECTION 4 Standard for Sulfur Dioxide

A person shall not cause or allow at an affected facility the release of a process gas stream containing sulfur dioxide with a concentration greater than 28.63 grains per 100 dscf at 0% excess oxygen unless the resulting emission of sulfur dioxide is less than 40 tons per year and a modeling demonstration pursuant to Regulation 2.11 is made showing attainment and maintenance of the NAAQS for sulfur dioxide.

SECTION 5 Standard for Carbon Monoxide

- 5.1 No person shall emit carbon monoxide gases from a process or waste gas stream unless they are burned at 1,300°F for 0.5 seconds or greater in a direct flame afterburner or equivalent device equipped with an indicating pyrometer that is positioned in the working area at the operator's eye level.
- 5.2 No person shall emit a carbon monoxide waste gas stream from any catalyst regeneration of a petroleum cracking system, petroleum fluid coker, or other petroleum process into the

atmosphere unless the waste gas stream is burned at 1,300°F for 0.5 seconds or greater in a direct flame afterburner, or equivalent, equipped with an indicating pyrometer that is positioned in the working area at the operator's eye level.

Adopted v1/7-14-76; effective 9-1-76; amended v2/6-13-79, v3/6-18-97.

REGULATION 7.11 Standard of Performance For New Asphalt Paving Operations

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new asphalt paving operations.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after the effective date of the regulation. Any source that is ever subject to this regulation will always be subject to it unless the source changes its process to one not covered by this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Asphalt" means a dark-brown to black cementitious material (solid, semisolid, or liquid in consistency) in which the predominating constituents are bitumens that occur in nature as such or that are obtained as residue in refining petroleum.
- 2.2 "Asphalt concrete plant" means any facility used to manufacture asphalt concrete by heating and drying aggregate.
- 2.3 "Asphalt Paving Operations" means the use of asphalt in any paving operation, public or private, including, but not limited to, paving of roads, paving of parking lots, maintenance operations, application of tack coats, sealants, etc., and mixing with asphalt cements.
- 2.4 "Cutback asphalt" means asphalt cement that has been liquified by blending with volatile organic compounds (diluent). Upon exposure to atmospheric conditions, the VOCs evaporate, leaving the asphalt cement to perform its function.
- 2.5 "Emulsified asphalt" means an emulsion of asphalt cement, VOCs, and water that contains a small amount of an emulsifying agent.
- 2.6 "Maintenance operation" means patching of holes and breaks in pavement as necessary for safety.
- 2.7 "Penetrating prime coat" means an application of low-viscosity liquid asphalt to an absorbent surface. It is used to prepare an untreated base for an asphalt surface. The prime coat penetrates the base and plugs the voids, hardens the top, and helps bind it to the overlying asphalt course. It also reduces the necessity of maintaining an untreated base course prior to placing the asphalt pavement.
- 2.8 "Unacceptable emulsion asphalt" means any emulsion asphalt which yields more than 7% by volume of oil distillate when tested according to AASHTO T 59-78 Sections 7 through 9.

SECTION 3 Standard for Particulate Matter

- 3.1 On and after the date on which the performance test required to be conducted by Regulation 7.01 is completed, no owner or operator subject to this regulation shall discharge or cause the discharge into the atmosphere from any affected facility any gases that:
- 3.1.1 Contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf); or
 - 3.1.2 Exhibit 20% opacity, or greater. Where the presence of uncombined water is the only reason for failure to meet the requirements of this section, such failure shall not be a violation.

SECTION 4 Standard for Volatile Organic Compounds

On or after April 1, 1980, no person shall use, or sell for use, manufacture, mix or store cutback asphalts or unacceptable emulsion asphalts for asphalt paving operations, except as exempted in Section 5.

SECTION 5 Exemptions

This regulation shall not apply to the following asphalt paving operations:

- 5.1 Application of penetrating prime coat; or
- 5.2 Maintenance operations during the months of November, December, January, February, and March.

SECTION 6 Recordkeeping Requirements

- 6.1 The manufacturer of cutback or emulsified asphalt shall maintain a current record in a format approved by the District for each batch of cutback or emulsified asphalt produced. The record shall contain the following information as a minimum:
- 6.1.1 The calendar date that the batch was produced;
 - 6.1.2 The quantity in tons produced;
 - 6.1.3 The customer's name and address to where the cutback or emulsified asphalt was sent; and,
 - 6.1.4 For emulsified asphalt only, the oil distillate (organic solvent as determined by ASTM D-244). The District may accept, instead of ASTM D-244, a certification by the emulsified asphalt manufacturer of the composition of the batch if supported by actual batch formulation records.
- 6.2 The record required in section 6.1 shall be maintained on file for a minimum of two years after the date of record and shall be made available to the District upon request.

SECTION 7 Additional Applicable Regulations

Any source subject to this regulation will also be subject to 40 CFR Part 60 Subpart I adopted by reference in Regulation 7.02.

Adopted v1/7-14-76; effective 9-1-76; amended v2/5-15-91.

REGULATION 7.12 Standard of Performance for New Storage Vessels for Volatile Organic Compounds

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful order, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions of volatile organic compounds from new storage vessels.

SECTION 1 Applicability

This regulation applies to each affected facility which means each storage vessel for volatile organic compounds that commences construction or modification on or after April 19, 1972, and has a storage capacity greater than 250 gallons. Any source that is ever subject to this regulation will always be subject to it unless the source changes its process to one not covered by this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "External floating roof" means a storage vessel cover in an open top tank consisting of a double deck or pontoon single deck which rests upon and is supported by the volatile organic compound being contained and is equipped with closure seals to close the space between the roof edge and tank shell.
- 2.2 "Floating roof" means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the volatile organic compound being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.
- 2.3 "Internal floating roof" means a cover or roof in a fixed roof tank which rests upon or is floated upon the volatile organic compound being contained, and is equipped with closure seals to close the space between the roof edge and tank shell.
- 2.4 "Liquid-mounted" means a foam or liquid-filled primary seal mounted in contact with the liquid between the tank wall and the floating roof continuously around the circumference of the tank.
- 2.5 "Metallic shoe seal" includes but is not limited to a metal sheet held vertically against the tank wall by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.
- 2.6 "Reid vapor pressure" is the absolute vapor pressure of certain volatile organic compounds as determined by methods specified by the District.
- 2.7 "Seal" means a sliding seal, either a metallic-shoe-type or a nonmetallic resilient-type seal which prevents volatile organic compounds from escaping around the perimeter of the floating roof.

- 2.8 "Storage vessel" means any tank, reservoir, or container used for the storage of volatile organic compounds, but does not include:
 - 2.8.1 Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,
 - 2.8.2 Subsurface caverns or porous rock reservoirs,
 - 2.8.3 Underground tanks if the total volume of VOCs added to and taken from a tank annually does not exceed twice the volume of the tank, or
 - 2.8.4 Portable tanks of less than 500 gallons capacity which are used for the temporary storage of a product or intermediate product in a manufacturing process.
- 2.9 "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is 6 inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean every fill pipe the discharge opening of which is entirely submerged when the liquid level is 2 times the fill pipe diameter above the bottom of the tank.
- 2.10 "True vapor pressure" means the equilibrium partial pressure exerted by a VOC as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, "Evaporation Loss from Floating Roof Tanks" second edition, February 1980.
- 2.11 "Vapor-mounted" means a foam-filled primary seal mounted continuously around the circumference of the tank so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.
- 2.12 "Vapor recovery system" means a vapor gathering system capable of collecting all VOCs discharged from the storage vessel and a vapor disposal system capable of processing such VOCs so as to prevent their emission to the atmosphere.

SECTION 3 Standard for Volatile Organic Compounds

The owner or operator of any storage vessel to which this regulation applies shall store VOCs as follows:

- 3.1 If the storage vessel has a storage capacity greater than 151,400 liters (40,000 gallons) and if the true vapor pressure of the VOCs as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.
- 3.2 If the storage vessel has a storage capacity greater than 151,400 liters (40,000 gallons) and if the true vapor pressure of the VOCs as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.
- 3.3 If the storage vessel has a storage capacity greater than 946.25 liters (250 gallons), and if the true vapor pressure of the VOCs, as stored, is equal to or greater than 1.5 psia, as a minimum, it shall be equipped with a permanent submerged fill pipe. True vapor pressure "as stored" shall be determined on an instantaneous basis under conditions representing expected worst case conditions.
- 3.4 If the storage vessel is an external floating roof tank with a storage capacity greater than 151,400 liters (40,000 gallons), it shall be retrofitted with a continuous secondary seal extending from the floating roof to the tank wall (a rim-mounted secondary) if:
 - 3.4.1 The tank is a welded tank, the true vapor pressure of the contained liquid is 27.6 kilopascal (4.0 psia) or greater, and the primary seal is one of the following:
 - 3.4.1.1 A metallic-type shoe seal, a liquid-mounted foam seal, or a liquid-mounted liquid-filled type seal, or

- 3.4.1.2 Any other closure device which can be demonstrated equivalent to the above primary seals.
- 3.4.2 The tank is a riveted tank and the true vapor pressure of the contained liquid is 10.3 kilopascal (1.5 psia) or greater.
- 3.4.3 The tank is a welded tank, the true vapor pressure of the contained liquid is 10.3 kilopascal (1.5 psia) or greater and the primary seal is vapor-mounted. If such primary seal closure device can be demonstrated equivalent to the primary seals described in section 3.4.1, then the secondary seal is required when the vapor pressure is 27.6 kilopascal (4.0 psia) or greater.

SECTION 4 Operating Requirements

- 4.1 There shall be no visible holes, tears, or other openings in the seal or any seal fabric.
- 4.2 All openings, except stub drains, shall be equipped with covers, lids, or seals such that:
 - 4.2.1 The cover, lid, or seal is in the closed position at all times except when in actual use,
 - 4.2.2 Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports, and
 - 4.2.3 Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.
- 4.3 External floating roof tanks subject to this regulation shall meet the additional requirements:
 - 4.3.1 The seals must be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall,
 - 4.3.2 The gap area of gaps exceeding 0.32 cm (1/8 in) in width between the secondary seal installed pursuant to section 3.4.1 and the tank wall shall not exceed 6.5 sq cm/0.3 m of tank diameter (1.0 sq in/ft),
 - 4.3.3 All openings in the external floating roof, except for automatic bleeder vents, rim space, and leg sleeves, are to provide a projection below the liquid surface, and
 - 4.3.4 Any emergency roof drain is to be provided with a slotted membrane fabric cover or equivalent that covers at least 90% of the area of the opening.

SECTION 5 Monitoring of Operations

- 5.1 When a liquid having a true vapor pressure greater than 7.0 kPa (1.0 psia) is stored in an external floating roof tank with a capacity of greater than 151,400 liters (40,000 gallons) not equipped with a secondary seal or approved alternative control technology, the owner or operator shall maintain a record of the average monthly storage temperature, the type of liquid, and the Reid vapor pressure of the liquid. The owner or operator shall retain the record for two years after the date on which the record was made.
- 5.2 The true vapor pressure shall be determined by using the average monthly storage temperature and typical Reid vapor pressure of the contained liquid or from typical available data on the contained liquid. Supporting analytical data shall be requested by the District if there is a question on the values reported.
- 5.3 The owner or operator of a petroleum liquid storage vessel with an external floating roof subject to this regulation shall:
 - 5.3.1 Perform routine inspections semi-annually in order to ensure compliance with Section 4, and the inspections shall include a visual inspection of the secondary seal gap,
 - 5.3.2 Measure the secondary seal gap annually in accordance with Section 4 when the floating roof is equipped with a vapor-mounted primary seal, and

- 5.3.3 Maintain records of the types of volatile petroleum liquids stored, the maximum true pressure of the liquid, as stored, and the results of the inspections performed in section 5.3.1.
- 5.4 Compliance provision. Compliance with Section 4 shall be determined by:
 - 5.4.1 Physically measuring the length and width of all gaps around the entire circumference of the secondary seal in each place where a 0.32 cm (1/8 in) uniform diameter probe passes freely (without forcing or binding against the seal) between the seal and tank wall and
 - 5.4.2 Summing the area of the individual gaps.

SECTION 6 Exemptions

Any of the following types of external floating roof tanks storing liquid petroleum shall be exempt from section 3.4 as follows:

- 6.1 A metallic-type shoe seal in a welded tank which has a secondary seal from the top of the shoe seal to the tank wall (a shoe-mounted secondary),
- 6.2 External floating roof tanks storing waxy, heavy pour crudes, or
- 6.3 External floating roof tanks with a closure or other devices which can be demonstrated to the District to be equivalent to the seals required in section 3.4.1.

SECTION 7 Compliance

A new affected facility shall comply with the requirements of this regulation on startup.

SECTION 8 Additional Applicable Regulations

Any source subject to this regulation will also be subject to 40 CFR Part 60 Subpart K adopted by reference in Regulation 7.02.

Adopted v1/7-14-76; effective 9-1-76; amended v2/5-20-81, v3/4-21-82, v4/11-16-83, v5/2-19-86, v6/5-15-91.

REGULATION 7.14 Standard of Performance for Selected New Petroleum Refining Processes and Equipment

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of hydrocarbon emissions from selected new petroleum refining processes and equipment.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after the effective date of this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Affected facility" means vacuum producing systems and process unit turnarounds associated with a petroleum refinery.
- 2.2 "Process unit turnaround" means the shutting down, depressurization, and purging of a process unit or vessel.
- 2.3 "Vacuum producing systems" means equipment which produces a partial vacuum in a vessel.

SECTION 3 Standard for Hydrocarbons

The owner or operator of an affected facility shall install, operate, and maintain all equipment necessary to accomplish the following:

- 3.1 Vacuum producing systems. All gaseous hydrocarbons emitted from condensers, hot wells, vacuum pumps, and accumulators shall be collected and vented to a firebox, flare or other control device of equivalent efficiency as determined by the District; and
- 3.2 Process unit turnaround. The gaseous hydrocarbons purged from a process unit or vessel shall be vented to a firebox, flare, or other control device of equivalent efficiency as determined by the District until the pressure in the process unit is less than 5 psig.

SECTION 4 Monitoring and Reporting Requirements

- 4.1 The owner or operator shall:
 - 4.1.1 Keep a record of each process unit turnaround,
 - 4.1.2 Record the approximate hydrocarbon concentration when the hydrocarbons were first discharged to the atmosphere, and
 - 4.1.3 Record the approximate total quantity of hydrocarbons emitted to the atmosphere.
- 4.2 The owner or operator shall retain the records for at least two years and submit them to the District upon request.

Adopted v1/7-14-76; effective 6-13-79.

REGULATION 7.15

Standards of Performance for Gasoline Transfer to New Service Station Storage Tanks (Stage I Vapor Recovery)

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from gasoline delivery and storage tanks at existing service stations.

SECTION 1 Applicability

This regulation applies to the transfer of volatile organic compounds from transport vehicle tanks into storage tanks at new service stations (constructed or reconstructed after June 13, 1979) and the equipment involved therein. Owner/Operators of service stations and transporters of fuels must comply with this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Affected facility" means the gasoline storage tanks at a service station with a capacity greater than 250 gallons each.
- 2.2 "Service station" means any public or private establishment which dispenses gasoline into vehicle fuel tanks.
- 2.3 "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is six inches above the bottom of the tank or, when applied to a tank which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is 2 times the fill pipe diameter above the bottom of the tank.
- 2.4 "Vapor balance system" means a system which transfers vapors from storage tanks during filling operations to the storage compartment of the transport vehicle delivering fuel.
- 2.5 "Vent line restriction" means:
 - 2.5.1 An orifice of 1/2 to 3/4 inch inside diameter in the vent line,
 - 2.5.2 A pressure-vacuum relief valve which opens at not less than eight ounces per square inch pressure and not less than 0.05 ounces per square inch vacuum unless a different vacuum relief setting is required by safety or fire authorities, or
 - 2.5.3 A vent shut-off valve which is activated by connection of the vapor return hose.

SECTION 3 Standard for Gasoline Transfer

- 3.1 The owner or operator of an affected facility shall install, maintain, and operate the following devices on the storage tanks:
 - 3.1.1 Submerged fill pipe;
 - 3.1.2 If the gasoline storage tank is equipped with a separate gauge well, a gauge well drop tube shall be installed which extends to within six inches of the bottom of the tank;

- 3.1.3 Vent line restrictions on the affected facility; and
- 3.1.4 Vapor balance system and vapor tight connections on the liquid fill and vapor return hoses. The cross-sectional area of the vapor return hose and any other vapor return passages in the circuit connecting the vapor space in the service station tank to that of the truck tank must be at least 50% of the liquid fill hose cross-sectional area for each tank and free of flow restrictions to achieve acceptable recovery. The vapor balance equipment must be maintained according to the manufacturer's specifications. The type, size and design of the vapor balance system are subject to the approval of the District.
- 3.2 The owner or operator may elect to use an alternate control system provided it can be demonstrated to the District's satisfaction to achieve an equivalent control efficiency.
- 3.3 The owner or operator shall not allow delivery of fuel to the storage tanks until the vapor balance system is properly connected to the transport vehicle and the affected facility.
- 3.4 No person shall deliver gasoline to a service station without connecting the vapor return hose between the tank of the delivery truck and the storage tank receiving the product. The vapor balance system must be operating in accordance with the manufacturer's specifications.
- 3.5 Opening of a truck tank hatch for the purpose of visual inspection is permitted for a period not to exceed one minute and only after pumping from that compartment has stopped for at least three minutes prior to the opening. All truck tank hatches must be closed during pumping.
- 3.6 Except for above ground tank filling, all lines must be gravity drained in such a manner that upon disconnect no liquid spillage would be expected.
- 3.7 Above ground tanks shall be equipped with dry breaks with any liquid spillage upon the line disconnect not exceeding 10 ml.
- 3.8 Equipment subject to this section shall be operated and maintained with no defects and:
 - 3.8.1 All fill tubes shall be equipped with vapor-tight covers including gaskets,
 - 3.8.2 All dry breaks shall have vapor-tight seals and shall be equipped with vapor-tight covers or dust covers,
 - 3.8.3 All vapor return passages shall be operated so there can be no obstruction of vapor passage from the storage tank back to the delivery vehicle,
 - 3.8.4 All storage tank vapor return pipes and fill pipes without dry breaks shall be equipped with vapor-tight covers including gaskets, and
 - 3.8.5 All hoses, fittings, and couplings shall be in a vapor-tight condition.

SECTION 4 Permitting of Service Station Tank Construction or Reconstruction

When the owner or operator of a new service station causes or allows excavation to begin at the service station for the purpose of adding or replacing an underground gasoline storage tank or tanks, this event will constitute the commencement of reconstruction or construction of the affected facility. When an owner or operator of a new service station causes or allows a foundation to be built for the purpose of adding or replacing an above ground fixed gasoline storage tank or causes or allows a non-fixed gasoline storage tank to be brought to the service station for the purpose of transferring gasoline into vehicle fuel tanks, this event will constitute the commencement of reconstruction or construction of the affected facility. The owner or operator of the affected facility must submit a permit application and obtain a construction permit before commencing the construction or reconstruction project.

SECTION 5 Equipment Changes

When the owner or operator of a service station chooses to replace, add, or change any of the equipment required in section 3 including, but not limited to, vent line restrictions, drop tubes and submerged fill tubes, no later than ten days after installation the owner or operator shall notify the District in writing. This will not constitute a construction or reconstruction. This does not apply to routine replacement of gaskets.

SECTION 6 Compliance

Equipment at new service stations shall be in compliance with this regulation at startup. Compliance will be verified by inspections performed by District personnel. However, stations built before April 20, 1988 do not have to comply with sections 3.7 and 3.8 until October 20, 1988.

Adopted v1/6-13-79; effective 6-13-79; amended v2/11-16-83, v3/1-20-88, v4/4-20-88.

**REGULATION 7.18 Standards of Performance For New Solvent Metal Cleaning Equipment
REPEALED - Superseded by Regulation 6.18**

**Air Pollution Control District of Jefferson County
Jefferson County, Kentucky**

Relates to: KRS Chapter 77 Air Pollution Control

Pursuant to: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new solvent metal cleaning operations.

Adopted v1/6-13-79; effective 6-13-79; amended v2/11-16-83, v3/4-20-88, v4/5-15-91, v5/3-15-00; repealed 5-15-02.

REGULATION 7.20 Standard of Performance For New Gasoline Loading Facilities at Bulk Plants

**Air Pollution Control District of Jefferson County
Jefferson County, Kentucky**

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of volatile organic compound emissions from new gasoline loading facilities at bulk plants.

SECTION 1 Applicability

This regulation applies to each new affected facility which is commenced after the June 13, 1979.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Affected facility" means a bulk gasoline plant.
- 2.2 "Bottom fill system" means a system of filling transport vehicle tanks through an opening that is flush with the bottom of the transport vehicle tank.
- 2.3 "Bulk gasoline plant" means a facility for the storage and dispensing of gasoline that employs tank trucks, trailers, railroad cars, or other mobile non-marine vessels for both incoming and outgoing gasoline transfer operations.
- 2.4 "Gasoline" means any petroleum distillate having a Reid vapor pressure of 4.0 pounds per square inch or greater used as a fuel for internal combustion engines.
- 2.5 "Submerged fill tube system" means a fill tube the discharge of which is entirely submerged when the liquid level is six inches above the bottom of the transport vehicle tank.
- 2.6 "Transport vehicle" means tank trucks, trailers, railroad tank cars, or barges.
- 2.7 "Vapor balance system" means a combination of pipes or hoses which create a closed system between the vapor spaces of a unloading tank and a received tank such that vapors displaced from the receiving tank are transferred to the tank being unloaded.

SECTION 3 Standard for Volatile Organic Compounds

- 3.1 The owner or operator of an affected facility shall install, maintain, and operate:
 - 3.1.1 Stationary storage tank control devices according to Regulation 7.12 or 6.13.
 - 3.1.2 A vapor balance system for:
 - 3.1.2.1 Filling of stationary storage tanks from transport vehicle tanks and
 - 3.1.2.2 Filling of transport vehicle tanks from stationary storage tanks.
 - 3.1.3 For loading into transport vehicle tanks, either:
 - 3.1.3.1 A submerged fill tube system or
 - 3.1.3.2 A bottom fill system.
- 3.2 The vapor balance system shall be equipped with fittings which are vapor tight and will automatically close upon disconnection so as to prevent the release of organic material.

- 3.3 The cross-sectional area of the vapor return hose must be at least 50% of the cross-sectional area of the liquid fill line and free of flow restrictions.
- 3.4 The vapor balance system must be equipped with interlocking devices which prevent transfer of gasoline until the vapor return hose is connected.
- 3.5 Transport vehicle tank hatches shall be closed at all times during loading operations.
- 3.6 There shall be no leaks from the pressure/vacuum relief valves and hatch covers of the stationary storage tanks during loading.
- 3.7 The pressure relief valves on storage vessels and tank trucks or trailers shall be set to release at no less than 0.7 psig unless a lower setting is required by applicable fire codes.
- 3.8 The owner or operator shall not load gasoline into any transport vehicle or receive gasoline from any transport vehicle which does not have proper fittings for connection of the vapor balance system, nor shall the owner or operator load or receive gasoline unless the vapor balance system is properly connected and in good working order. Except as provided in section 3.9, the fittings on the transport vehicle tanks must be vapor tight and automatically close upon disconnection so as to prevent the release of organic material.
- 3.9 The following shall apply to the loading of a transport vehicle tank by means of a submerged fill tube system:
 - 3.9.1 When inserted into the tank, the submerged fill tube system must form a vapor tight seal with the tank; and
 - 3.9.2 Tank hatches are to be opened for the minimum time necessary to insert or remove the submerged fill tube system.
- 3.10 No owner or operator shall permit gasoline to be spilled, discarded in sewers, stored in open containers, or handled in any other manner that would result in evaporation.
- 3.11 On or after December 31, 1982, no owner or operator of an affected facility shall allow loading of a tank truck unless the following provisions are met:
 - 3.11.1 The tank truck has a valid Kentucky pressure-vacuum test ticker as required by Regulation 6.37 attached and visibly displayed ;
 - 3.11.2 The vapor balance system and associated equipment are designed and operated to prevent gauge pressure in the tank truck from exceeding 18 inches of water and prevent vacuum from exceeding six inches of water;
 - 3.11.3 A pressure tap or any equivalent system as approved by the District is installed on the vapor balance system so that a liquid manometer supplied by the District can be connected by an inspector to the tap in order to determine compliance with section 3.11.2. The pressure tap shall be installed by the owner or operator as close as possible to the connection with the delivery tank, and shall consist of a 1/4 inch tubing connector which is compatible with the use of 3/16 inch inside diameter plastic tubing; and
 - 3.11.4 During loading, there is no reading greater than or equal to 100% of the lower explosive limit (LEL, measured as propane) at a distance of 2.5 centimeters around the perimeter of a potential leak source associated with the vapor balance system of a bulk gasoline plant as detected by a combustible gas detector using the test procedure in section 5.

SECTION 4 Alternate Control System

The owner or operator may elect to use an alternate control system if it can be demonstrated to the District's satisfaction that the alternate system will achieve equivalent control efficiency.

SECTION 5 Compliance

- 5.1 A new affected facility shall comply with the requirements of this regulation on startup.
- 5.2 On or after December 31, 1982, the test procedure as defined in "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems" (OAQPS 1.2-119, EPA) Appendix B or an equivalent procedure approved by the District, shall be used to determine compliance with the standard prescribed in section 3.11 during inspections conducted pursuant to KRS 77.165 or KRS 224.10-100(10).

Adopted v1/7-14-76; effective 6-13-79; amended v2/11-16-83.

REGULATION 7.22 Standard of Performance for New Volatile Organic Materials Loading Facilities

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new volatile organic materials loading facilities.

SECTION 1 Applicability

This regulation applies to each loading facility which loads more than 200 gallons in any one day of volatile organic materials into tank trucks, trailers, or railroad tank cars commencing on or after the effective date of this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is six inches above the bottom of the tank or, when applied to a tank which is loaded from the side, shall mean every fill pipe the discharge opening of which is entirely submerged when the liquid level is two times the fill pipe diameter above the bottom of the tank.
- 2.2 "True vapor pressure" means the equilibrium partial pressure exerted by organic material as determined in accordance with methods specified by the District.
- 2.3 "Vapor recovery system" means a vapor gathering system capable of collecting 90% by weight of all hydrocarbon vapors and gases discharged and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.
- 2.4 "Volatile organic material" means any volatile organic compound which has a true vapor pressure of 78 mm Hg (1.5 psia) or greater under actual storage conditions.

SECTION 3 Control of Volatile Organic Materials

- 3.1 No owner or operator of any loading facility from which more than 200 gallons but less than 20,000 gallons of volatile organic materials are loaded in any one day shall load any volatile organic materials into any tank, truck, trailer, or railroad car from any loading facility unless such loading is accomplished by submerged fill, bottom loading, or equivalent methods approved by the District. Pneumatic, hydraulic or other mechanical means shall be provided to prevent liquid organic compounds drainage from the loading device when it is removed from the hatch, or to accomplish complete drainage before such removal.
- 3.2 No owner or operator of any loading facility from which 20,000 gallons or more of volatile organic materials are loaded in any one day shall load such materials unless such facility is

equipped with a device that reduces the emissions of all hydrocarbon vapors and gases by at least 90% by weight that is properly installed, in good working order, and in operation. Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor recovery system. Measures shall be taken to prevent liquid drainage from the loading device when it is not in use or to accomplish complete drainage before the loading device is disconnected.

SECTION 4 Exemptions

Gasoline loading facilities are exempt from this regulation. (See the specific gasoline loading regulation).

Adopted v1/7-14-76; effective 6-13-79, amended v2/3-17-93.

REGULATION 7.25 Standard of Performance for New Sources Using Volatile Organic Compounds

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions of volatile organic compounds from new sources.

SECTION 1 Applicability

This regulation applies to each affected facility not elsewhere regulated in Regulation 7 as to emissions of VOCs and which commenced after the effective date of this regulation. Sources previously under Regulation 7.24 are subject to this regulation.

- 1.1 Those portions of any series of affected facilities designed for processing a continuous web, strip, or wire which emit volatile organic compounds shall be taken collectively to determine compliance with this regulation.
- 1.2 Emissions of VOCs resulting from air or heated drying of products for the first 12 hours after their removal from an affected facility shall be included in determining compliance with this regulation.
- 1.3 Emissions of VOCs to the atmosphere from the cleanup with VOCs of any affected facility shall be included with other emissions of VOCs from that affected facility for determining compliance with this regulation.
- 1.4 This section shall not apply to the spraying or other use of insecticides, pesticides, or herbicides.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Affected facility" means any equipment, machine, and other device, or any combination of facilities at a source, which uses VOCs and which has the potential to emit greater than 5 tons of VOCs per year.
- 2.2 "Potential emissions" means the emissions that will result if the equipment, machine, or other device is operated 8,760 hours per year, unless limited by permit conditions, at maximum actual capacity and without any emissions controls or vapor recovery systems unless required by permit conditions.
- 2.3 "Volatile organic compound" (VOC) means any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions.
 - 2.3.1 This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity: Methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane (methyl chloroform);

1,1,1-trichloro-2,2,2-trifluoroethane (CFC-113); trichlorofluoromethane (CFC-11); dichlorodifluoro-methane (CFC-12); chlorodifluoro-methane (CFC-22); trifluoromethane (FC-23); 1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC-114); chloropentafluoroethane (CFC-115); 1,1,1-trifluoro 2,2-dichloroethane (HCFC-123); 1,1,1,2-tetrafluoro-ethane (HFC-134a); 1,1-dichloro 1-fluoroethane (HCFC-141b); 1-chloro 1,1-difluoroethane (HCFC-142b); 2-chloro 1,1,1,2-tertrafluoroethane (HCFC-124); pentafluoroethane (HFC-125); 1,1,2,2-tetra-fluoroethane (HFC-134); 1,1,1-trifluoroethane (HFC-143a); 1,1-difluoroethane (HFC-152a); and perfluorocarbon compounds which fall into these classes:

- 2.3.1.1 Cyclic, branched, or linear, completely fluorinated alkanes;
- 2.3.1.2 Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;
- 2.3.1.3 Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and
- 2.3.1.4 Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.
- 2.3.2 For purposes of determining compliance with emissions limits, VOC will be measured by the approved test methods in Regulation 1.04. Where such method also measures compounds with negligible photochemical reactivity, these negligibility-reactive compounds may be excluded as VOC if the amount of such compounds is accurately quantified, and such exclusion is approved by the District.
- 2.3.3 As a precondition to excluding these compounds as VOC or at any time thereafter, the District may require an owner or operator to provide monitoring or testing methods and results demonstrating to the satisfaction of the District, the amount of negligibly-reactive compounds in the source's emissions.

SECTION 3 Standard for Volatile Organic Compounds

- 3.1 No owner or operator shall construct or operate an affected facility unless it is equipped with and utilizes best available control technology (BACT) as determined at the time of the construction permit review by the District. Emission rates in terms of pounds of VOCs per hour and/or work practice, equipment specifications, and/or raw material specifications shall be set out as permit conditions on the construction and/or operating permits to insure compliance with this requirement.
- 3.2 Affected facilities permitted prior to December 16, 1987, that emit no more emissions than that permitted at such date shall be deemed to be in compliance.
- 3.3 The time period for compliance determinations shall not exceed 24 hours and may be less if limited by a permit restriction, but it shall not exceed the hours operated in a day. For previously permitted sources, the averaging time for compliance shall be 24 hours unless the source either operates less hours per day or a shorter time is specified in the permit.

SECTION 4 Monitoring and Reporting

- 4.1 Any person controlling the emission of VOCs pursuant to this regulation shall provide, properly install, calibrate, maintain in good working order and in operation, devices as specified in the permit to construct or the permit to operate, or as specified by the District, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control equipment.

4.2 Any person using VOC or any material containing VOCs shall supply the District, upon request and in the manner and form prescribed, written evidence of the chemical composition, physical properties, and amount consumed for each VOC used.

SECTION 5 Compliance

A new affected facility shall comply with the requirements of this regulation on startup.

Adopted v1/7-14-76; effective 6-13-79; amended v2/2-17-88, v3/3-17-93.

REGULATION 7.26 Standard of Performance for New Sanitary Landfills
REPEALED - Superseded by Regulation 7.02

Air Pollution Control District of Jefferson
County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new sanitary landfills.

Adopted v1/6-13-79; effective 6-13-79; repealed 4-15-98.

REGULATION 7.34 Standard of Performance for New Sulfite Pulp Mills

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of sulfur oxides emissions from new sulfite pulp mills.

SECTION 1 Applicability

This regulation applies to each affected facility that:

- 1.1 Is associated with a sulfite pulp mill,
- 1.2 Is not subject to another standard of performance within these regulations with respect to sulfur oxides, and
- 1.3 Commenced on or after April 19, 1972.

SECTION 2 Definitions

Terms used in this regulation shall have the meaning given them in Regulation 1.02.

SECTION 3 Standard for Sulfur Oxides Emissions

No person shall cause or permit sulfur oxides emissions from blow pits, washer vents, storage tanks, digester relief, recovery system, etc., to exceed 9.0 lbs per air dried ton of pulp produced.

Adopted v1/4-19-72; effective 4-19-72; amended v2/7-14-76 effective 9-1-76, v3/6-13-79.

REGULATION 7.35 Standard of Performance for New Ethylene Producing Plants

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new ethylene producing plants.

SECTION 1 Applicability

This regulation applies to each affected facility which means each waste gas stream of any ethylene producing plant commenced on or after April 19, 1972.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

SECTION 3 Standard for Hydrocarbons

No person shall emit into the atmosphere a waste gas stream from any ethylene producing plant unless the waste gas stream is subjected to 1,300 °F for 0.3 seconds or greater in a direct-flame afterburner or equally effective catalytic vapor incinerator. Either device must be equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

Adopted v1/7-14-76; effective 9-1-76; amended v2/6-13-79.

REGULATION 7.36 Standard of Performance for New Volatile Organic Compound Water Separators

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new water separators.

SECTION 1 Applicability

This regulation applies to each affected facility which means each oil-effluent water separator that recovers 200 gallons a day or more of any volatile organic compound from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 pounds or greater commenced on or after the effective date of this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Enclosed container" means a vessel which entirely encloses the content except for pressure relief vents.
- 2.2 "Floating roof" means a vessel cover consisting of double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and vessel wall.
- 2.3 "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is 6 inches above the bottom of the vessel; or when applied to a vessel which is loaded from the side, shall mean any fill pipe the discharge opening of which is entirely submerged when the liquid level is two times the fill pipe diameter above the tank.
- 2.4 "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from a vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.
- 2.5 "Volatile organic compound water separator" means any tank box, sump, or other container in which any VOC or product thereof, floating on or entrained or contained in water entering such tank, box, sump, or other container, is physically separated and removed from such water prior to outfall, drainage, or recovery of such water.

SECTION 3 Standard for Hydrocarbon

The emissions of all hydrocarbon vapors and gases shall be reduced 90% by weight. All gauging and sampling devices shall be gas tight except when gauging and/or sampling is in progress. Standards may be met by employing one or more of the following features: floating roof, submerged fill pipes, or a vapor recovery system.

SECTION 4 Compliance

An affected facility shall be in compliance on start up.

Adopted v1/4-19-72; effective 4-19-72; amended v2/7-14-76 effective 9/1/76, v3/6-13-79.

REGULATION 7.51 Standard of Performance for New Liquid Waste Incinerators

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new liquid waste incinerators.

SECTION 1 Applicability

This regulation applies to those facilities disposing of waste solvents, chemicals, and other materials by incineration after the effective date of this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Auxiliary fuel" means natural gas, propane, butane, distillate fuel oil or other fuel free of toxic compounds and containing not more than 0.5% incombustible particulate.
- 2.2 "Average gas temperature" is the mean temperature of the products of combustion while in the incinerator, averaged from the liquid waste burner temperature to the exit gas temperature, and prior to any spray chamber or air pollution control device.
- 2.3 "Combustible liquid waste" means any liquid waste with a heat content greater than 10,000 BTU/lb or capable of sustaining combustion in an incinerator without auxiliary fuel.
- 2.4 "Exit gas temperature" means the temperature of the products of combustion measured at the end of the incinerator and prior to any air pollution control device.
- 2.5 "Halogenated liquid wastes" are substances which contain any Halogen elements (bromine, chlorine, fluorine, iodine or astatine) in their chemical compositions.
- 2.6 "Liquid waste" means any material in a liquid form which has no commercial value other than recovery of its recyclable components or has been transferred to a facility for disposal.
- 2.7 "Liquid waste incinerator" is a device for incineration of liquid waste.
- 2.8 "Partially combustible liquid waste" means any liquid waste with a heat content greater than 5000 BTU/lb and less than 10,000 BTU/lb requiring auxiliary fuel for sustained combustion.
- 2.9 "Residence time" means the time required for the products of combustion to travel from the liquid waste burner to the exit of the incinerator or secondary combustion chamber while maintaining the average gas temperature associated with the residence time.

SECTION 3 Standard for Particulate Matter

No owner or operator subject to this regulation shall cause the emission of particulate matter from a liquid waste incinerator to exceed:

- 3.1 0.08 gr/dscf corrected to 7% O₂ excluding the contribution of CO₂ from auxiliary fuel, or
- 3.2 10% opacity.

SECTION 4 Standard for Volatile Organic Compounds

Any and all VOCs in a liquid waste must be destroyed to such an extent that no more than 0.01% is emitted to the atmosphere (as defined in 40 CFR Part 264 Subpart O).

SECTION 5 Standard for Toxic Air Pollutants

The provisions of Regulation 5.12 apply.

SECTION 6 Equipment Standards

- 6.1 Incineration of partially combustible liquids shall be accomplished in an incinerator equipped with means of firing sufficient auxiliary fuel to sustain combustion at temperatures as required by this regulation. No auxiliary fuel shall be required for incineration of combustible liquids unless otherwise required by the District.
- 6.2 Incineration of liquid wastes with a viscosity of 750 SSU or greater shall be accomplished in a burner equipped with steam or air atomization.
- 6.3 Incineration of halogenated liquid wastes shall be accomplished in an incinerator equipped with a wet scrubber or a device of equivalent control efficiency.
- 6.4 Incineration of liquid wastes containing inorganic salts shall be accomplished in an incinerator equipped with a particulate control device of sufficient efficiency to meet the emission standard in sections 3.1 and 3.2.
- 6.5 The incinerator shall be capable of maintaining an exit gas temperature of at least 1600 °F and a residence time of at least 1.5 seconds or such parameters as are determined by the District to provide complete combustion of the liquid waste.
- 6.6 The incinerator shall be equipped with a fail-safe device designed to interrupt the delivery of liquid waste to the burner in the event of:
 - 6.6.1 Fire or flame reaching the line delivering waste to the burner,
 - 6.6.2 Loss of burner flame,
 - 6.6.3 Venting due to malfunctions, or
 - 6.6.4 Excessive CO concentration as specified by the District after the performance test.
- 6.7 The delivery pipe to the liquid waste burner shall be equipped with a flow indicator capable of measuring the maximum demand of the burner and equipped with a continuous recorder.
- 6.8 The incinerator shall be equipped with an indicating pyrometer or thermometer to measure the exit gas temperature.

SECTION 7 Recordkeeping

The owner or operator of any liquid waste incinerator subject to this regulation shall record the following information and maintain the records for a two year period making the records available to the District upon request:

- 7.1 Daily operating hours of liquid waste incinerator;
- 7.2 Daily log of liquid waste received and specifying:
 - 7.2.1 The amount received,
 - 7.2.2 A general description of the waste,
 - 7.2.3 The source from whom the waste was received,
 - 7.2.4 A designation of whether or not the waste contains toxic materials as listed in Regulation 5.12 Appendix B, and

- 7.2.5 The quantity of waste fed as recorded per section 6.7;
- 7.3 The exit gas temperature indicator of section 6.8 shall be recorded on a continuous recorder with a total system accuracy of at least ± 25 °F;
- 7.4 The emission of carbon monoxide and oxygen in the exit exhaust gases shall be measured and recorded continuously in a manner consistent with Regulation 7.01 and 40 CFR Part 60 Appendix B;
- 7.5 Facilities that are permitted to burn 1,000 pounds per hour or more of liquid waste shall provide monitoring outputs for those parameters of sections 7.3 and 7.4 with necessary transmission facilities to feed this data directly into the District's computer upon District request and at the expense of the facilities; and
- 7.6 If a wet scrubber is to be used for acid gas emission control, then the pH of the scrubbing liquor must be maintained in the range of 6.5 to 7.5 at point of entry into the scrubber. A continuous monitoring device with recorder shall be used to maintain a record of the pH.

SECTION 8 Performance Tests

Performance tests are required of all affected facilities pursuant to the following:

- 8.1 Between 60 to 180 days after initial startup of the incinerator and at such other times as may be required by the District, the owner or operator of the incinerator shall conduct those performance tests specified by the District in accordance with Regulation 1.04 and furnish the District a written report of the results of such performance tests. These tests shall include tests for particulates, hydrogen chloride, and various metals as a minimum. Other pollutants may require testing upon notice from the District;
- 8.2 The performance tests shall be conducted under such conditions as the District shall specify to the facility operator based upon representative performance of the incinerator and the control equipment. The owner or operator shall make available to the District such records as may be necessary to determine the conditions of the performance tests;
- 8.3 The District shall be notified at least 30 days in advance of the projected starting date for any performance test; and
- 8.4 In addition, the District may require such tests as it thinks proper to determine compliance with this regulation.

Adopted v1/7-14-76; effective 6-13-79, amended v2/1-20-88.

REGULATION 7.52 Standard of Performance for New Fabric, Vinyl and Paper Surface Coating Operations

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new fabric, vinyl and paper surface coating operations.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after June 13, 1979. Any source that is ever subject to this regulation will always be subject to it unless the source changes its process to one not covered by this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line for fabric, vinyl, or paper.
- 2.2 "Applicator" means the mechanism or device used to apply the coating including, but not limited to, roll, knife, or rotogravure coater.
- 2.3 "Coating line" means a series of one or more coating applicators and any associated flashoff area, drying area, and/or oven wherein a coating is applied, dried, and/or cured. A coating line ends with the end of the drying or curing area or prior to the beginning of the application of the next coating. It is not necessary to have an oven or a flashoff area in order to be included in this definition. This shall include, but is not limited to:
 - 2.3.1 Mixing operations;
 - 2.3.2 Process storage;
 - 2.3.3 Applicators;
 - 2.3.4 Drying operation including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
 - 2.3.5 Clean up operations;
 - 2.3.6 Leaks, spills and disposal of VOCs;
 - 2.3.7 Processing and handling of recovered VOCs; and
 - 2.3.8 An affected facility which is capable of performing both paper coating and paper printing will be considered as performing a paper printing operation subject to Regulation 6.29.
- 2.4 "Fabric coating" means the coating of a textile substrate to impart properties that are not initially present, such as strength, stability, water or acid repellency, or appearance.
- 2.5 "Flashoff area" means the space between the applicator and the oven.
- 2.6 "Knife coating" means the application of a coating material to a substrate by means of drawing the substrate beneath a knife that spreads the coating evenly over the full width of the substrate.

- 2.7 "Paper coating" means the application of a uniform layer of material across the entire width of a web of paper, pressure sensitive tapes regardless of substrate, related web coating processes on plastic film such as typewriter ribbons, photographic film, magnetic tape, and decorative coatings on metal foil such as gift wrap and packaging, but does not include the printing of paper.
- 2.8 "Printing" means the formation of words, designs and pictures, usually by a series of application rolls each with only partial coverage. It applies to flexographic and rotogravure processes as applied to publication, specialty, and packaging printing as defined in Regulation 6.29.
- 2.9 "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds, or recovered volatile organic compounds; but does not mean storage tanks which are subject to Regulation 6.13 or 7.12.
- 2.10 "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.
- 2.11 "Rotogravure coating" means the application of a uniform layer of material across a substrate by means of a roll coating technique in which the entire coating roll is uniformly etched with recessed cells and no pattern or design is present. The coating material is picked up in these recessed cells and is transferred to the substrate.
- 2.12 "Vinyl coating" means the coating of vinyl coated fabric or vinyl sheets which includes decorative or protective topcoats or printing. Vinyl coating does not include the application of vinyl plastisol to fabric to form the substrate that is subsequently coated (VOC emissions from the application of plastisol are near zero).
- 2.13 "Volatile organic compounds net input" means the total amount of VOCs input to the affected facility minus the amount of VOCs that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining VOC net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3 Standard for Volatile Organic Compounds

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 15% by weight of the VOCs net input into the affected facility.

SECTION 4 Compliance

- 4.1 A new affected facility shall comply with the requirements of this regulation on start-up.
- 4.2 In all cases, the design of any control system is subject to approval by the District.
- 4.3 Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device. The control

system capture efficiency shall be measured according to the methods specified in Regulation 1.05.

- 4.4 With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under Section 5.
- 4.5 Whenever deemed necessary by the District, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 5.
- 4.5.1 EPA Method 24 shall be used to determine the VOC content of coatings.

SECTION 5 Exemptions

- 5.1 Any affected facility coating fabric or paper shall be exempt from the provisions of Section 3 if the VOC content of the coating is less than 0.35 kg/l of coating (2.9 lb/gal) excluding water and exempt solvents, delivered to the applicators associated with the coating line.
- 5.2 Any affected facility coating vinyl shall be exempt from the provisions of Section 3 if the VOC content of the coating is less than 0.45 kg/l of coating (3.8 lb/gal) excluding water and exempt solvents, delivered to the applicators associated with the coating line.
- 5.3 No owner or operator of a fabric or vinyl coating line subject to this section shall apply coating on any such line during any day whose daily-weighted average VOC content, calculated in accordance with the procedure specified in section 5.3.1, exceeds the emission limit in this section. Equivalency calculations must be done on a solids applied basis. Volatile organic compound emission reduction credit is not allowed when plastisols are used in emission averaging schemes involving vinyl printing and topcoating.
- 5.3.1 The daily weighted average VOC content, which means the VOC content of two or more coatings as applied on a coating line during any day and weighted according to the fraction of the total coating volume that each coating represents, shall be calculated using the following equation:

$$VOC_w = \sum_{i=1}^n \frac{V_i C_i}{VT}$$

where:

- VOC_w = The average VOC content of two or more coatings as applied each day on a coating line in units of kg VOC/l of coating (lb/gal), minus water and exempt solvents.
- V_i = The volume of each coating as applied each day on a coating line in units of liters (gallons) minus water and exempt solvents.
- C_i = The VOC content of each coating as applied each day on a coating line in units of kg VOC/l of coating (lb/gal) minus water and exempt solvents.
- VT = The total volume of all coatings as applied each day on a coating line in units of liters (gallons) minus water and exempt solvents.
- n = The number of different coatings as applied each day on a coating line.

SECTION 6 Recordkeeping

- 6.1 An owner or operator of a stationary source using adhesives, coatings, solvents, and/or

graphic arts materials and subject to this regulation shall maintain daily records of operations for the most recent two year period. The records shall be made available to the District, Cabinet, or EPA upon request. The records shall include, but not be limited to, the following:

- 6.1.1 The rule number applicable to the operation for which the records are being maintained;
- 6.1.2 The application method and substrate type (metal, plastic, paper, etc.);
- 6.1.3 The amount and type of adhesive, coatings, (including catalyst and reducer for multicomponent coatings), solvent, and/or exempt compounds;
- 6.1.4 The VOC content as applied in each adhesive, coating, solvent, and/or graphic arts material;
- 6.1.5 The date for each application of adhesive, coating, solvent, and/or graphic arts material;
- 6.1.6 The amount of surface preparation, clean-up, wash-up of solvent (including exempt compounds) used and the VOC content of each; and
- 6.1.7 Oven temperature, where applicable.
- 6.2 The VOC content shall be calculated using a percent solids basis (less water and exempt solvents) for adhesives, coating, and inks; using EPA Method 24.
- 6.3 When a source utilizes add-on controls to achieve compliance, documentation will be necessary to assure proper operation. Examples of some controls and related information are:
 - 6.3.1 Thermal incineration - combustion temperature, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, destruction or removal efficiency and manufacturer data;
 - 6.3.2 Catalytic incineration - exhaust gas temperature, change in temperature across catalyst bed, date of last change of catalyst bed, inlet and outlet VOC concentration from emission test, how and when these concentrations were determined, destruction or removal efficiency, and manufacturer data;
 - 6.3.3 Condenser - inlet temperature of cooling medium, outlet temperature of cooling medium, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, removal efficiency, and manufacturer data; and
 - 6.3.4 When a source utilizes add-on controls, compliance shall be determined by using EPA Method 25.

Adopted v1/5-20-82; effective 5-20-82; amended v2/4-21-82, v3/11-16-83, v4/4-20-88, v5/5-15-91.

REGULATION 7.55 Standard of Performance for New Insulation of Magnet Wire

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions of volatile organic compounds from magnetic wire coatings.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after the effective date of this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line for insulation of magnet wire.
- 2.2 "Applicator" means the mechanism or device used to apply the coating, including, but not limited to, a coating bath.
- 2.3 "Coating die" means the device, located between the applicator and the drying oven, that scrapes off excess coating and leaves a thin film of desired thickness.
- 2.4 "Coating line" means a series of equipment and/or operations used to apply, dry, or cure any coatings containing VOCs. This shall include, but is not limited to:
 - 2.4.1 mixing operations;
 - 2.4.2 process storage;
 - 2.4.3 applicators;
 - 2.4.4 drying operations including coating die area evaporation, oven drying, baking, curing, and polymerization;
 - 2.4.5 clean up operations;
 - 2.4.6 leaks, spills and disposal of VOCs; and
 - 2.4.7 processing and handling of recovered VOCs.
- 2.4.8 For the purposes of determining compliance with this regulation, if any equipment or operation could be considered to be a part of more than one coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOC it receives from or distributes to each coating line.
- 2.4.9 If any portion of the series of equipment and/or operations qualify for an exemption according to section 5, then that portion shall be considered to be a separate coating line.
- 2.5 "Magnet wire" means wire used in such equipment as electrical motors, generators, and transformers which carries an electrical current.
- 2.6 "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, VOCs, or recovered VOCs, but does not mean storage tanks which are subject to Regulation 7.12.

- 2.7 "Volatile organic compounds net input" means the total amount of VOCs input to the affected facility minus the amount of VOCs that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by the use of control devices shall not be subtracted from the total for the purposes of determining VOC net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3 Standard For Volatile Organic Compounds

No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than 10% by weight of the VOC net input into the affected facility.

SECTION 4 Compliance

- 4.1 In all cases, the design of any control system is subject to approval by the District.
- 4.2 Compliance with the standard in section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of the control system design, control device efficiency, control system capture efficiency and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.
- 4.3 With the prior approval of the District, the owner or operator may elect to effect such changes in the affected facility as are necessary to qualify for an exemption under section 5.
- 4.4 Whenever deemed necessary, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in section 5. The following methods of analyses for coatings shall be used as applicable except in those cases where the District determines that other methods would be more appropriate:
- 4.4.1 ASTM D 1644-75 Method A;
 - 4.4.2 ASTM D 1475-60(74);
 - 4.4.3 ASTM D 2369-73; or
 - 4.4.4 Federal Standard 141a, Method 4082.1.

SECTION 5 Exemptions

An affected facility shall be exempt from section 3 if the VOC content of the coating is less than 0.20 kilograms per liter of coating (1.7 pounds per gallon) excluding water, delivered to the applicators associated with the coating line.

Adopted v1/6-13-79; effective 6-13-79; amended v2/3-17-93.

REGULATION 7.56 Standard of Performance for Leaks from New Petroleum Refinery Equipment

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity And Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of leakage from equipment at new petroleum refineries.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after May 20, 1981.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

- 2.1 "Affected facility" means each individual component within a petroleum refinery complex that could potentially leak VOCs to the atmosphere.
- 2.2 "Component" means equipment or apparatus which includes, but is not limited to, pump seals, compressor seals, seal oil degassing vents, pipeline valves, flanges and other connections, pressure relief devices, process drains, and open-ended pipes that could potentially leak VOCs to the atmosphere.
- 2.3 "Gas service" means equipment that processes, transfers, or contains a VOC or mixture of VOCs in the gaseous phase.
- 2.4 "Leak" means the presence of a VOC concentration exceeding 10,000 ppm when tested in the manner in Section 5.
- 2.5 "Liquid service" means equipment that processes, transfers, or contains a VOC or VOC mixture in the liquid phase.
- 2.6 "Petroleum refinery complex" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.

SECTION 3 Standard for Volatile Organic Compounds

The owner or operator of an affected facility shall:

- 3.1 When any affected facility within the petroleum refinery complex is found to be leaking, repair the leak within 15 days. A component recheck shall be made after repair. If the leak is still present or a new leak is created by the repair, further maintenance shall be performed until the VOC emission drops below the screening value (10,000 ppm); and
- 3.2 Any time a valve is located at the end of a pipe or line containing VOCs, seal the end of the line with a second valve, a blind flange, a plug or a cap. This requirement does not apply to safety pressure relief valves.

SECTION 4 Monitoring and Reporting Requirements

The owner or operator of an affected facility shall conduct monitoring and submit records as specified below:

- 4.1 The refinery operator shall perform component monitoring using the method in Section 5 as follows:
 - 4.1.1 Monitor with a portable VOC detection device one time per year (annually) pump seals, pipeline valves in liquid service, and process drains;
 - 4.1.2 Monitor with a portable VOC detection device four times per year (quarterly) compressor seals, pipeline valves in gas service, and pressure relief valves in gas service;
 - 4.1.3 Monitor visually fifty-two times per year (weekly) pump seals; and
 - 4.1.4 No individual monitoring is necessary for pressure relief valves in liquid service and pipeline flanges.
- 4.2 Pipeline valves and pressure relief valves for gas service shall be marked or noted so that their location is readily obvious to both the refinery operator performing the monitoring and the District.
- 4.3 Whenever liquids are observed dripping from a pump seal, the seal shall be checked immediately with a portable detector to determine if a leak of VOCs is present.
- 4.4 Whenever a relief valve operates and venting to the atmosphere occurs, the operator shall monitor such valve immediately. Pressure relief devices which are tied in to either a flare header or vapor recovery device shall be exempted from the monitoring requirements.
- 4.5 When a leak is located, a weatherproof and readily visible tag bearing an identification number and the date the leak is located shall be affixed to the leaking component. The location, tag number, date and stream composition of the leak shall also be noted on a survey log. When the leak is repaired, the date of repair and date and instrument reading of component recheck after maintenance shall be entered in the survey log and the tag discarded. The operator shall retain the survey log for two years after the inspection is completed.
- 4.6 After quarterly monitoring has been performed, the refinery operator shall submit a report to the District listing all leaks that were located but not repaired within the 15 day limit and a signed statement attesting to the fact that all monitoring has been performed as stipulated in the control plan. Leaks that cannot be repaired within 15 days shall be repaired during the next scheduled turn-around, or if unable to be brought into compliance, a deviation shall be requested and obtained on an individual basis.

SECTION 5 Test Methods and Procedures

- 5.1 Except as provided in Regulation 1.04, the test methods as defined in "Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment" (OAQPS 1.2-111, EPA) Appendix B, shall be used to determine compliance with the standard in Section 3 and monitoring requirements in Section 4.
- 5.2 The owner or operator may elect to use alternate monitoring methods if it can be demonstrated to the District's satisfaction that the alternate methods will achieve equivalent control efficiency.

SECTION 6 Deviation and Modification

- 6.1 If, after at least two complete annual checks, the refinery operator determines that modifications of the monitoring requirements are in order, the operator may request in writing to the District that a revision be made. The submittal shall include data that have been

- developed to justify any modifications in the monitoring schedule.
- 6.2 If the District finds an excessive number of leaks during an inspection, or if the refinery operator found an excessive number of leaks in any given area during scheduled monitoring, the District shall increase the required frequency of operator inspections for that part of the facility.
 - 6.3 Deviation with the standards and limitations contained in this regulation, when supported by adequate technical information will be considered by the District on a case-by-case basis to allow for technological or economic circumstances which are unique to a source. An alternative program must be approved by EPA as a revision to the SIP.

SECTION 7 Additional Applicable Regulations

Any source subject to this regulation will also be subject to 40 CFR Part 60 Subpart GGG adopted by reference in Regulation 7.02.

Adopted v1/5-20-81; effective 5-20-81; amended v2/4-21-82, v3/4-20-88, v4/5-15-91.

**REGULATION 7.57 Standard of Performance for New Graphic Arts Facilities Using
Rotogravure and Flexography
REPEALED - Superseded by Regulation 6.29**

**Air Pollution Control District of Jefferson County
Jefferson County, Kentucky**

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of volatile organic compound emissions from new graphic arts facilities that use rotogravure or flexographic printing.

Adopted v1/5-20-8 1; effective 5-20-81; amended v2/4-21-82, v3/11-16-83, v4/2-19-86, v5/4-20-88, v6/5-15-91; repealed 9-26-02.

REGULATION 7.58 Standard of Performance for New Factory Surface Coating Operations of Flat Wood Paneling

**Air Pollution Control District of Jefferson County
Jefferson County, Kentucky**

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of surface coating emissions from new wood panel facilities.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after May 20, 1981. Any source that is ever subject to this regulation will always be subject to it unless the source changes its process to one not covered by this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line for the factory surface coating of interior flat wood paneling.
- 2.2 "Applicator" means the mechanism or device used to apply the coating including, but not limited to, roll coaters, curtain coaters, sprays and brushes.
- 2.3 "Class II hardboard paneling finishes" means finishes which meet the specifications of Voluntary Product Standard PS-59-73, filed by reference in 401 KAR 50:015, as approved by the American National Standards Institute.
- 2.4 "Classification date" means the effective date of this regulation.
- 2.5 "Coating line" means one or more coating applicators and any associated flashoff area, drying area, and/or oven wherein a coating is applied, dried, and/or cured. A coating line ends with the end of the drying or curing area prior to the beginning of the application of the next coating. It is not necessary to have an oven or a flashoff area in order to be included in this definition. This shall include, but is not limited to:
 - 2.5.1 Mixing operations;
 - 2.5.2 Process storage;
 - 2.5.3 Applicators;
 - 2.5.4 Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
 - 2.5.5 Clean up operations;
 - 2.5.6 Leaks, spills and disposal of VOCs; and
 - 2.5.7 Processing and handling of recovered VOCs.
- 2.6 "Flashoff area" means the space between the applicator and the oven.
- 2.7 "Hardboard" means a panel manufactured primarily from inter-felted lignocellulosic fibers which are consolidated under heat and pressure in a hot-press.

- 2.8 "Hardwood plywood" means the plywood surface layer is a veneer of hardwood.
- 2.9 "Interior flat wood paneling" means printed interior wall panels made of hardwood plywood and thin particle board, natural finish hardwood plywood panels, or hardboard paneling with Class II finishes.
- 2.10 "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.
- 2.11 "Particle board" means a manufactured board made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure. Thin particle board has a thickness of 1/4 inch or less.
- 2.12 "Printed panels" means panels whose grain or natural surface is obscured by fillers and basecoats upon which a simulated grain or decorative pattern is printed.
- 2.13 "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, volatile organic compounds; but does not mean storage tanks which are subject to Regulation 6.13 or 7.12.
- 2.14 "Volatile organic compounds net input" means the total amount of VOCs input to the affected facility minus the amount of VOCs that are not emitted into the atmosphere. Volatile organic compounds that are prevented from being emitted to the atmosphere by use of control devices shall not be subtracted from the total for the purposes of determining VOC net input. When the nature of any operation or design of equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

SECTION 3 Standard for Volatile Organic Compounds

No person shall cause, allow, or permit an affected facility to discharge into the atmospheres more than 15% by weight of the VOC net input into the affected facility.

SECTION 4 Compliance

- 4.1 In all cases, the design of any control system is subject to approval by the District.
- 4.2 Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device. The control system capture efficiency shall be measured according to methods specified in Regulation 1.05.
- 4.3 With the prior approval of the District, the owner or operator may elect to effect such changes in the facility as are necessary to qualify for an exemption under Section 5.
- 4.4 Whenever deemed necessary by the District, the District shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6.
 - 4.4.1 EPA Method 24 shall be used to determine the VOC content of coatings.

SECTION 5 Exemption

Any affected facility shall be exempt from Section 3 if the total VOC content of all the coatings applied to a specific area of finished paneling product is:

- 5.1 Less than 2.9 kg/100 sq m of VOCs of coated surface (6.0 lb/1000 sq ft) for printed interior wall panels made of hardwood plywood and thin particle board;
- 5.2 Less than 5.8 kg/100 sq m of VOCs of coated surface (12.0 lb/1000 sq ft) for natural finish hardwood plywood panels; or
- 5.3 Less than 4.8 kg/100 sq m of VOCs of coated surface (10.0 lb/1000 sq ft) for Class II finishes for hardboard paneling. Volatile organic compound content values are expressed in units of mass of VOC (kg,lb) per area of surface to which the coating is applied (100 m², 1000ft²), excluding water and exempt solvents.
- 5.4 No owner or operator of a flat wood paneling surface coating line subject to this section shall apply coating on any such line, during any day, whose daily-weighted average VOC content, calculated in accordance with section 5.4.1, exceeds the emission limit in this section. Equivalency calculations must be done on a solids applied basis.
 - 5.4.1 The daily weighted average VOC content, which means the VOC content of two or more coatings as applied on a coating line during any day and weighted according to the fraction of the total coating volume that each coating represents, shall be calculated using the following equation:

$$VOC_w = \sum_{i=1}^n \frac{V_i C_i}{VT}$$

where:

- VOC_w = The average VOC content of two or more coatings as applied each day on a coating line in units of kg VOC/l of coating (lb/gal) minus water and exempt solvents.
- V_i = The volume of each coating as applied each day on a coating line in units of liters (gallons) minus water and exempt solvents.
- C_i = The VOC content of each coating as applied each day on a coating line in units of kg VOC/l of coating (lb/gal) minus water and exempt solvents.
- VT = The total volume of all coatings as applied each day on a coating line in units of liters (gallons) minus water and exempt solvents.
- n = The number of different coatings as applied each day on a coating line.

SECTION 6 Recordkeeping

- 6.1 An owner or operator of a stationary source using coatings, solvents, and/or graphic arts materials and subject to this regulation shall maintain daily records of operations for the most recent two year period. The records shall be made available to the District, Cabinet, or EPA upon request. The records shall include, but not be limited to, the following:
 - 6.1.1 The rule number applicable to the operation for which the records are being maintained;
 - 6.1.2 The application method and substrate type (metal, plastic, etc.);

- 6.1.3 The amount and type of coatings, (including catalyst and reducer for multicomponent coatings), solvent, and/or exempt compounds;
- 6.1.4 The VOC content as applied in each coating, solvent, and/or graphic arts material;
- 6.1.5 The date for each application of coating, solvent, and/or graphic arts material;
- 6.1.6 The amount of surface preparation, clean-up, wash-up of solvent (including exempt compounds) used and the VOC content of each; and
- 6.1.7 Oven temperature, where applicable.
- 6.2 VOC content shall be calculated using a percent solids basis (less water and exempt solvents) for coating, and inks; using EPA Method 24.
- 6.3 When a source utilizes add-on controls to achieve compliance, documentation will be necessary to assure proper operation. Examples of some controls and related information are:
 - 6.3.1 Thermal incineration - combustion temperature, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, destruction or removal efficiency and manufacturer data;
 - 6.3.2 Catalytic incineration - exhaust gas temperature, change in temperature across catalyst bed, date of last change of catalyst bed, inlet and outlet VOC concentration from emission test, how and when these concentrations were determined, destruction or removal efficiency, and manufacturer data;
 - 6.3.3 Condenser - inlet temperature of cooling medium, outlet temperature of cooling medium, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, removal efficiency, and manufacturer data; and
 - 6.3.4 When a source utilizes add-on controls, compliance shall be determined by using EPA Method 25.

Adopted v1/5-20-81; effective 5-20-81; amended v2/4-20-82, v3/5-15-91.

REGULATION 7.59 Standard of Performance for New Miscellaneous Metal Parts and Products Surface Coating Operations

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of volatile organic compound emissions from new miscellaneous metal parts and products surface coating operations.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after May 20, 1981. Any affected facility that is ever subject to this regulation will always be subject to it unless the affected facility changes its process to one not covered by this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line located at job shops and original equipment manufacturing industries that applies coatings on a metal substrate not elsewhere subject to regulation in this chapter.
- 2.2 "Air-dried coatings" means a coating that is dried by the use of air or forced warm air at temperatures up to 90°C (194°F).
- 2.3 "Applicator" means the mechanism or device used to apply the coating, including, but not limited to, dipping, spraying, or flow-coating.
- 2.4 "Clear Coating" means a coating which either lacks color or opacity, or which is transparent and uses the surface to which it is applied as a reflectant base or undertone color.
- 2.5 "Coating line" means a series of one or more coating applicators and any associated flashoff area, drying area, or oven wherein a coating is applied and subsequently, dried, or cured. A coating line ends with the end of the drying or curing area or prior to the beginning of the application of the next coating. It is not necessary to have an oven or a flashoff area in order to be included in this definition. This shall include, but is not limited to:
 - 2.5.1 Mixing operations,
 - 2.5.2 Process storage,
 - 2.5.3 Applicators,
 - 2.5.4 Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization,
 - 2.5.5 Clean up operations,
 - 2.5.6 Leaks, spills, and disposal of VOCs, and
 - 2.5.7 Processing and handling of recovered VOCs.
- 2.6 "Extreme performance coating" means a coating that is designed to protect a coated part from outdoor or harsh exposure or extreme environmental conditions and that is applied to a part

that, in its use as a finished product, is intended to be subjected to outdoor or harsh exposure or extreme environmental conditions.

- 2.7 "Flashoff area" means the space between the applicator and the oven.
- 2.8 "Miscellaneous metal parts and products" means items including, but not limited to:
 - 2.8.1 Large farm machinery (harvesting, fertilizing, and planting machines, tractors, combines, etc.),
 - 2.8.2 Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.),
 - 2.8.3 Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.),
 - 2.8.4 Commercial machinery (computers and auxiliary equipment, typewriters, calculators, vending machines, etc.),
 - 2.8.5 Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.),
 - 2.8.6 Fabricated metal products (metal covered doors, frames, etc.), and
 - 2.8.7 Any other industrial category which coats metal parts or products under the Standard Industrial Classification Code of Major Group 33 (primary metal industries), Major Group 34 (fabricated metal products), Major Group 35 (nonelectric machinery), Major Group 36 (electrical machinery), Major Group 37 (transportation equipment), Major Group 38 (miscellaneous instruments), or Major Group 39 (miscellaneous manufacturing industries).
- 2.9 "Outdoor or harsh exposure or extreme environmental conditions" means exposure to any of the following: year round weather conditions, temperatures consistently above 95°C, detergents, scouring solvents, corrosive atmospheres, and similar environmental conditions.
- 2.10 "Prime coat" means the first of two or more films of coating applied in an operation.
- 2.11 "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers that contain surface coatings, volatile organic compounds, or recovered volatile organic compounds, but does not mean storage tanks that are subject to Regulation 6.13 or 7.12.
- 2.12 "Single coat" means only one film of coating is applied to the metal substrate.
- 2.13 "Topcoat" means the final film or series of films of coating applied in a two coat (or more) operation.

SECTION 3 Standards for Volatile Organic Compounds

- 3.1 A person shall not cause or allow the emission of VOC from any affected facility resulting from the coating of metallic surfaces in excess of the applicable emission rate as follows:
 - 3.1.1 0.52 kg of VOC/l (4.3 lb of VOC/gal) of coating, excluding water and exempt solvents, as applied for clear coatings,
 - 3.1.2 0.42 kg of VOC/l (3.5 lb of VOC/gal) of coating, excluding water and exempt solvents, as applied for air-dried coatings,
 - 3.1.3 0.42 kg of VOC/l (3.5 lb of VOC/gal) of coating, excluding water and exempt solvents, as applied for extreme performance coatings, or
 - 3.1.4 0.36 kg of VOC/l (3.0 lb of VOC/gal) of coating, excluding water and exempt solvents, as applied for all other coatings.
- 3.2 Compliance with the emission limits specified in section 3.1 shall be based upon the coatings used for the affected facility during a calendar-day averaging period. The District may

specifically authorize compliance to be based upon a longer averaging period that shall not exceed 1 calendar month.

3.3 If more than 1 limit of section 3.1 would be applicable for a specific coating, the least stringent limit shall apply.

3.4 Upon written request by the owner or operator of the affected facility, and approval by the District, the emission limits specified in section 3.1 may be achieved by an equivalent emission limit expressed in kg of VOC/l (lb of VOC/gal) of coating solids, as applied. The equivalent emission limit shall be established by the following equation:

$$A = \frac{E}{S}$$

where:

A = Allowable equivalent emission limit, in kg of VOC/l (lb of VOC/gal) of coating solids, as applied.

E = Applicable emission limit as specified in section 3.1, in kg of VOC/l (lb of VOC/gal) of coating, excluding water and exempt solvent, as applied.

S = Solids volume fraction representative of a compliance coating, in liter (gallon) of solids per liter (gallon) of coating, excluding water and exempt solvents, as applied. The value of "S" shall be determined by using one of the following equations:

$$S = 1 - \frac{E}{0.88} \quad \text{Where } E \text{ is in kg of VOC / l}$$

$$S = 1 - \frac{E}{7.36} \quad \text{Where } E \text{ is in lb of VOC / gal}$$

SECTION 4 Compliance

4.1 A new affected facility shall comply with the requirements of this regulation on startup.

4.2 In all cases, the design of any control system is subject to approval by the District.

4.3 Compliance with an emission limit in section 3.4 shall be demonstrated by a material balance except in those cases where the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based upon an engineering analysis by the District of the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device. The control system capture efficiency shall be measured according to methods specified in Regulation 1.05.

4.4 Whenever deemed necessary by the District, the District shall obtain samples of the coatings used at an affected facility to verify compliance with Section 3.

4.4.1 The method of analysis for coatings is EPA Method 24.

4.5 For each coating line that applies multiple coatings, all of which are subject to the same numerical emission limitation in section 3.1, during the same averaging period, e.g., all coatings used on the line are subject to 0.42 kg of VOC/l (3.5 lb of VOC/gal) of coating,

excluding water and exempt solvents, the daily weighted VOC content, calculated in accordance with the procedure in section 4.4.1, shall not exceed the coating VOC content limit corresponding to the category of coating used.

- 4.5.1 The averaging period weighted average VOC content, which means the VOC content of two or more coatings as applied on a coating line during any averaging period and weighted according to the fraction of the total coating volume that each coating represents, shall be calculated using the following equation:

$$VOC_w = \sum_{i=1}^n \frac{V_i C_i}{V T}$$

where:

- VOC_w = The average VOC content of two or more coatings as applied each averaging period on a coating line, in kg VOC/l (lb of VOC/gal) of coating, excluding water and exempt solvents.
- V_i = The volume of each coating as applied each averaging period on a coating line in units of liters (gallons), excluding water and exempt solvents.
- C_i = The VOC content of each coating as applied each averaging period on a coating line in units of kg of VOC/l (lb of VOC/gal) of coating, excluding water and exempt solvents.
- VT = The total volume of all coatings as applied each averaging period on a coating line in units of liters (gallons), excluding water and exempt solvents.
- n = The number of different coatings as applied each averaging period on a coating line.

SECTION 5 Exemptions

- 5.1 The surface coating of the following metal parts and products, or operations, are exempt from this regulation:
- 5.1.1 The exterior of airplanes and marine vessels, but not parts for the exterior of airplanes and marine vessels that are coated as a separate manufacturing or coating operation,
- 5.1.2 Automobile refinishing,
- 5.1.3 Customized top coating of automobiles and trucks if production is less than 35 vehicles per day,
- 5.1.4 Metallic surfaces that are subject to Regulation 6.16, 6.17, 6.19, 7.02, or 7.55, and
- 5.1.5 Parts consisting of both metallic and nonmetallic components, if a demonstration is made, to the satisfaction of the District, that the limits of this rule cannot be met due to the presence of the nonmetallic component. In this case, Regulation 7.25 applies to the coating of these parts.
- 5.2 Any affected facility shall be exempt from Section 3 if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to five tons per year (potential emissions prior to any add-on controls).

SECTION 6 Recordkeeping

- 6.1 An owner or operator of an affected facility subject to this regulation shall maintain records of operations for each averaging period for the most recent two-year period. The records shall be made available to the District upon request. The records shall include, but not be limited to, the following:
- 6.1.1 The regulation and section number applicable to the affected facility for which the records are being maintained,
 - 6.1.2 The application method and substrate type (metal, plastic, etc.),
 - 6.1.3 The amount and type of coatings (including catalyst and reducer for multicomponent coatings) and solvent (including exempt compounds) used at each point of application during the averaging period. The District may specifically authorize the usage record to reflect a period longer than the compliance averaging period, with the usage prorated for each compliance averaging period by a method approved by the District. In this case, the usage record period shall not exceed 1 calendar month,
 - 6.1.4 The VOC content as applied in each coating and solvent,
 - 6.1.5 The date, or usage record period, for each application of coating and solvent,
 - 6.1.6 The amount of surface preparation, clean-up, wash-up of solvent (including exempt compounds) used and the VOC content of each material used during the averaging period. The District may specifically authorize the usage record to reflect a period longer than the compliance averaging period, with the usage prorated for each compliance averaging period by a method approved by the District. In this case, the usage record period shall not exceed 1 calendar month, and
 - 6.1.7 Oven temperature, where applicable.
- 6.2 The VOC content shall be calculated using a percent solids basis (excluding water and exempt solvents) for coatings using EPA Method 24.
- 6.3 When an affected facility utilizes add-on controls to achieve compliance, documentation will be necessary to assure proper operation. Examples of some controls and related information are:
- 6.3.1 Thermal incineration: combustion temperature, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, destruction or removal efficiency, and manufacturer data,
 - 6.3.2 Catalytic incineration: exhaust gas temperature, change in temperature across catalyst bed, date of last change of catalyst bed, inlet and outlet VOC concentration from emission test, how and when these concentrations were determined, destruction or removal efficiency, and manufacturer data, and
 - 6.3.3 Condenser: inlet temperature of cooling medium, outlet temperature of cooling medium, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, removal efficiency, and manufacturer data.
- 6.4 When an affected facility utilizes add-on controls, compliance shall be determined by using EPA Method 25.

SECTION 7 Deviations

Deviations from the standards and limitations in this regulation, when supported by adequate technical information, will be considered by the District on a case-by-case basis to allow for technological or economic circumstances that are unique to an affected facility. However, these deviations will require federal approval pursuant to Regulation 1.08.

Adopted v1/5-20-81; effective 5-20-81; amended v2/4-21-82, v3/2-19-86, v4/5-15-91, v5/4-23-96.

REGULATION 7.60 Standard of Performance for New Synthesized Pharmaceutical Product Manufacturing Operations

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new pharmaceutical manufacturing operations.

SECTION 1 Applicability

This regulation applies to each affected facility commenced on or after May 20, 1981. Any source that is ever subject to this regulation will always be subject to it unless the source changes its process to one not covered by this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given to them in Regulation 1.02.

- 2.1 "Affected facility" means all sources of VOC at any pharmaceutical manufacturing facility, including vents from reactors, distillation units, fryers, storage of VOC, transfer of VOC, extraction equipment, filters, crystallizers, and centrifuges that emit 6.8 kilograms (15 pounds) of VOC per day or more as determined by the CTG of Pharmaceutical Manufacture (EPA-450/2-78-029) Appendix B.
- 2.2 "Production equipment exhaust system" means a device for collecting and directing out of the work area VOC fugitive emissions from reactor openings, centrifuge openings, and other vessel openings for the purpose of protecting workers from excessive VOC exposure.
- 2.3 "Reactor" means a vat or vessel, which may be jacketed to permit temperature control, designed to contain chemical reactions.
- 2.4 "Separation operation" means a process that separates a mixture of compounds and solvents into two or more components. Specific mechanisms include extraction, centrifugation, filtration, and crystallization.
- 2.5 "Synthesized pharmaceutical manufacturing" means manufacture of pharmaceutical products and intermediates by chemical synthesis. The production and recovery of materials produced via fermentation, extraction of organic chemicals from vegetable materials or animal tissues, and formulation and packaging of the product is not covered by this regulation.

SECTION 3 Standard for Volatile Organic Compounds

The owner or operator of an affected facility shall install, maintain and operate the control equipment and observe at all times the following operating requirements:

- 3.1.1 Each vent from reactors, distillation operations, crystalizers, centrifuges, and vacuum dryers that emit 6.8 kg/day (15 lb/day) or more of VOCs shall be equipped with surface

- condensers or other methods of control which provide emission reductions equivalent to the use of surface condensers which meet the requirements in section 3.1.2.
- 3.1.2 If surface condensers are used, the condenser outlet gas temperature shall not exceed the following temperatures (degrees Celsius) when condensing VOCs with the respective minimum vapor pressures (kilopascals). All vapor pressures are referenced to 20 °C:
- 3.1.2.1 Negative 25 °C; 40 kPa (5.8 psi);
 - 3.1.2.2 Negative 15 °C; 20 kPa (2.9 psi);
 - 3.1.2.3 0 °C; 10 kPa (1.5 psi);
 - 3.1.2.4 10 °C; 7 kPa (1.0 psi); and,
 - 3.1.2.5 25 °C; 3.5 kPa (0.5 psi).
- 3.2.1 For air dryers and production equipment exhaust systems that emit 150 kg/day (330 lb/day) or more of VOCs, emissions shall be reduced by 90%.
- 3.2.2 For air dryers and production equipment exhaust systems that emit less than 150 kg/day (330 lb/day), emissions shall be reduced to 15 kg/day (33 lb/day).
- 3.3.1 For storage tanks storing VOCs with a vapor pressure greater than 28 kPa (4.21 psi) at 20 °C, one liter of displaced vapor shall be allowed to be released to the atmosphere for every 10 liters transferred (i.e., a 90% effective vapor balance or equivalent) or truck/rail car delivery to all tanks greater than 7,500 liters (2,000 gal) capacity except where tanks are equipped with floating roofs, vapor recovery systems, or their equivalent. This requirement does not apply to transfer of VOCs from one in-plant location to another.
- 3.3.2 For tanks storing VOCs with a vapor pressure greater than 10 kPa (1.5 psi) at 20 °C, pressure/vacuum conservation vents shall be set at plus or minus 0.2 kPa, except where more effective air pollution control equipment is used.
- 3.4 All centrifuges containing VOCs, rotary vacuum filters processing liquid containing VOCs and any other filters having an exposed liquid surface where the liquid contains VOCs shall be enclosed. This applies to liquids exerting a total VOC vapor pressure of 3.5 kPa (0.5 psi) or more at 20 °C.
- 3.5 All in-process tanks containing VOC at any time shall have covers which shall be closed except for short periods when production, sampling, maintenance, or inspection procedures require operator access.
- 3.6 For liquids containing VOCs, all leaks in which liquid can be observed to be running or dripping from vessels and equipment (for example, pumps, valves, flanges) shall be repaired within 15 days. A visual recheck shall be made after repair. If the leak is still present or a new leak is created by the repair, further maintenance shall be performed until the VOC emission drops below the screening value (observed to be running or dripping). Leaks that cannot be repaired within 15 days shall be repaired during the next scheduled turnaround, or if unable to be brought into compliance a deviation shall be requested and obtained on an individual basis. Leak detection/ maintenance and repair procedures shall include maintaining a log identifying when the leak occurred and reporting every 90 days those leaks not repaired after 15 days. The operator shall retain the survey log for two years after the inspection is completed.

SECTION 4 Compliance Procedures

- 4.1 A new affected facility shall comply with this regulation on startup.

- 4.2 Compliance will be determined based upon an engineering analysis by the District of the control system design, control device efficiency, control system capture efficiency, and any other factors that could influence the performance of the system. If so requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control device.

SECTION 5 Monitoring Requirements

When absorbers, condensers, incinerators, or scrubbers are used to achieve compliance with Section 3, the following monitoring devices shall be an integral part of the control device:

- 5.1 For carbon absorbers, a monitoring device connected to an alarm device which indicates carbon bed breakthrough;
- 5.2 For condensers, a temperature sensing device located in the exit gas stream;
- 5.3 For incinerators, temperature sensing devices located in the combustion chamber for thermal incinerators and in the catalyst pre-heat chamber for catalytic incinerators; and
- 5.4 For scrubbers, flow meters for measuring flow rate of scrubbing medium or pressure drop measuring devices indicating back pressure and pressure drop across the scrubber.

Adopted v1/5-20-81; effective 5-20-81; amended v2/4-21-82, v3/4-20-88, v4/5-15-91.

REGULATION 7.76 Standards of Performance for New Municipal Solid Waste Incinerators

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS 77 Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new municipal solid waste incinerators.

SECTION 1 Applicability

- 1.1 This regulation applies to each affected facility, which means each municipal solid waste incinerator (MSWI) unit for which construction, modification, or reconstruction commenced on or after the effective date of this regulation. Refuse-derived fuel (RDF) co-fired incinerators which combust less than or equal to 20% RDF shall be exempt from this regulation. Incinerators which combine and combust Municipal Solid waste and medical waste shall be subject to District Regulation 6.41 or 7.78.
- 1.2 Owners or operators of MSWI plants with a capacity of 500 pounds per hour or less shall be exempt from sections 3 and 7. However, these facilities shall comply with the following requirements:
 - 1.2.1 Emission discharged into the atmosphere shall not exhibit greater than 10% opacity. EPA Method 9 shall be used to determine compliance with the opacity standard; and
 - 1.2.2 Regulations 3.04 and 5.12.
- 1.3 Emission limitations or control requirements imposed by any other regulation of the District or the Kentucky Division of Waste Management may impose more stringent requirements than those imposed by this regulation. The more stringent requirements shall govern.
- 1.4 No owner or operator of an affected facility subject to 401 KAR 47:030 shall construct or operate the affected facility in a manner that will violate the requirements of the State regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Affected facility" means each municipal solid waste incinerator unit for which construction, modification, or reconstruction commenced on or after the effective date of this regulation.
- 2.2 "Acid gases" means sulfur dioxide and hydrogen chlorine gases emitted from units.
- 2.3 "Afterburner" means an auxiliary burner for destroying unburned or partially burned combustion gases after they have passed from the combustion chamber.
- 2.4 "ASME" means the American Society of Mechanical Engineers.
- 2.5 "Biologicals" means a biological product used in prevention or treatment of disease.
- 2.6 "Bubbling fluidized bed incinerator" means a fluidized bed incinerator in which the majority of the bed material remains in the primary combustion zone.

- 2.7 "Burnout" means the percent of matter completely burned in the primary chamber of an affected facility.
- 2.8 "Chief facility operator" means the person in direct charge and control of the operation of an affected facility and who is responsible for daily on-site supervision, technical direction, management, and overall performance of the facility.
- 2.9 "Circulating fluidized bed incinerator" means a fluidized bed incinerator in which the majority of the bed material is carried out of the primary combustion zone and is transported back to the primary zone through a recirculation loop.
- 2.10 "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding household and industrial wastes. Commercial solid waste includes waste from medical facilities, schools, and other institutions that is not medical waste.
- 2.11 "Contained landfill" has the meaning given it in 401 KAR 30:010.
- 2.12 "Continuous emission monitoring system" (CEMS) means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.
- 2.13 "Daily average" means the average of all hourly emission rates when the affected facility is operating and firing municipal solid waste, measured over a 24 hour period between 12:00 midnight and the following midnight.
- 2.14 "Dioxin or furans" means total tetra- through octa- chlorinated dibenzo-p-dioxins and tetra-through octa-chlorinated dibenzofurans.
- 2.15 "Ferrous metals" means metals and alloys containing iron. Ferrous metals include, but are not limited to, pieces of scrap metal and household appliances made of iron containing metals, including stoves, refrigerators, air conditioners, and other appliances. Ferrous metals shall not include whole automobiles or other vehicles or vehicle bodies.
- 2.16 "Field-erected" means assembled from components at a final site of operations.
- 2.17 "Four hour block average" means the average of all hourly emission rates when the affected facility is operating and combusting municipal solid waste measured over four hour periods of from 12:00 midnight to 4:00 a.m., 4:00 a.m. to 8:00 a.m., 8:00 a.m. to 12:00 noon, 12:00 noon to 4:00 p.m., 4:00 p.m. to 8:00 p.m., and 8:00 p.m. to 12:00 midnight.
- 2.18 "Hazardous waste" means any discarded material or material intended to be discarded or substance or combination of such substances intended to be discarded, in any form which because of its quantity, concentration or physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.
- 2.19 "Household battery" means a dry cell battery.
- 2.20 "Household solid waste" means solid waste, including garbage and trash generated by single and multiple family residences, hotels, motels, bunkhouses, ranger stations, crew quarters, and recreational areas such as picnic areas, parks, and campgrounds.
- 2.21 "Industrial waste" means a liquid, gaseous, or solid waste substance resulting from a process of industry, manufacture, trade, or business, or from the development, processing, or recovery of a natural resource.
- 2.22 "Large MSWI plant" means a MSWI plant with a MSWI plant capacity greater than 225 megagrams (250 tons) per day of municipal waste.

- 2.23 "Mass burn refractory incinerator" means an incinerator that combusts waste in a refractory wall furnace.
- 2.24 "Mass burn rotary waterwall incinerator" means an incinerator that combusts waste in a cylindrical rotary waterwall furnace.
- 2.25 "Mass burn waterwall incinerator" means an incinerator that combusts waste in a conventional waterwall furnace.
- 2.26 "Maximum MSWI unit load" means the maximum one hour MSWI load achieved when compliance with all applicable regulations is demonstrated or during a subsequent test demonstrating compliance with a higher unit load.
- 2.27 "Medical waste" means:
- 2.27.1 Cultures and stocks of infectious agents, including specimen cultures collected from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, waste from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, and mix cultures;
- 2.27.2 Waste human blood and blood products such as serum, plasma, and other blood components;
- 2.27.3 Pathological wastes, such as tissues, organs, body parts, and body fluids that are removed during surgery and autopsy;
- 2.27.4 All discarded sharps including, but not limited to, hypodermic needles, syringes, Pasteur pipettes, broken glass, scalpels, scalpel blades, glass vials, etc., used in patient care, autopsy, embalming, or which have come into contact with infectious agents during use in medical, research, or industrial laboratories;
- 2.27.5 Carcasses and body parts of animals that were exposed to pathogens in research, in production of biologicals, or in the in vivo testing of pharmaceuticals; and
- 2.27.6 Other wastes as may be designated by a permit issued by the District.
- 2.28 "Metals" means condensible metals emitted from units. For the purpose of this regulation, particulate matter shall serve as a surrogate for the measurement and controls of metals.
- 2.29 "Modular excess air incinerator" means an incinerator that combusts waste and that is not field-erected and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.
- 2.30 "Modular starved air incinerator" means an incinerator that combusts waste and that is not field erected and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.
- 2.31 "Municipal solid waste" or "MSW" means household solid waste and commercial solid waste. Medical waste shall not be considered to be MSW and is regulated by Regulation 6.41 or 7.78.
- 2.32 "Municipal solid waste incinerator" (MSWI) or "municipal solid waste incinerator unit" (MSWI unit) means a device that combusts material which, if included in the waste stream, would be municipal waste. This includes, but is not limited to, field erected incinerators, (with or without heat recovery), modular incinerators (starved air or excess air), boilers, (i.e., steam generating units), and furnaces (whether suspension-fired, grate fired, mass-fired, or fluidized bed-fired).

- 2.33 "Multiple-chamber incinerator" means an incinerator consisting of at least two refractory lined combustion chambers (primary and secondary) in series, physically separated by refractory walls, and interconnected by gas passage ports or ducts.
- 2.34 "Normal" means a volumetric measurement at 32 °F and one atmosphere.
- 2.35 "Organics" means organic compounds emitted from units and includes dioxins or furans. For the purpose of this regulation, dioxin or furan shall serve as a surrogate for the measurement and control of organics.
- 2.36 "Particulate matter" means total particulate matter emitted from affected facilities.
- 2.37 "Particulate matter carryover" means particulate matter which is passed from the primary chamber of an incinerator into the flue gas stream.
- 2.38 "Plant" means one or more units at the same location for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation.
- 2.39 "Plant capacity" means the aggregate unit capacity of all units at a plant for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation.
- 2.40 "Processed municipal solid waste or refuse-derived fuel" or "processed MSW or RDF" means MSW or RDF that has been processed to separate materials for recovery prior to combustion in a MSWI unit. MSW or RDF is considered to be processed MSW or RDF if an overall 40% or greater reduction by weight (annual average) of MSW is achieved through separation of recoverable materials. A maximum of 15% reduction by weight of overall MSW shall be attributed to separation of yard waste. The 40% or greater overall reduction requirement may be achieved by on-site mechanical separation, on-site manual separation, off-site mechanical separation, off-site manual separation, or a curb side source reduction or a materials separation (recycling) program, or a combination thereof.
- 2.41 "Recoverable materials" means paper, paperboard, ferrous metals, nonferrous metals, glass, plastics, household batteries, and yard waste.
- 2.42 "Refuse-derived fuel" or "RDF" means a type of MSW produced by processing MSW through shredding and size classification. This includes all classes of RDF including low density fluff RDF through densified RDF fuel pellets.
- 2.43 "Refuse-derived fuel co-fired incinerator" or "RDF co-fired incinerator" means an incinerator that is designed to fire refuse-derived fuel simultaneously with other fuels.
- 2.44 "RDF spreader stoker" means a steam generating unit that combusts RDF in a semi-suspension firing mode using air-fed distributors.
- 2.45 "Same location" means the same or contiguous property that is under common ownership or control, including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or a combination thereof, including a municipality or other governmental unit, or a quasi-governmental authority (e.g., a public utility district or waste management district).
- 2.46 "Shift supervisor" means the person in direct charge and control of the operation of an affected facility who is responsible for on-site supervision, technical direction, management, and overall performance of the affected facility during an assigned shift.
- 2.47 "Small MSWI plant" means a MSWI plant with a MSWI plant capacity of greater than 500 pounds per hour but less than or equal to 225 megagrams per day (250 tons per day) of municipal solid waste.

- 2.48 "Solid waste" means any garbage, refuse, sludge and other discarded material, including solid, liquid, semi-solid or contained gaseous material resulting from industrial, commercial, mining (excluding coal mining waste, coal mining by-products, refuse and overburden), agricultural operations, and from community activities, but does not include those materials, including, but not limited to, sand, soil, rock, gravel, or bridge debris extracted as a part of a public road construction project funded wholly or in part with state funds, recovered material, special waste as designated by KRS 224.50-760, solid or dissolved material in domestic sewage, manure, crops, crop residue, or a combination thereof which is placed on the soil for return to the soil as fertilizers or soil conditioners, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under the Federal Water Pollution Control Act (86 Stat. 880) Section 402 or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954 (68 Stat. 923).
- 2.49 "Standard" means a volumetric measurement at 68 °F and one atmosphere.
- 2.50 "Uncontrolled hydrogen chloride emission rate" means the HCl emission rate that would occur from the combustion of MSW in the absence of HCl emissions control.
- 2.51 "Uncontrolled sulfur dioxide emission rate" means the SO₂ emission rate that would occur from the combustion of MSW in the absence of SO₂ emissions control.
- 2.52 "Unit" means an affected facility including, but not limited to, field erected incinerators (with or without heat recovery), modular incinerators (starved air or excess air), boilers (i.e., steam generating units), and furnaces (whether suspension-fired, grate-fired, mass-fired, or fluidized bed-fired).
- 2.53 "Unit capacity" means the maximum designed charging rate of the waste for an individual unit.
- 2.54 "Unit load" means the volume of steam produced, expressed in kilograms per hour (pounds per hour) of steam.
- 2.55 "Unprocessed MSW or RDF" means MSW or RDF that has not been processed to separate materials for recovery prior to combustion or for which less than 40% reduction by weight (annual average) of MSW is achieved as specified under processed MSW or RDF.
- 2.56 "Vehicle battery" means a wet lead-acid battery.
- 2.57 "Yard waste" means vegetative matter removed as a result of outdoor maintenance practices from residential and commercial yards, municipal parks, gardens, golf courses, and other similar areas, and includes, but is not limited to, grass trimmings, tree branches, straw, and leaves.

SECTION 3 Emission Standards

- 3.1 Standards for Metals. On or after the date on which the initial performance test is completed or required to be completed by section 6, no owner or operator of an affected facility shall cause or allow to be discharged into the atmosphere from the affected facility:
- 3.1.1 Particulate matter in excess of 34 milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot) of exhaust gas, corrected to 7% O₂ (dry basis); and
- 3.1.2 Visible air contaminants in excess of 10% opacity.
- 3.2 Standards for Organics. On or after the date on which the initial performance test is completed or required to be completed by section 6, no owner or operator of an affected facility:

- 3.2.1 Located within a small MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions that contain dioxin or furan emissions that exceed 75 nanograms per normal cubic meter (30 grains (parts) per billion standard cubic feet), corrected to 7% O₂ (dry basis); or
- 3.2.2 Located within a large MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility emissions that contain dioxin or furan emissions that exceed 30 nanograms per normal cubic meter (13.11 grains (parts) per billion standard cubic feet), corrected to 7% O₂ (dry basis).
- 3.3 Standards for Acid Gases.
 - 3.3.1 Small MSWI plant. On or after the date on which the initial performance test is completed or required to be completed by section 6, no owner or operator of an affected facility located within a small MSWI plant shall cause or allow to be discharged into the atmosphere from that effected facility, emissions that contain:
 - 3.3.1.1 HCl emissions in excess of 20% of the uncontrolled HCl emission rate (80% reduction by weight) on an hourly basis or 25 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent; or
 - 3.3.1.2 SO₂ emissions in excess of 50% of the uncontrolled S₂O emission rate (50% reduction by weight) on an hourly basis or 30 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent; and
 - 3.3.2 Large MSWI plant. On or after the date on which the initial performance test is completed or required to be completed by section 6, no owner or operator of an affected facility located within a large MSWI plant shall cause or allow to be discharged into the atmosphere from that affected facility, emissions that contain:
 - 3.3.2.1 HCl emissions in excess of 5% of the uncontrolled HCl emission rate (95% reduction by weight) on an hourly basis or 25 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent; and
 - 3.3.2.2 SO₂ emissions in excess of 15% of the uncontrolled S₂O emission rate (85% reduction by weight) on an hourly basis or 30 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent.
- 3.4 Standard for Nitrogen Oxides. On or after the date on which the initial performance test is completed or required to be completed by section 6, no owner or operator of an affected facility located within a large MSWI plant shall cause or allow to be discharged into the atmosphere from that facility, emissions that contain nitrogen oxides in excess of 120 parts per million by volume, corrected to 7% O₂ (dry basis).
- 3.5 Standard for Carbon Monoxide. On or after the date on which the initial performance test is completed or required to be completed by section 6, no owner or operator of an affected facility shall cause or allow the facility to exceed the CO standard for MSWI technology:
 - 3.5.1 Mass burn waterwall 100 ppmv
 - 3.5.2 Mass burn refractory 100 ppmv
 - 3.5.3 Mass burn rotary waterwall 150 ppmv
 - 3.5.4 Modular starved air 50 ppmv
 - 3.5.5 Modular excess air 50 ppmv
 - 3.5.6 Refuse-derived fuel spreader stoker 150 ppmv
 - 3.5.7 Bubbling fluidized bed incinerator 100 ppmv

3.5.8	Circulating fluidized bed incinerator	100 ppmv
3.5.9	RDF co-fired incinerator	150 ppmv
3.5.10	Other technologies	150 ppmv

Carbon monoxide emissions shall be measured at the incinerator outlet in conjunction with a measurement of oxygen concentration, corrected to 7% O₂ (dry basis) using a four hour block average.

SECTION 4 Standards for Operating Practices

- 4.1 No owner or operator of an affected facility that generates steam shall cause the facility to operate at a load level greater than 100% of the maximum MSWI unit load. An owner or operator of an affected facility who wishes to operate at a load greater than the maximum MSWI unit load may do so by conducting all applicable compliance tests to establish a higher maximum MSWI unit load.
- 4.2 No owner or operator of an affected facility shall burn MSW except in a multiple-chamber incinerator with a solid hearth, or in a device found to be equally effective for the purpose of air contaminant control as determined by the District.
- 4.3 Temperature and residence time requirements for affected facilities equipped with a secondary chamber while the affected facility is combusting MSW are as follows:
 - 4.3.1 The incinerator secondary chamber shall be maintained at a temperature of 982 ± 93 °C (1800 ± 200 °F);
 - 4.3.2 The minimum secondary chamber residence time shall be 1.0 seconds; and
 - 4.3.3 The incinerator shall have interlocks or other process control devices to prevent operation of the incinerator until the conditions in sections 4.3.1, 4.3.2 and 4.4 are assured.
- 4.4 No owner or operator of an affected facility other than a facility using a wet scrubber as a particulate matter control device shall allow the temperature of the flue gases entering the particulate matter control device inlet to exceed 149 °C (300 °F) while the affected facility is combusting MSW.
- 4.5 Except as provided in section 4.8, on or after the date of the initial start-up, no owner or operator of an affected facility shall cause or allow unprocessed MSW or RDF to be combusted in this facility.
- 4.6 No owner or operator of an affected facility shall cause or allow yard waste or vehicle batteries to be combusted in the facility.
- 4.7 Prior to initial start-up, the owner or operator of an affected facility shall establish a program which has been approved by the District to remove household batteries from MSW prior to combustion. On or after the date of initial start-up, the owner or operator shall comply with the approved plan for removing household batteries from MSW.
- 4.8 401 KAR 59:021 section 8 Standards for MSWI Operating Practices does not apply to affected facilities in Jefferson County, Kentucky.
- 4.9 Owners or operators of affected facilities shall cause ash from affected facilities to be tested to determine the toxicity of the ash using tests required in 401 KAR Chapter 31. Ash which is determined to be hazardous waste shall be disposed of according to the regulations of the Kentucky Division of Waste Management. Ash which is determined to not be hazardous waste shall be disposed of in a landfill permitted by the Kentucky Division of Waste Management.

- 4.10 Owners or operators of affected facilities that receive MSW from generators that are noncontiguous to the incineration site shall comply with the operating requirements for contained landfills; i.e., shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous waste as defined in 401 KAR Chapter 31 and polychlorinated biphenyls (PCBs) as defined in 40 CFR Section 761. This program shall include at a minimum:
- 4.10.1 Random inspections of incoming waste;
 - 4.10.2 Inspection of suspicious waste;
 - 4.10.3 Records of inspections;
 - 4.10.4 Training of facility personnel to recognize regulated hazardous waste;
 - 4.10.5 Procedures for notifying the proper authorities and the District if a regulated hazardous waste is discovered at the facility; and isolation of same from waste stream;
 - 4.10.6 Employee safety, health, training and equipment to be used in inspections; and
 - 4.10.7 The owner or operator shall have a program approved by the Kentucky Division of Waste Management, to inspect all waste entering the source for combustion. This program to exclude hazardous waste shall include:
 - 4.10.7.1 Random inspections in time, but uniformly distributed to all contributing waste sources based on volume received from each;
 - 4.10.7.2 Identification data concerning the hauler on the formal operating inspection record:
 - 4.10.7.2.1 The name of the driver;
 - 4.10.7.2.2 The name of the hauler;
 - 4.10.7.2.3 The address of the hauler;
 - 4.10.7.2.4 The name of the source of the waste;
 - 4.10.7.2.5 The address of the source of the waste;
 - 4.10.7.2.6 The weight and volume of the delivered; and
 - 4.10.7.2.7 The waste characteristics.
 - 4.10.7.2.8 The isolation of suspect waste and notification of authorities pursuant to section 4.10.5; and
 - 4.10.7.3 The owner or operator shall maintain a record of the inspections in accordance with the approved record keeping requirements of the Kentucky Division of Waste Management.

SECTION 5 Operator Certification and Training

- 5.1 Within 24 months from the date that ASME adopts a certification program for municipal solid waste combustor (incinerator) unit operators, each chief facility operator and shift supervisor of an affected facility shall obtain and keep current either a provisional or operator certification from ASME.
- 5.2 No owner or operator of an affected facility shall cause or allow a unit to be operated unless an ASME certified chief facility operator or an ASME certified shift supervisor on duty at the affected facility at all times during periods of unit operation. This requirement shall take effect 24 months after the date that ASME adopts a certification program for municipal solid waste combustor (incinerator) unit operators.
- 5.3 The owner or operator of an affected facility shall develop, update on an annual basis, and provide the District with one copy of, a site specific operations and maintenance manual that shall, at a minimum, address the following:

- 5.3.1 Summary of the applicable standards under this regulation;
- 5.3.2 Description of basic combustion theory applicable to a unit;
- 5.3.3 Procedures for receiving, handling and feeding waste;
- 5.3.4 Unit start-up, shutdown and malfunction procedures;
- 5.3.5 Procedures for maintaining proper combustion air supply levels;
- 5.3.6 Procedures for operating the unit within the standards established under this regulation;
- 5.3.7 Procedures for responding to periodic upset or off- specification conditions;
- 5.3.8 Procedures for minimizing particulate matter carry- over;
- 5.3.9 Procedures for monitoring burnout;
- 5.3.10 Procedures for handling ash;
- 5.3.11 Procedures for monitoring unit emissions; and,
- 5.3.12 Reporting and record keeping procedures,
- 5.4 The owner or operator of an affected facility shall establish a program for reviewing the operating manual annually with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel and crane or load handlers.
- 5.5 The initial review of the operating manual, as specified under section 5.4, shall be conducted prior to the assumption of responsibilities affecting unit operation by a person required to undergo training under section 5.1. Subsequent reviews of the manual shall be carried out annually by each person required to undergo training.
- 5.6 The operating manual shall be kept in a readily accessible location for all persons required to undergo training under section 5.1. The operating manual and records of training shall be available for inspection by District personnel, upon request.
- 5.7 The owner or operator of each affected facility shall maintain documentation to support compliance with this section. The information shall be made available upon request, and shall include, at a minimum, a description of the instruction given, the date of the instruction, the signature of the person receiving the instruction, and copies of the certificates issued to the chief facility operator and shift supervisor documenting successful completion of the training required in section 5.1.

SECTION 6 Compliance and Performance Testing

Within 60 days after achieving the maximum production rate at which an affected facility will be operated, but no later than 180 days after initial start-up of the facility, and at other times as may be required by the District, the owner or operator of an affected facility shall conduct performance tests according to Regulation 1.04 and shall furnish the District a written report of the performance tests. This section shall apply at all times, except for a period of one hour for start-up or shutdown of the affected facility and for a period not to exceed three hours during the malfunction of an affected facility. Except as provided in Regulation 1.04, the following methods shall be used to determine compliance with Section 3: 40 CFR Section 60.13 Methods 1, 2, 3, 5, 6, 6A, 6C, 7, 7E, 9, 10, and 19 and Performance Specifications 1, 2, 3, and 4, 40 CFR Part 60 Appendix F are adopted without change in Regulation 1.15. Kentucky Methods 23 and 26, Kentucky Specification 4A, and Kentucky Procedure 1 are incorporated by reference. For each performance test, an owner or operator may request that compliance be determined using CO₂ measurements corrected to an equivalent of 7% O₂. The relationship between O₂ and CO₂ levels for the affected facility shall be established during each initial performance test.

- 6.1 Metals. The following procedures and test methods shall be used to determine compliance with the standards for metal in Section 3:
- 6.1.1 Method 1 shall be used to select sampling sites and the number of traverse points.
 - 6.1.2 Method 2 shall be used for determining stack gas velocity and volumetric flow rates.
 - 6.1.3 Method 3 shall be used for gas analysis.
 - 6.1.4 Method 5 shall be used for determining compliance with particulate matter emission standards. The minimum sample volume shall be 1.7 cubic meters (60 cubic feet). The temperature of the sample gas in the probe and filter holder shall be no greater 120 ± 14 °C (248 ± 25 °F). An O₂ or CO₂ measurement shall be obtained simultaneously with each Method 5 run.
 - 6.1.5 Both Method 9 and CEMS shall be used for determining compliance with the opacity standard. However, Method 9 results shall take precedence over CEMS data if concurrent readings occur.
 - 6.1.6 The owner or operator of an affected facility with a unit capacity greater than 500 pounds per hour that does not have a wet scrubber, shall install, calibrate, maintain, and operate a CEMS for measuring opacity and shall record the output of the system.
 - 6.1.7 Following the date the initial performance test for the mass emission standard for particulate matter is completed to comply with this regulation, the owner or operator of an affected facility shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous compliance test). For an affected facility located within a small MSWI plant, if all three performance tests for a three year period indicate compliance with the particulate matter standard, the owner or operator may forego a performance test for the subsequent two years. At a minimum, a performance test for particulate matter for an affected facility located within a small MSWI plant shall be conducted every third year (no more than 36 months following the previous compliance test). If a performance test conducted every third year within a small MSWI plant indicates compliance with the mass emission particulate standard, the owner or operator may forego a performance test for an additional two years. If the aforementioned unit in a small MSWI plant should fail any of its emission tests, it shall return to an annual performance testing schedule.
 - 6.1.8 Following the date the initial performance test is completed or is required to be completed in this regulation, compliance with the opacity standard shall be determined by a six minute average opacity readings obtained from CEMS.
- 6.2 Sulfur dioxide. The following procedures and test methods shall be used for determining compliance with the SO₂ standards in Section 3.
- 6.2.1 The percentage reduction in the uncontrolled sulfur dioxide emissions (%PSO₂) shall be computed using the following formula:

$$\%PSO_2 = \frac{E_i - E_o}{E_i} * 100$$

where:

%PSO₂ = is the percentage reduction in uncontrolled SO₂ emissions.

- E_i = is the daily uncontrolled SO₂ emission rate.
- E_o = is the daily SO₂ rate measured at the outlet of the acid gas control device.

- 6.2.2 Methods 6, 6A or 6C, and 19 shall be used for determining the SO₂ emission rate.
- 6.2.3 The SO₂ performance test shall be conducted over 24 consecutive unit operating hours at maximum unit load. Compliance with the SO₂ standard shall be determined using a daily average.
- 6.2.4 The owner or operator of an affected facility with a unit capacity greater than 500 pounds per hour shall install, calibrate, maintain, and operate a CEMS for measuring SO₂ emissions discharged to the atmosphere and shall record the output of the system.
- 6.2.5 Following the date of the initial performance test or the date on which the initial performance test is required to be completed by this regulation, compliance with the SO₂ standard shall be determined based on the arithmetic average of the hourly emission rates during each 24 hour daily period measured between 12:00 midnight and the following midnight using CEMS inlet and outlet data, if compliance is based on a percentage reduction; or outlet data only if compliance is based on an emission limit.
- 6.2.6 The one hour average required under section 6.2.5 shall be expressed in nanograms per hour (pounds per hour) and shall be used to calculate the daily average emission rates. The one hour averages shall be calculated using the data points required in 40 CFR section 60.13(h).
- 6.2.7 For affected facilities which shall install CEMS, the span value of the CEMS at the inlet to the SO₂ control device shall be 125% of the maximum estimated hourly uncontrolled SO₂ emissions of the unit, and the span value of the CEMS at the outlet to the SO₂ control device shall be 50% of the maximum estimated hourly uncontrolled SO₂ emissions of the unit.
- 6.3 Hydrogen chloride. The following procedures and test methods shall be used for determining compliance with the HCl standards under section 3.
 - 6.3.1 The percentage reduction in uncontrolled HCl emissions (%PHCl) shall be computed using the following formula:

$$\%PHCl = \frac{E_i - E_o}{E_i} * 100$$

where:

- %PHCl = is the percentage reduction in uncontrolled HCl emissions.
- E_i = is the daily uncontrolled HCl emission rate.
- E_o = is the daily HCl rate measured at the outlet of the acid gas control device.

- 6.3.2 Method 26 shall be used for determining the HCl emission rate.
- 6.3.3 Following the date of the initial performance test or the date on which the initial performance test is required by this regulation, the owner or operator of an affected facility shall conduct a performance test for HCl on an annual basis (no more than 12 calendar months following the previous performance test). For an affected facility located within a small MSWI plant, if all three performance tests in a three year period indicate

compliance with the HCl standard, the owner or operator may forego a performance test for the subsequent two years. At a minimum, a performance test for HCl for an affected facility within a small MSWI plant shall be conducted every third year (no more than 36 months following the previous compliance test). If a performance test conducted every third year at a small MSWI plant indicates compliance with the HCl standard, the owner or operator may forego conducting a performance test for an additional two years. If the unit at a small MSWI plant fails to pass a performance test, then the unit shall return to an annual performance testing schedule.

6.4 Nitrogen oxides. The following procedures and test methods shall be used to determine compliance with the NO_x standard under Section 3:

6.4.1 Methods 7 or 7E, and 19 shall be used for determining the NO_x emission rate.

6.4.2 The owner or operator of an affected facility subject to the NO_x standard under Section 3 shall conduct an initial performance test for NO_x as required by this section. The initial performance test for NO_x shall be conducted over 24 consecutive hours of unit operation to determine compliance with the NO_x standard. CEMS data shall be used if required by section 6.4.4. Compliance with the NO_x standard shall be determined using a daily basis.

6.4.3 The owner or operator of an affected facility with a MSWI unit capacity greater than 500 pounds per hour which is subject to the NO_x standard in Section 3 shall install, calibrate, maintain, and operate a CEMS for measuring NO_x discharged to the atmosphere and shall record the output of the system.

6.4.4 Following the initial performance test or the date on which the initial performance test is required to be completed under this regulation, compliance with the emission limits for NO_x required under Section 3 shall be determined based on the arithmetic average of the hourly emission rates during each 24 hour daily period measured between 12:00 midnight and the following midnight using CEMS data.

6.4.5 The one hour average required under section 6.4.4 shall be expressed in parts per million volume (dry basis) and shall be used to calculate the daily average emission rates under section 3. The one hour averages shall be calculated using the data points required under 40 CFR section 60.13.

6.5 Carbon monoxide. The following procedures shall be used for determining compliance with the CO emission limits listed in Section 3:

6.5.1 Compliance with the CO emission limits listed in Section 3 shall be determined using Method 10;

6.5.2 The owner or operator of an affected facility with a MSWI unit capacity greater than 500 pounds per hour shall install, calibrate, maintain, and operate a CEMS for measuring CO at the incinerator outlet and shall record the output of the system; and

6.5.3 Following the initial performance test or the date on which the initial performance test is required to be completed by this regulation, compliance with the emission limits for CO required under Section 3 shall be determined based on the arithmetic average of the four hour emission rates measured using CEMS data.

6.6 The following procedures shall be used for determining compliance with the operating practices under Section 4:

6.6.1 The owner or operator of an affected facility which generates steam with a MSWI unit capacity greater than 500 pounds per hour shall install, calibrate, maintain, and operate a steam flow meter, shall measure steam flow in kilograms per hour (pounds per hour)

- steam on a continuous basis, and shall record the output of the monitor. Steam flow shall be calculated in one hour block averages; and
- 6.6.2 The owner or operator of an affected facility with a MSWI unit capacity greater than 500 pounds per hour shall install, calibrate, maintain, and operate a CEMS for measuring both secondary chamber temperature and the temperature of the flue gas stream at the inlet to the particulate matter air pollution control device and shall record the output of the device. Temperature shall be calculated in four hour block averages.
- 6.7 Additional CEMS requirements are:
- 6.7.1 CEMS data, if required, shall be used to determine compliance with emission standards and operating practice standards;
- 6.7.2 At a minimum, CEMS data, if required, shall be obtained for 90% of the hours per day for 90% of the days per month that the unit is operated and combusting MSW or RDF;
- 6.7.3 All valid CEMS data, if required, shall be used in calculating emission rates and percent reductions even if the minimum CEMS data requirements in section 6.7.2 are not met;
- 6.7.4 The procedures under 40 CFR Section 60.13 shall be followed for installation, evaluation, and operation of the CEMS;
- 6.7.5 If emission data from the CEMS are not obtained because of CEMS breakdown, repairs, calibration checks, or zero and span adjustments, emission data shall be obtained by using other monitoring systems as approved by the District or EPA Methods 6, 6A, 6C, 7, 7E, 10 and 19, as appropriate, to provide necessary emission data for a minimum of 90% of the hours per day for 90% of the days per month the unit is operated and combusting MSW or RDF;
- 6.7.6 CEMS shall conform to the applicable performance specifications in 40 CFR Part 60 Appendix B;
- 6.7.7 The requirements of 40 CFR Part 60 Appendix F shall be met in the operation of CEMS;
- 6.7.8 The owner or operator shall install and maintain an electronic data acquisition system that shall monitor and record the following parameters of proper unit operation:
- 6.7.8.1 Waste feed rate;
- 6.7.8.2 Ph values in the packed scrubber solution, if applicable; and
- 6.7.8.3 Time and duration of emergency by-pass of any emission control device; and
- 6.7.9 The owner or operator shall maintain, operate, calibrate and audit a data logging system and telemetry system compatible with the District's electronic data retrieval monitoring system. If the source is required to install and maintain any CEMS, the owner or operator shall supply at its own expense, a dedicated telephone access to the data logger.
- 6.8 Organics. The following procedures and test methods shall be used to determine compliance with standards for organics under Section 3:
- 6.8.1 Kentucky Method 23 shall be used for determining compliance with dioxin or furan emission standards. The sampling time shall be four hours and the minimum sampling volume shall be 4.0 cubic meters (140 cubic feet); and
- 6.8.2 Following the date of the initial performance test or the date on which the initial performance test was to be completed by the regulation, the owner or operator of an affected facility shall conduct a performance test for dioxin or furan emissions on an annual basis (no more than 12 months following the previous performance test). For affected facilities located within a small MSWI plant, if all three performance tests in a three year period indicate compliance with the dioxin or furan emission standard, the

owner or operator may forego a performance test for the subsequent two years. At a minimum, a performance test for dioxin or furan emissions at an affected facility located within a small MSWI plant shall be conducted every third year (no more than 36 months following the previous performance test). If a performance test conducted every third year within a small MSWI plant indicates compliance with dioxin or furan emissions standards, the owner or operator may forego conducting a performance test for an additional two years. If the aforementioned facility fails a performance test, then it shall return to an annual testing schedule.

6.9 Percent Reduction Requirements. The following procedures shall be used to determine compliance with Section 3:

6.9.1 Except as provided in section 6.9.4, the initial demonstration of compliance with the percent reduction requirement for processes MSW or RDF and Section 3 shall be required at the end of the first full calendar year (January through December) after the date of the initial start-up;

6.9.2 Compliance with the percent reduction requirement for processed MSW or RDF shall be determined by calculating the percentage difference between the weight of MSW received at the affected facility and the weight of the MSW combusted in the MSWI unit or the weight of the separated materials. Except as provided in section 6.9.4, beginning the month after the date of the initial start-up for new MSWIs, the percent reduction in MSW shall be calculated on a monthly basis using the monthly total weights recorded in compliance with Section 7. At the end of each full calendar year (January through December) the annual average percent MSW reduction (by weight) shall be calculated by using the annual total weights. In calculating the percent MSW reduction, a maximum of 15% weight reduction shall be attributed to the separation of yard waste. If the annual average percent reduction requirement for processed MSW or RDF is not achieved, the MSW or RDF shall not be considered processed MSW or RDF;

6.9.3 An owner or operator may elect to achieve, either wholly or partially, the percent reduction requirement for processed MSW or RDF, the prohibition of yard waste or vehicle batteries or the removal of household batteries of this regulation through an off-site source reduction or materials separation (recycling) program. The owner or operator shall submit a separation plan which contains sufficient information to measure the performance of the off-site separation program on an annual basis beginning the first full calendar year (January through December) after the initial start-up of the affected facility, except as provided in section 6.9.4. The off-site separation plan shall be submitted along with the initial compliance demonstration results; and

6.9.4 The owner or operator of an affected facility shall be responsible for operating the affected facility in compliance with all standards including the prohibition of combustion of unprocessed MSW, yard waste, vehicle batteries and household batteries. If another party provides processed MSW, or removes yard waste or vehicle batteries or household batteries, the provider of the service may become a co-operator of the affected facility. If the party providing the off site processing of MSW, removal of yard waste, or vehicle batteries, or household batteries elects to become a co-operator for the purpose of demonstrating compliance with this regulation, the owner or operator of the affected facility shall submit at the time of submittal of the initial compliance demonstration related to the requirements of this section:

- 6.9.4.1 A copy of a validly executed contract between the owner and operator of the affected facility and the party providing the processing of MSW, removal of vehicle batteries, removal of yard waste, or removal of household batteries which contains the following provisions:
 - 6.9.4.1.1 An undertaking by the party that is co-operator or sole operator of the affected facility regarding compliance with the requirements of sections 4.6 and 4.7; and
 - 6.9.4.1.2 An undertaking by the party to meet the requirements of sections 4.6 and 4.7 and a description of the specific actions that will be implemented to comply with these requirements; and
- 6.9.4.2 A certified statement signed by an authorized official representing the party that they agree to become a co-operator, or sole operator, for the purpose of demonstrating compliance with sections 4.6 and 4.7 and recognizing that enforcement action, including penalties, may be taken against the party for failure to demonstrate compliance with these requirements.

SECTION 7 Reporting and Recordkeeping Requirements

- 7.1 The owner or operator of an affected facility subject to Sections 3 and 4 shall maintain records of the following information for each affected facility:
 - 7.1.1 Calendar date that the data from performance tests or CEMS were obtained;
 - 7.1.2 Emission rates and parameters measured using the units and time bases required for demonstrating compliance;
 - 7.1.3 Identification of the operating periods that the calculated SO₂, NO_x, or CO emission rates, opacity, or the operating parameters exceeded the applicable standards, with reasons for the exceedences and a description of corrective actions taken;
 - 7.1.4 Identification of operating periods for SO₂, NO_x, or CO emissions, opacity or operational data have not been obtained, including reasons for not obtaining sufficient data and a description of the corrective actions taken;
 - 7.1.5 Identification of the times that SO₂, NO_x, or CO emissions, opacity, or operational data have been excluded from the calculation of average emission rates or parameters and the reasons for excluding the data;
 - 7.1.6 The results of daily SO₂, NO_x, and CO CEMS drift tests and accuracy assessments required in 40 CFR Part 60 Appendix B;
 - 7.1.7 The results of all applicable and annual performance tests conducted to determine compliance with the mass particulate matter and hydrogen chloride standards;
 - 7.1.8 Beginning the month after the date of the initial compliance tests, the amount by weight of MSW or RDF received on a monthly basis at the affected facility, the amount by weight of MSW or RDF combusted on a monthly basis, and the amount of recoverable materials by type and weight separated on a monthly basis. Separated paper and paperboard shall be stored in a covered area and shall be protected from rain and moisture, so the moisture of the paper and paperboard when weighed is similar to their moisture content when received in the MSW or RDF at the affected facility;
 - 7.1.9 Beginning the month after the date of the initial start-up, the estimated amount (by type and weight) of recoverable materials reduced or separated for recovery on a monthly basis through an off-site or community source reduction or materials separation (recycling) program;

- 7.1.10 Beginning at the end of the first full calendar year after the date of initial start-up, the calculations of annual average percentage reduction in MSW achieved for the previous calendar year; and
- 7.1.11 Beginning the month after the initial start-up and for each month thereafter, the amount (by weight) of vehicle batteries separated.
- 7.2 The owner or operator of an affected facility shall submit the initial performance test data, the performance evaluation of the CEMS using the applicable performance specifications in 40 CFR Part 60 Appendix B and the maximum unit load within 60 days of completing the tests.
- 7.3 A plan describing the procedures for separating materials for recovery to achieve the 40% or greater MSW reduction requirement for processed MSW or RDF, a plan describing the procedures for ensuring that vehicle batteries are not combusted in an affected facility, and a description of the program for removal of household batteries shall be provided at the time of submittal of the initial demonstration of compliance with the requirements of section 6. The information shall be provided by the thirtieth day following the end of the first full calendar year after initial start-up.
- 7.4 The owner or operator of an affected facility shall submit quarterly compliance reports to the District containing the information recorded under section 7 for all records required by this regulation which are applicable to the facility.
 - 7.4.1 The owner or operator required to install a CEMS shall submit for each calendar quarter, a written report of excess emissions (as defined in the applicable sections of this regulation) to the District. Both a printed report and a computer disc, formatted as specified by the District shall be submitted. All quarterly reports shall be postmarked by the thirtieth day following the end of each quarter and shall include the following information:
 - 7.4.1.1 The magnitude of excess emissions computed in accordance with the applicable section of this regulation, any conversion factors used, and the date and time of commencement and completion of each time period of excess emission;
 - 7.4.1.2 All hourly averages shall be reported for SO₂ and NO_x oxides monitors;
 - 7.4.1.3 Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken, or preventative measures adopted;
 - 7.4.1.4 The date and time identifying and the duration of each period during which the CEMS was inoperative except for zero and span checks and the nature of the system repairs or adjustments; and
 - 7.4.1.5 When no excess emissions have occurred or the CEMS has not been inoperative, repaired, or adjusted, such information shall be stated in the report.
- 7.5 Records of CEMS, steam flow, and temperature data shall be maintained for at least three years after date of recording and shall be available for inspection upon request.
- 7.6 Records showing the names of persons who have completed review of the operating manual and the documentation required by section 5.4, including the date of the initial review and all subsequent annual reviews, shall be maintained for at least three years after date of manual review and shall be made available for inspection upon request.

- 7.7 A description of the procedures employed for ensuring that unprocessed MSW or RDF is not combusted in an affected facility shall be maintained along with associated records to demonstrate use of the procedures, and shall be made available for inspection upon request.
- 7.8 Documentation demonstrating that ash disposal from an affected facility complies with section 4.7 and has been submitted to the Kentucky Division of Waste Management in the frequency required by the Kentucky Division of Waste Management.

Adopted v1/10-20-93; effective 10-20-93.

REGULATION 7.77 Standards of Performance For New Blast Furnace Casthouses

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new blast furnace casthouses.

SECTION 1 Applicability

This regulation applies to blast furnace casthouses commenced on or after the effective date of this regulation.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Blast Furnace" means a furnace producing pig iron by introducing iron bearing materials, coke, and flux materials into a vessel and introducing heated combustion air to form a reducing gas which is passed counter current to the descending raw materials.
- 2.2 "Blast Furnace Casthouse" means the building or buildings which house the following:
 - 2.2.1 Casting of hot metal from a blast furnace from an opening at the bottom of the furnace through a runner into a torpedo car; or
 - 2.2.2 Casting of the slag from a blast furnace from an opening at the bottom of the furnace through runners into a slag ladle or slag pit.
- 2.3 "Control device" means the air pollution control equipment used to remove particulate matter generated in the blast furnace casthouses from the effluent gas stream.

SECTION 3 Standards for Particulate Matter

No owner or operator of a blast furnace casthouse subject to this regulation shall cause to be discharged into the atmosphere from the blast furnace casthouse any gases which:

- 3.1 Exhibit an average opacity in excess of 10%.
- 3.2 If such gases exit from a gas cleaner, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere any gases which:
 - 3.2.1 Contain particulate matter in excess of 0.010 gr/dscf as tested during casting of hot metal and/or slag; and
 - 3.2.2 Exhibit an average opacity in excess of 10%.

SECTION 4 Test Methods and Procedures

Reference test methods in 40 CFR Part 60 Appendix A shall be used to determine compliance with the standards prescribed in Section 3 as follows:

- 4.1 Reference Method 5 for the concentration of particulate matter and associated moisture content;

- 4.2 Reference Method 1 for sample and velocity traverses;
- 4.3 Reference Method 2 for velocity and volumetric flow rate;
- 4.4 Reference Method 3 for gas analysis; and
- 4.5 Reference method 9 for the determination of opacity.
- 4.6 For the purpose of determining compliance with Section 3, the following procedures shall be used to supplement Method 9:
 - 4.6.1 A series of consecutive observations taken at 15 second intervals shall be made during the entire period of the time that hot metal and slag are being cast. Compliance shall be based on a comparison of the standards in Section 3 with the highest average opacity occurring over any six consecutive minutes during the period of observation. If emissions are being emitted from the roof monitor or other discharge points from the building, the State of Kentucky currently certified opacity reader shall read and record all plume emission points with a minimum of one six-minute average reading record for each. The failure of single emission point to meet the standards in Section 3 will cause the entire casthouse to fail the standard.
 - 4.6.2 Method 9 shall be adhered to precisely in the observation and recording of all readings from all emission points.

SECTION 5 Variances

The District may grant a variance from the control requirements of this regulation. Requests for a variance shall be supported by adequate technical and economic documentation, provided that the alternative strategy shall result in an equivalent overall reduction in particulate emissions from the source as would be required by this regulation.

Adopted v1/10-20-93; effective 10-20-93.

REGULATION 7.78 Standards of Performance for New Medical Waste Incinerators

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS 77 Chapter 77 Air Pollution Control

Necessity And Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of emissions from new medical waste incinerators.

SECTION 1 Applicability

- 1.1 This regulation applies to each affected facility, which means each unit for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation. Affected facilities that combine and combust MSW, solid waste, or hazardous waste with medical waste shall be subject to this regulation. Affected facilities that combust only MSW shall be subject to Regulation 7.76 *Standards of Performance for New Municipal Solid Waste Incinerators*.
- 1.2 The physical or operational changes made to an existing unit to comply with Regulation 6.41 shall be considered a modification or reconstruction and shall not subject the existing unit to this regulation.
- 1.3 Emission limitations or control requirements established by another regulation or the Cabinet may be more stringent than those in this regulation. The more stringent requirements shall govern.

SECTION 2 Definitions

Terms used in this regulation that are not defined in this regulation shall have the meaning given them in Regulation 1.02 *Definitions*.

- 2.1 "Acid gases" means sulfur dioxide and hydrogen chlorine gases emitted from units.
- 2.2 "Affected facility" means a device for which construction, modification, or reconstruction commenced on or after the effective date of this regulation, that combusts material which, included in the waste stream, would be medical waste.
- 2.3 "Afterburner" means an auxiliary burner for destroying unburned or partially burned combustion gases after they have passed from the combustion chamber.
- 2.4 "ASME" means the American Society of Mechanical Engineers.
- 2.5 "Biologicals" means a biological product used in prevention or treatment of disease.
- 2.6 "Bubbling fluidized bed incinerator" means a fluidized bed incinerator in which the majority of the bed material remains in the primary combustion zone.
- 2.7 "Burnout" means the percent of matter completely burned in the primary chamber of an affected facility.
- 2.8 "Chief facility operator" means the person in direct charge and control of the operation of an affected facility who is responsible for daily on-site supervision, technical direction, management, and overall performance of the facility.

- 2.9 "Circulating fluidized bed incinerator" means a fluidized bed incinerator in which the majority of the bed material is carried out of the primary combustion zone and is transported back to the primary zone through a recirculation loop.
- 2.10 "Commercial solid waste" means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding household and industrial wastes. Commercial solid waste includes waste from medical facilities, schools, and other institutions that is not medical waste.
- 2.11 "Continuous emission monitoring system" (CEMS) means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.
- 2.12 "Daily average" means the average of all hourly emission rates when the affected facility is operating and firing municipal solid waste, measured over a 24-hour period between 12:00 midnight and the following midnight.
- 2.13 "Dioxin or furans" means total tetra- through octa-chlorinated dibenzo-p-dioxins and tetra-through octa-chlorinated dibenzofurans.
- 2.14 "Ferrous metals" means metals and alloys containing iron. Ferrous metals include, but are not limited to, pieces of scrap metal and household appliances made of iron containing metals, including stoves, refrigerators, air conditioners, and other appliances. Ferrous metals shall not include whole automobiles or other vehicles or vehicle bodies.
- 2.15 "Field-erected" means assembled from components at a final site of operations.
- 2.16 "Four-hour block average" means the average of all hourly emission rates when the affected facility is operating and combusting municipal solid waste measured over four-hour periods of from 12:00 midnight to 4:00 a.m., 4:00 a.m. to 8:00 a.m., 8:00 a.m. to 12:00 noon, 12:00 noon to 4:00 p.m., 4:00 p.m. to 8:00 p.m., and 8:00 p.m. to 12:00 midnight.
- 2.17 "Hazardous waste" means any discarded material or material intended to be discarded or substance or combination of such substances intended to be discarded in any form that, because of its quantity, concentration or physical, chemical or infectious characteristics, may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
- 2.18 "Household battery" means a dry cell battery.
- 2.19 "Household solid waste" means solid waste, including garbage and trash generated by single and multiple family residences, hotels, motels, bunkhouses, ranger stations, crew quarters, and recreational areas such as picnic areas, parks, and campgrounds.
- 2.21 "Industrial waste" means a liquid, gaseous, or solid waste substance resulting from a process of industry, manufacture, trade, or business, or from the development, processing, or recovery of a natural resource.
- 2.22 "Large MSWI plant" means an MSWI plant with a capacity greater than 225 megagrams (250 tons) per day of municipal waste.
- 2.23 "Mass burn refractory incinerator" means an incinerator that combusts waste in a refractory wall furnace.
- 2.24 "Mass burn rotary waterwall incinerator" means an incinerator that combusts waste in a cylindrical rotary waterwall furnace.
- 2.25 "Mass burn waterwall incinerator" means an incinerator that combusts waste in a conventional

- waterwall furnace.
- 2.26 "Maximum unit load" means the maximum 1-hour load achieved when compliance with all applicable regulations is demonstrated or during a subsequent test demonstrating compliance with a higher unit load.
- 2.27 "Medical waste" means:
- 2.27.1 Cultures and stocks of infectious agents, including specimen cultures collected from medical and pathological laboratories, cultures and stocks of infectious agents from research and industrial laboratories, waste from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, and mix cultures,
- 2.27.2 Waste human blood and blood products such as serum, plasma, and other blood components,
- 2.27.3 Pathological wastes, such as tissues, organs, body parts, and body fluids that are removed during surgery and autopsy,
- 2.27.4 All discarded sharps, including, but not limited to, hypodermic needles, syringes, Pasteur pipettes, broken glass, scalpels, scalpel blades, glass vials, etc., used in patient care, autopsy, or embalming or that have come into contact with infectious agents during use in medical, research, or industrial laboratories,
- 2.27.5 Carcasses and body parts of animals that were exposed to pathogens in research, in production of biologicals, or in the in vivo testing of pharmaceuticals, and
- 2.27.6 Other wastes as may be designated by a permit issued by the District.
- 2.28 "Metals" means condensable metals emitted from units. For the purpose of this regulation, particulate matter shall serve as a surrogate for the measurement and controls of metals.
- 2.29 "Modular excess air incinerator" means an incinerator that combusts waste, is not field-erected, and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.
- 2.30 "Modular starved air incinerator" means an incinerator that combusts waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.
- 2.31 "Municipal solid waste" or "MSW" means household solid waste and commercial solid waste. Medical waste shall not be considered to be MSW and is regulated by Regulation 6.41 or 7.78.
- 2.32 "Municipal solid waste incinerator" (MSWI) or "municipal solid waste incinerator unit" (MSWI unit) means a device that combusts material that, if included in the waste stream, would be municipal waste. This includes, but is not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved air or excess air), boilers (i.e., steam generating units), and furnaces (whether suspension-fired, grate-fired, mass-fired, or fluidized bed-fired).
- 2.33 "Multiple-chamber incinerator" means an incinerator consisting of at least 2 refractory-lined combustion chambers (primary and secondary) in series, physically separated by refractory walls and interconnected by gas passage ports or ducts.
- 2.34 "Normal" means a volumetric measurement at 32°F and 1 atmosphere.
- 2.35 "Organics" means organic compounds emitted from units and includes dioxins or furans. For the purpose of this regulation, dioxin or furan shall serve as a surrogate for the measurement

- and control of organics.
- 2.36 "Particulate matter" means total particulate matter emitted from affected facilities.
- 2.37 "Particulate matter carryover" means particulate matter that is passed from the primary chamber of an incinerator into the flue gas stream.
- 2.38 "Plant" means 1 or more units at the same location for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation.
- 2.39 "Plant capacity" means the aggregate unit capacity of all units at a plant for which construction, modification, or reconstruction is commenced on or after the effective date of this regulation.
- 2.40 "Processed municipal solid waste or refuse-derived fuel" or "processed MSW or RDF" means MSW or RDF that has been processed to separate materials for recovery prior to combustion in an MSWI unit. MSW or RDF is considered to be processed MSW or RDF if an overall 40% or greater reduction by weight (annual average) of MSW is achieved through separation of recoverable materials. A maximum of 15% reduction by weight of overall MSW shall be attributed to separation of yard waste. The 40% or greater overall reduction requirement may be achieved by on-site mechanical separation, on-site manual separation, off-site mechanical separation, off-site manual separation, a curb side source reduction or a materials separation (recycling) program, or a combination of any of these.
- 2.41 "Recoverable materials" means paper, paperboard, ferrous metals, nonferrous metals, glass, plastics, household batteries, and yard waste.
- 2.42 "Refuse-derived fuel" (RDF) means a type of MSW produced by processing MSW through shredding and size classification. This includes all classes of RDF from low density fluff RDF through densified RDF fuel pellets.
- 2.43 "Refuse-derived fuel co-fired incinerator" or "RDF co-fired incinerator" means an incinerator that is designed to fire refuse-derived fuel simultaneously with other fuels.
- 2.44 "RDF spreader stoker" means a steam generating unit that combusts RDF in a semi-suspension firing mode using air-fed distributors.
- 2.45 "Same location" means the same or contiguous property that is under common ownership or control, including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or a combination of these, including a municipality or other governmental unit or a quasi-governmental authority (e.g., a public utility district or waste management district).
- 2.46 "Shift supervisor" means the person in direct charge and control of the operation of an affected facility who is responsible for on-site supervision, technical direction, management, and overall performance of the affected facility during an assigned shift.
- 2.47 "Small MSWI plant" means an MSWI plant with an MSWI plant capacity of greater than 500 pounds per hour but less than or equal to 225 megagrams per day (250 tons per day) of municipal solid waste.
- 2.48 "Solid waste" means any garbage, refuse, sludge, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining (excluding coal mining waste, coal mining by-products, refuse, and overburden), agricultural operations, and community activities, but does not include those materials, including, but not limited to, sand, soil, rock, gravel, or bridge debris extracted as a part of

- a public road construction project funded wholly or in part with state funds, recovered material, special waste as designated by KRS 224.50-760, solid or dissolved material in domestic sewage, manure, crops, crop residue, or a combination of these that is placed on the soil for return to the soil as fertilizers or soil conditioners, or solid or dissolved material in irrigation return flows or industrial discharges that are point sources subject to permits under the Federal Water Pollution Control Act (86 Stat. 880) Section 402, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954 (68 Stat. 923).
- 2.49 "Standard" means a volumetric measurement at 68°F and 1 atmosphere.
- 2.50 "Uncontrolled hydrogen chloride emission rate" means the HCl emission rate that would occur from the combustion of medical waste in the absence of HCl emissions control.
- 2.51 "Uncontrolled sulfur dioxide emission rate" means the SO₂ emission rate that would occur from the combustion of medical waste in the absence of SO₂ emissions control.
- 2.52 "Unit" means an affected facility including, but not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved air or excess air), boilers (i.e., steam generating units), and furnaces (whether suspension-fired, grate-fired, mass-fired, or fluidized bed-fired).
- 2.53 "Unit capacity" means the maximum designed charging rate of the waste for an individual unit.
- 2.54 "Unit load" means the volume of steam produced, expressed in kilograms per hour (pounds per hour) of steam.
- 2.55 "Unprocessed MSW or RDF" means MSW or RDF that has not been processed to separate materials for recovery prior to combustion or for which less than 40% reduction by weight (annual average) of MSW is achieved as specified under processed MSW or RDF.
- 2.56 "Vehicle battery" means a wet lead-acid battery.
- 2.57 "Yard waste" means vegetative matter removed as a result of outdoor maintenance practices from residential and commercial yards, municipal parks, gardens, golf courses, and other similar areas, and includes, but is not limited to, grass trimmings, tree branches, straw, and leaves.

SECTION 3 Emission Standards

- 3.1 On or after the date on which the initial performance test is completed or required to be completed by Section 6, no owner or operator of an affected facility with a plant capacity of 500 pounds per hour or less shall cause to be discharged into the atmosphere from the affected facility:
- 3.1.1 Particulate matter in excess of 183 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) of exhaust gas, corrected to 7% O₂ (dry basis),
- 3.1.2 Carbon monoxide in excess of 100 parts per million by volume corrected to 7% O₂ (dry basis), or
- 3.1.3 Visible air contaminants in excess of 10% opacity.
- 3.2 On or after the date on which the initial performance test is completed or required to be completed by Section 6, no owner or operator of an affected facility with a plant capacity greater than 500 pounds per hour but less than or equal to 250 tons per day, shall cause or allow to be discharged into the atmosphere from the affected facility:
- 3.2.1 Particulate matter in excess of 34 milligrams per dry standard cubic meter (0.015 grains

- per dry standard cubic foot) of exhaust gas, corrected to 7% O₂ (dry basis),
- 3.2.2 Carbon monoxide emissions in excess of 100 parts per million by volume corrected to 7% O₂ (dry basis),
- 3.2.3 Hydrochloric acid emissions in excess of 10% of the uncontrolled HCl emission rate (90% reduction by weight) on an hourly basis or 25 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent,
- 3.2.4 Sulfur dioxide emissions in excess of 15% of the uncontrolled SO₂ emission rate (85% reduction by weight) on an hourly basis or 30 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities that combust only medical waste, or
- 3.2.5 Visible air contaminants in excess of 10% opacity.
- 3.3 On or after the date on which the initial performance test is completed or required to be completed by Section 6, no owner or operator of an affected facility with a plant capacity greater than 250 tons per day shall cause or allow to be discharged into the atmosphere:
 - 3.3.1 Particulate matter emissions in excess of 34 milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot) of exhaust gas corrected to 7% O₂ (dry basis),
 - 3.3.2 Carbon monoxide emissions in excess of 100 parts per million by volume corrected to 7% O₂ (dry basis),
 - 3.3.3 Hydrochloric acid emissions in excess of 5% of the uncontrolled HCl emission rate (95% reduction by weight) on an hourly basis or 25 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent,
 - 3.3.4 Sulfur dioxide emissions in excess of 15% of the uncontrolled SO₂ emission rate (85% reduction by weight) on an hourly basis or 30 parts per million by volume, corrected to 7% O₂ (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities that combust only medical waste,
 - 3.3.5 Visible air contaminants in excess of 10% opacity, or
 - 3.3.6 Nitrogen oxides emissions in excess of 120 parts per million by volume, corrected to 7% O₂ (dry basis).

SECTION 4 Standards for Operating Practices

The requirements for unit operating practices listed in this Section apply to all units.

- 4.1 No owner or operator of an affected facility that generates steam shall cause the facility to operate at a load level greater than 100% of the maximum unit load. An owner or operator of an affected facility who wishes to operate at a load greater than the maximum unit load may do so by conducting all applicable compliance tests to establish a higher maximum unit load.
- 4.2 No owner or operator of an affected facility shall burn medical waste except in a multiple-chamber incinerator with a solid hearth, or in a device found to be equally effective for the purpose of air contaminant control as determined by the District.
- 4.3 Temperature and residence time requirements for affected facilities, equipped with a secondary chamber, while the affected facility is combusting medical waste are as follows:
 - 4.3.1 The incinerator secondary chamber shall be maintained at a temperature of $982 \pm 93^{\circ}\text{C}$ ($1800 \pm 200^{\circ}\text{F}$),
 - 4.3.2 The minimum secondary chamber residence time shall be 1 second, and

- 4.3.3 The incinerator shall have interlocks or other process control devices to prevent operation of the incinerator until the conditions in sections 4.3.1, 4.3.2, and 4.4 are assured.
- 4.4 No owner or operator of an affected facility other than a facility using a wet scrubber as a particulate matter control device shall allow the temperature of the flue gases entering the particulate matter control device inlet to exceed 149°C (300°F) while the affected facility is combusting medical waste.
- 4.5 Owners or operators of affected facilities that choose to combine and combust MSW or RDF, hazardous waste, or solid waste with medical waste in a unit shall comply with:
 - 4.5.1 The emission standards of Section 3 and operating practices of this Section, and
 - 4.5.2 If the owner or operator has applied for and has been issued a "materials separation or combustion permit" by the State, then separated materials covered under the materials separation or combustion permit may be combusted in the affected facility and may be credited toward the overall 40% materials separation requirement for processed MSW or RDF.
- 4.6 Owners or operators of affected facilities may combust processed MSW or RDF or solid waste that has not been combined with medical waste in a unit, and shall comply with Regulation 7.76.
- 4.7 Owners or operators of affected facilities shall cause ash from affected facilities to be tested to determine the toxicity of the ash, using tests required in 401 KAR Chapter 31. Ash that is determined to be hazardous waste shall be disposed of according to the regulations of the Division of Waste Management. Ash that is determined to not be hazardous waste shall be disposed of in a landfill permitted by the Division of Waste Management.
- 4.8 Owners or operators of affected facilities that receive medical waste from generators that are noncontiguous to the incineration site shall comply with the operating requirements for contained landfills; i.e., shall implement a program at the facility for detecting and preventing the disposal of regulated hazardous waste as defined in 401 KAR Chapter 31 and polychlorinated biphenyls (PCBs) as defined in 40 CFR Section 761. This program shall include, at a minimum:
 - 4.8.1 Random inspections of incoming waste,
 - 4.8.2 Inspection of suspicious waste,
 - 4.8.3 Records of inspections,
 - 4.8.4 Training of facility personnel to recognize regulated hazardous waste,
 - 4.8.5 Procedures for notifying the proper authorities and the District if a regulated hazardous waste is discovered at the facility and isolating this waste from the waste stream,
 - 4.8.6 Employee safety, health, training, and equipment to be used in inspections, and
 - 4.8.7 The owner or operator shall have a program approved by Kentucky Division of Waste Management to inspect all waste entering the source for combustion. This program to exclude hazardous waste shall include:
 - 4.8.7.1 Random inspections in time, but uniformly distributed, of all contributing waste sources based on the volume received from each,
 - 4.8.7.2 Identification data concerning the hauler on the formal operating inspection record:
 - 4.8.7.2.1 The name of the driver,
 - 4.8.7.2.2 The name of the hauler,

- 4.8.7.2.3 The address of the hauler,
- 4.8.7.2.4 The name of the source of the waste,
- 4.8.7.2.5 The address of the source of the waste,
- 4.8.7.2.6 The weight and volume of the waste delivered,
- 4.8.7.2.7 The waste characteristics, and
- 4.8.7.2.8 The isolation of suspect waste and notification of authorities as required by section 4.8.5, and
- 4.8.7.3 A record, maintained by the owner or operator, of the inspections in accordance with the approved record keeping requirements of the Kentucky Division of Waste Management.

SECTION 5 Operator Training

- 5.1 Each chief facility operator and shift supervisor of an affected facility shall successfully complete EPA's "Hospital Incinerator Operator Training Course."
- 5.2 No owner or operator of an affected facility shall cause or allow a unit to be operated unless the chief facility operator or shift supervisor, who has successfully completed the training course identified in section 5.1, is on duty at the affected facility at all times during periods of unit operation.
- 5.3 The owner or operator of an affected facility shall develop, update on an annual basis, and provide the District with 1 copy of, a site-specific operations manual that shall, at a minimum, address the following elements:
 - 5.3.1 Summary of the applicable standards under this regulation,
 - 5.3.2 Description of basic combustion theory applicable to a unit,
 - 5.3.3 Procedures for receiving, handling, and feeding the waste,
 - 5.3.4 Unit start-up, shutdown, and malfunction procedures,
 - 5.3.5 Procedures for maintaining proper combustion air supply levels,
 - 5.3.6 Procedures for operating the unit within the standards established under this regulation,
 - 5.3.7 Procedures for responding to periodic upset or off-specification conditions,
 - 5.3.8 Procedures for minimizing particulate matter carry-over,
 - 5.3.9 Procedures for monitoring burnout,
 - 5.3.10 Procedures for handling ash,
 - 5.3.11 Procedures for monitoring unit emissions, and
 - 5.3.12 Reporting and recordkeeping procedures.
- 5.4 The owner or operator of an affected facility shall establish a program for reviewing the operating manual annually with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane or load handlers.
- 5.5 The initial review of the operating manual, as specified under section 5.4, shall be conducted prior to the assumption of responsibilities affecting unit operation by a person required to undergo training under section 5.1. Subsequent reviews of the manual shall be carried out annually by each person required to undergo training.
- 5.6 The operating manual shall be kept in a readily accessible location for all persons required to undergo training under section 5.1. The operating manual and records of training shall be available for inspection by District personnel upon request.

- 5.7 The owner or operator of each affected facility shall maintain documentation to support compliance with this Section. The information shall be made available upon request, and shall include, at a minimum, a description of the instruction given, the date of the instruction, the signature of the person receiving the instruction, and copies of the certificates issued to the chief facility operator and shift supervisor documenting successful completion of the training required in section 5.1.

SECTION 6 Compliance and Performance Testing

Within 60 days after achieving the maximum production rate at which an affected facility will be operated, but no later than 180 days after initial start-up of the affected facility, and at other times as may be required by the District, the owner or operator of an affected facility shall conduct performance tests according to Regulation 1.04 *Performance Tests* and shall furnish the District a written report of the performance tests. This Section shall apply at all times except for a period of 1 hour for start-up or shutdown of the affected facility and for a period not to exceed 3 hours during the malfunction of an affected facility. Except as provided in Regulation 1.04, the following methods shall be used to determine compliance with Section 3. 40 CFR §60.13, Methods 1, 2, 3, 5, 6, 6A, 6C, 7, 7E, 9, 10, and 19 and Performance Specifications 1, 2, 3, and 4 are adopted without change in Regulation 1.15 *Version of Federal Regulations Incorporated by Reference*. Kentucky Methods 23 and 26, Kentucky Specification 4A, and Kentucky Procedure 1 are incorporated by reference. For each performance test, an owner or operator may request that compliance be determined using CO₂ measurements corrected to an equivalent of 7% O₂. The relationship between O₂ and CO₂ levels for the affected facility shall be established during each initial performance test.

- 6.1 Metals. The following procedures and test methods shall be used to determine compliance with the standards for metal in Section 3:
- 6.1.1 Method 1 shall be used to select sampling sites and the number of traverse points.
 - 6.1.2 Method 2 shall be used for determining stack gas velocity and volumetric flow rates.
 - 6.1.3 Method 3 shall be used for gas analysis.
 - 6.1.4 Method 5 shall be used for determining compliance with particulate matter emission standards. The minimum sample volume shall be 1.7 cubic meters (60 cubic feet). The temperature of the sample gas in the probe and filter holder shall be no greater than 120 ± 14°C (248 ± 25°F). An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.
 - 6.1.5 Both Method 9 and CEMS shall be used for determining compliance with the opacity standard. However, Method 9 results shall take precedence over CEMS data if concurrent readings occur.
 - 6.1.6 The owner or operator of an affected facility with a unit capacity greater than 500 pounds per hour that does not have a wet scrubber shall install, calibrate, maintain, and operate a CEMS for measuring opacity and shall record the output of the system.
 - 6.1.7 Following the date the initial performance test for the mass emission standard for particulate matter is completed to comply with this regulation, the owner or operator of an affected facility shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous compliance test).
 - 6.1.8 Following the date the initial performance test is completed or is required to be completed in this regulation, compliance with the opacity standard shall be determined by 6-minute

average opacity readings obtained from CEMS.

6.2 Sulfur dioxide. The following procedures and test methods shall be used for determining compliance with the SO₂ standards in Section 3:

6.2.1 The percentage reduction in the uncontrolled SO₂ emissions (% PSO₂) shall be computed using the following formula:

$$\% PSO_2 = \frac{(E_i - E_o) \times 100}{E_i}$$

where:

- % PSO₂ = the percentage reduction in uncontrolled SO₂ emissions.
- E_i = the daily uncontrolled SO₂ emission rate.
- E_o = the daily SO₂ rate measured at the outlet of the acid gas control device.

6.2.2 Methods 6, 6A or 6C, and 19 shall be used for determining the SO₂ emission rate.

6.2.3 The SO₂ performance test shall be conducted over 24 consecutive unit operating hours at maximum unit load. Compliance with the SO₂ standard shall be determined using a daily average.

6.2.4 The owner or operator of an affected facility subject to section 3.2.4 or 3.3.4 shall install, calibrate, maintain, and operate a CEMS for measuring SO₂ emissions discharged to the atmosphere and shall record the output of the system.

6.2.5 Following the date of the initial performance test or the date on which the initial performance test is required to be completed by this regulation, compliance with the SO₂ standard shall be determined based on the arithmetic average of the hourly emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using CEMS inlet and outlet data if compliance is based on a percentage reduction; or outlet data only if compliance is based on an emission limit.

6.2.6 The 1-hour average required under section 6.2.5 shall be expressed in nanograms per hour (pounds per hour) and shall be used to calculate the daily average emission rates. The 1-hour averages shall be calculated using the data points required in 40 CFR §60.13(h).

6.2.7 For affected facilities that shall install CEMS, the span value of the CEMS at the inlet to the SO₂ control device shall be 125% of the maximum estimated hourly uncontrolled SO₂ emissions of the unit, and the span value of the CEMS at the outlet to the SO₂ control device shall be 50% of the maximum estimated hourly uncontrolled SO₂ emissions of the unit.

6.3 Hydrogen chloride. The following procedures and test methods shall be used for determining compliance with the HCl standards under Section 3:

6.3.1 The percentage reduction in uncontrolled hydrogen chloride emissions (% PHCl) shall be computed using the following formula:

$$\% PHCl = \frac{(E_i - E_o) \times 100}{E_i}$$

where:

- % PHCl = the percentage reduction in uncontrolled HCl emissions.

- E_i = the daily uncontrolled HCl emission rate.
- E_o = the daily HCl rate measured at the outlet of the acid gas control device.

- 6.3.2 Kentucky Method 26 shall be used for determining the HCl emission rate.
- 6.3.3 Following the date of the initial performance test or the date on which the initial performance test is required by this regulation, the owner or operator of an affected facility shall conduct a performance test for HCl on an annual basis (no more than 12 calendar months following the previous performance test).
- 6.4 Nitrogen oxides. The following procedures and test methods shall be used to determine compliance with the NO_x standard under Section 3.
 - 6.4.1 EPA Methods 7 or 7E, and 19 shall be used for determining the NO_x emission rate.
 - 6.4.2 The owner or operator of an affected facility subject to the NO_x standard under Section 3 shall conduct an initial performance test for NO_x as required by this Section. The initial performance test for NO_x shall be conducted over 24 consecutive hours of unit operation to determine compliance with the NO_x standard. CEMS data shall be used if required by section 6.4.4. Compliance with the NO_x standard shall be determined using a daily basis.
 - 6.4.3 The owner or operator of an affected facility subject to the NO_x standard in Section 3 shall install, calibrate, maintain, and operate a CEMS for measuring NO_x discharged to the atmosphere and shall record the output of the system.
 - 6.4.4 Following the initial performance test or the date on which the initial performance test is required to be completed under this regulation, compliance with the emission limits for NO_x required under Section 3 shall be determined based on the arithmetic average of the hourly emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using CEMS data.
 - 6.4.5 The 1-hour average required under section 6.4.4 shall be expressed in parts per million volume (dry basis) and shall be used to calculate the daily average emission rates under Section 3. The 1-hour averages shall be calculated using the data points required under 40 CFR §60.13.
- 6.5 Carbon monoxide. The following procedures shall be used for determining compliance with the CO standards listed in Section 3:
 - 6.5.1 Compliance with the CO emission limits listed in Section 3 shall be determined using Method 10.
 - 6.5.2 The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring CO at the incinerator outlet and shall record the output of the system.
 - 6.5.3 Following the initial performance test or the date on which the initial performance test is required to be completed by this regulation, compliance with the emission limits for CO required under Section 3 shall be determined based on the arithmetic average of the 4-hour emission rates measured using CEMS data.
- 6.6 The following procedures shall be used for determining compliance with the operating practices under Section 4:
 - 6.6.1 The owner or operator of an affected facility that generates steam shall install, calibrate, maintain, and operate a steam flow meter; shall measure steam flow in kilograms per hour (pounds per hour) steam on a continuous basis; and shall record the output of the

- monitor. Steam flow shall be calculated in 1-hour block averages.
- 6.6.2 The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the primary chamber temperature, the secondary chamber temperature, and the temperature of the flue gas stream at the inlet to the particulate matter air pollution control device and shall record the output of the device. Temperature shall be calculated in 4-hour block averages.
- 6.7 Additional CEMS requirements:
- 6.7.1 CEMS data, if required, shall be used to determine compliance with emission standards and operating practice standards.
- 6.7.2 At a minimum, CEMS data, if required, shall be obtained for 90% of the hours per day for 90% of the days per month that the unit is operated and combusting medical waste.
- 6.7.3 All valid CEMS data, if required, shall be used in calculating emission rates and percent reductions even if the minimum CEMS or continuous monitoring system data requirements in section 6.7.2 are not met.
- 6.7.4. The procedures under 40 CFR §60.13 shall be followed for installation, evaluation, and operation of the CEMS.
- 6.7.5 If emission data from the CEMS or continuous monitoring systems are not obtained because of CEMS or continuous monitoring system breakdown, repairs, calibration checks, or zero and span adjustments, emission data shall be obtained by using other monitoring systems as approved by the District or Methods 6, 6A, 6C, 7, 7E, 10, and 19, as appropriate, to provide necessary emission data for a minimum of 90% of the hours per day for 90% of the days per month the unit is operated and combusting medical waste.
- 6.7.6 CEMS shall conform to the applicable performance specifications in 40 CFR Part 60 Appendix B.
- 6.7.7 The requirements of 40 CFR Part 60 Appendix F shall be met in the operation of CEMS.
- 6.7.8 The owner or operator shall install and maintain an electronic data acquisition system that shall monitor and record the following parameters of proper unit operation:
- 6.7.8.1 Waste feed rate,
- 6.7.8.2 Ph values in the packed scrubber solution, if applicable, and
- 6.7.8.3 Time and duration of emergency by-pass of any emission control device.
- 6.7.9 The owner or operator shall maintain, operate, calibrate, and audit a data logging system and telemetry system compatible with the District's electronic data retrieval monitoring system. If the source is required to install and maintain any CEM system, the owner or operator shall supply, at its expense, a dedicated telephone access to the data logger.

SECTION 7 Reporting and Recordkeeping Requirements

- 7.1 The owner or operator of an affected facility subject to Sections 3 and 4 shall maintain records of the following information for each affected facility:
- 7.1.1 Calendar date that the data from performance tests or CEMS was obtained,
- 7.1.2 Emission rates and parameters measured using the units and time bases required for demonstrating compliance,
- 7.1.3 Identification of the operating periods that the calculated sulfur dioxide, nitrogen oxides, or carbon monoxide emission rates, opacity, or the operating parameters exceeded the applicable standards, with reasons for the exceedances and a description of corrective

- actions taken,
- 7.1.4 Identification of operating periods for which SO₂, NO_x, or CO emissions, opacity, or operational data have not been obtained, including reasons for not obtaining sufficient data and a description of the corrective actions taken,
- 7.1.5 Identification of the times that SO₂, NO_x, or CO emissions, opacity, or operational data have been excluded from the calculation of average emission rates or parameters and the reasons for excluding the data,
- 7.1.6 The results of daily SO₂, NO_x, or CO CEMS drift tests and accuracy assessments as required in 40 CFR Part 60 Appendix F,
- 7.1.7 The results of all applicable performance tests conducted to determine compliance with the mass particulate matter and hydrogen chloride standards, and
- 7.1.8 Beginning the month after the date of the initial compliance tests, the amount (by weight) of medical waste received and combusted on a monthly basis at the affected facility.
- 7.2 If processed MSW or RDF is combusted in a unit, the recordkeeping requirements of Regulation 7.76 regarding material separation shall apply for the portion of the waste that is processed MSW or RDF.
- 7.3 The owner or operator of an affected facility shall submit the initial performance test data, the performance evaluation of the CEMS using the applicable performance specifications in 40 CFR Part 60 Appendix B, and the maximum unit load within 60 days of completing the tests but no later than 180 days after the initial start up.
- 7.4 The owner or operator of an affected facility shall submit quarterly compliance reports to the District containing the information recorded under Section 7 for all records required by this regulation that are applicable to the facility.
 - 7.4.1 The owner or operator required to install a CEMS shall submit for each calendar quarter a written report of excess emissions (as defined in this regulation) to the District, in a printed report and a computer disc, formatted as specified by the District. All quarterly reports shall be postmarked by the 30th day following the end of each quarter and shall include the following information:
 - 7.4.1.1 The magnitude of excess emissions computed in accordance with the applicable section of this regulation, any conversion factors used, and the date and time of commencement and completion of each time period of excess emissions,
 - 7.4.1.2 All hourly averages shall be reported for SO₂ and NO_x monitors,
 - 7.4.1.3 Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. For each malfunction, the nature and cause (if known), the corrective action taken, and preventative measures adopted,
 - 7.4.1.4 The date and time identifying, and the duration of, each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments, and
 - 7.4.1.5 When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, this information shall be stated in the report.
- 7.5 Records of CEMS, steam flow, and temperature data shall be maintained for at least 3 years after the date of recording and shall be available for inspection upon request.
- 7.6 Records showing the names of persons who have completed review of the operating manual

and the documentation required by section 5.4, including the date of the initial review and all subsequent annual reviews, shall be maintained for at least 3 years after the date of manual review and shall be made available for inspection upon request.

- 7.7 A description of the procedures employed for ensuring that unprocessed MSW or RDF is not combusted in an affected facility shall be maintained along with associated records to demonstrate use of the procedures, and shall be made available for inspection upon request.
- 7.8 Documentation demonstrating that ash disposal from an affected facility complies with section 4.7 and has been submitted to the Kentucky Division of Waste Management in a frequency required by the Kentucky Division of Waste Management shall be maintained for at least 3 years and made available for inspection upon request.

Adopted v1/10-20-93; effective 10-20-93, v2/3-17-99.

REGULATION 7.79 Standards of Performance for New Commercial Motor Vehicle and Mobile Equipment Refinishing Operations

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all needful orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of Volatile Organic Compound (VOC) emissions from new commercial motor vehicle and mobile equipment refinishing operations.

SECTION 1 Applicability

This regulation applies to new existing commercial facilities making spot repairs, panel repairs, refinishing of parts and/or the refinishing of the entire motor vehicle or mobile equipment. It is in effect for all facilities built on or after the date of adoption.

SECTION 2 Definitions

Terms used in this regulation not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Adhesion promoter" means a coating used to promote adhesion of a topcoat on surfaces such as trim moldings, door locks, door sills, or any coating which provides adhesion to plastic substrates, where sanding is not practical.
- 2.2 "Aerosol coating products" means a mixture of resins, pigments, liquid solvents and gaseous propellants, packaged in a disposable can for small, hand-held spraying applications.
- 2.3 "Basecoat" means a pigmented topcoat which is the first topcoat applied as part of a multiple stage topcoat system.
- 2.4 "Basecoat/clearcoat system" means a topcoat system composed of a pigmented basecoat portion and a transparent and clear overcoat portion.
- 2.5 "Capture system" means the equipment including, but not limited to, booths, ducts, dryers or ovens, fans, and hoods that contains, collects, and transports an air pollutant to a control device.
- 2.6 "Catalyst" means a substance whose presence enhances the reaction between chemical compounds.
- 2.7 "Chemical Abstract Service (CAS) registration number" means that unique identification number, usually three parts, given to each chemical product or component by the Chemical Abstract Service.
- 2.8 "Clearcoat" means a topcoat which contains no pigments or only transparent pigments and which is the final topcoat applied as a part of a multiple stage topcoat system.
- 2.9 "Color match" means the ability of a repair coating to blend into an existing coating so that color difference is not visible.
- 2.10 "Excluded VOC" means any of the compounds expressly excluded from the definition of volatile organic compound in Regulation 1.02.
- 2.11 "Elastomeric material" means topcoats and primers that are specifically formulated for application over flexible parts such as filler panels and elastomeric bumpers.

- 2.12 "Electrostatic application" means the application of charged atomized paint droplets which are deposited by electrostatic attraction.
- 2.13 "Extreme performance coating" means any coating used on the surface of a motor vehicle, mobile equipment or their parts or components which, during intended use, is exposed to either of the following conditions:
 - 2.13.1 Industrial grade detergents, cleaners or abrasive scouring agents, or
 - 2.13.2 Extreme environmental conditions during the vehicle's principle use.
- 2.14 "Graphic design application" means the application of logos, letters lines, stripes numbers and/or other graphics to a painted surface, with or without the use of a template.
- 2.15 "Ground support vehicles" means vehicles used in support of aircraft activities at airports.
- 2.16 "Group I vehicles and equipment" means passenger cars, large- sized truck cabs and chassis, light and medium duty trucks and vans, motor homes, recreational vehicles and motorcycles.
- 2.17 "Group II vehicles" means buses and mobile equipment.
- 2.18 "High-volume, low pressure (HVLP) spray" means equipment used to apply coatings by means of a spray gun which typically operates at less than 10 psig applied air pressure.
- 2.19 "Material Safety Data Sheet" (MSDS) means the chemical, physical, technical and safety information document supplied by the manufacturer of the coating, solvent or other chemical product, usually through his distribution network or retailers.
- 2.20 "Metallic/iridescent topcoat" means any coating which contains more than 5 g/l (0.042 lb/gal) of metal or iridescent particles, as applied, where such particles are visible in the dried coating.
- 2.21 "Midcoat" means a semi-transparent topcoat which is a middle topcoat applied as part of a multiple topcoat system.
- 2.22 "Mobile equipment" means any equipment which may be drawn or is capable of being driven on a roadway, including but not limited to: truck bodies, truck trailers, cargo vaults, utility bodies, camper shells, construction equipment (mobile cranes, bulldozers, concrete mixers), farming equipment (tractors, plows, pesticide sprayers), and miscellaneous equipment (street cleaners, golf carts, ground support vehicles, tow motors, fork lifts).
- 2.23 "Multiple stage topcoat system" means any basecoat/clearcoat topcoat system or any three-stage or more topcoat system manufactured as a system, and used as specified by the manufacturer.
- 2.24 "Panel" means a complete section (e.g., hood, door), which typically is approximately nine square feet.
- 2.25 "Precoat" means any coating which is applied to bare metal primarily to deactivate the metal surface for corrosion resistance to a subsequent water-base primer.
- 2.26 "Pretreatment wash primer" means any coating which contains a minimum of 0.5% acid by weight, as necessary to provide surface etching and is applied directly to bare metal surfaces to provide corrosion resistance and adhesion.
- 2.27 "Primer" means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and adhesion of the topcoat.
- 2.28 "Primer sealer" means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, color uniformity and to promote the ability of an undercoat to resist penetration by the topcoat.
- 2.29 "Primer surfacer" means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, and which promotes a uniform surface by filling in surface imperfections.

- 2.30 "Reducer" means the solvent used to thin enamel.
- 2.31 "Refinishing" means any coating of vehicles, their parts and components, or mobile equipment, including partial body collision repairs, for the purpose of protection or beautification and which is subsequent to the original coating applied at a manufacturing plant coating line.
- 2.32 "Specialty coating" means any coating which is necessary due to unusual job performance requirements. The coating includes, but is not limited to: weld-through primer, adhesion promoter, uniform finish blender, elastomeric material, gloss flattener, bright metal trim repair, antiglare coating, and safety related coating.
- 2.33 "Spot/panel repair" means the non assembly line process of repairing and restoring a portion of a motor vehicle or mobile equipment to predamaged condition.
- 2.34 "Three-stage coating system" means a topcoat system composed of a pigmented basecoat portion, a semi-transparent midcoat portion, and a transparent clearcoat portion.
- 2.35 "Topcoat" means any coating applied over a primer or an original finish for the purpose of protection or appearance. For the purpose of this regulation, basecoat/clearcoat and multiple-stage coating systems shall be considered topcoats.
- 2.36 "Touch-up coating" means any coating applied by brush and, in some limited cases, by aerosol spray to repair minor surface damage or imperfections.
- 2.37 "Transfer efficiency" means the ratio of the amount of coating solids adhering to the object being coated to the total amount of coating solids used in the application process, expressed as a percentage.
- 2.38 "Truck" means a motor vehicle designed, used, or maintained primarily for the transportation of property.
- 2.39 "Large-sized truck" means a truck having a manufacturer's gross vehicle weight rating of more than 8500 pounds.
- 2.40 "Small-sized truck" means any motor vehicle having a manufacturer's gross vehicle weight rating at 8500 pounds or less and which is designed primarily for the purposes of transportation of property or is a derivative of such vehicle, or is available with special features enabling on-street or off-highway operation and use.
- 2.41 "Van" means a closed truck for carrying property or persons.
- 2.42 "Volatile Organic Compound" (VOC) means any organic compound which would be emitted during use, application, curing or drying of a solvent or surface coating. Some organic compounds are not considered to be ozone precursors and shall not be considered a part of the coating or solvent for this regulation. Regulation 1.02 identifies these excluded VOCs.
- 2.43 "Waterborne primer" means any primer using water as the primary solids suspension agent, usually containing 2.5 lbs/gal or less of VOC, as applied.

SECTION 3 Exemptions

The following activities are exempted from this regulation:

- 3.1 Application of aerosol coating products,
- 3.2 Graphic designs such as the application of letters, lines, logos, numbers, striping, etc. covering less than 10% of the total painted surface of the vehicle,
- 3.3 Original Equipment Manufacturer (OEM) coatings applied at manufacturing or assembly plants which are subject to Regulations 6.36, 7.02 or 40 CFR Part 60 Subpart MM,
- 3.4 Touch-up operations involving the application of very small quantities of coatings, usually by brush,

- 3.5 Application of waterborne coatings of less than two lbs/gal of VOC, as applied, and
- 3.6 Small facilities that perform minimal coating operations and meet all of the following limitations. These limitations must be met on a weekly basis where a time period is shown:
 - 3.6.1 Not more than one complete motor vehicle or mobile equipment per week shall be refinished,
 - 3.6.2 Not more than five panel or spot repair jobs per week shall be performed, and
 - 3.6.3 No visible emissions shall leave the applicator's property.
- 3.7 An exemption pursuant to this section does not constitute an exemption from any other regulation.

SECTION 4 Standards for VOC

Any person applying coatings to Group I or Group II vehicles and equipment, including parts and components, repairing of partial collision damage or refinishing entire motor vehicles or mobile equipment, shall not apply materials that have a VOC content which exceeds the limits in sections 4.1 and 4.2. Compliance with the VOC limits shall be based on VOC content, including any VOC material added to the original coating supplied by the manufacturer, less water and exempt solvent, as applied to the coated surface. Appendix A provides equations to calculate VOC content of coatings and compound coatings.

- 4.1 Group I Vehicles: Group I vehicles, their parts and components, whether existing or replacement parts, shall not be refinished with a coating which has a VOC content in excess of the limits in sections 4.1.1, or 4.1.2.
 - 4.1.1 No coatings shall be used with a VOC content in excess of the following limits, expressed as pounds of VOC per gallon of coating, as applied, unless the conditions of section 4.3 are met:

Coating	VOC lb/gal
Surface Cleaner	2.0
Pretreatment wash primer	6.5
Precoat	5.5
Primer/primer surfacer	6.0
Primer sealer	6.5
Topcoat	6.5
Metallic/iridescent topcoat	6.5
Extreme performance	6.5

- 4.1.2 Effective May 1, 1995, no coating shall be used with a VOC content in excess of the following limits, expressed as pounds of VOC per gallon of coating as applied, unless the conditions of section 4.3 are met:

Coating	VOC lb/gal
Surface Cleaner	1.7
Pretreatment wash primer	6.5
Precoat	5.5
Primer/primer surfacer	4.8
Primer sealer	4.6
Topcoat	5.2
Metallic/iridescent topcoat	5.2
Extreme performance	6.2

4.2 Group II Vehicles: Group II vehicles, or their existing parts and components, or replacement parts or components, shall not be refinished with a coating which has a VOC content in excess of the limits in sections 4.2.1 and 4.2.2.

4.2.1 No coating shall be used with a VOC content in excess of the following limits, expressed as pounds of VOC per gallon of coating as applied, unless the conditions of section 4.3 are met:

Coating	VOC lb/gal
Surface Cleaner	2.0
Pretreatment wash primer	6.5
Precoat	5.5
Primer/primer surfacer	6.0
Primer sealer	6.5
Topcoat	6.5
Metallic/iridescent topcoat	6.5
Extreme performance	6.5

4.2.2 Effective May 1, 1995, no coatings shall be used which have a VOC content in excess the following limits, expressed as pounds of VOC per gallon of coating as applied, unless the conditions of section 4.3 are met:

Coating	VOC lb/gal
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Surface Cleaner	1.7
Pretreatment wash primer	6.5
Precoat	5.5
Primer/primer surfacer	2.8
Primer sealer	3.5
Topcoat	3.5
Metallic/iridescent topcoat	3.5
Extreme performance	6.2

- 4.3 The limitations of VOC content in sections 4.1 and 4.2 shall not be exceeded unless:
 - 4.3.1 Emissions are controlled to an equivalent level by air pollution control equipment,
 - 4.3.2 The efficiency of the control equipment is a minimum of 85%, and
 - 4.3.3 The control equipment has been approved by the District and permits issued.
- 4.4 Specialty coatings shall not be applied unless:
 - 4.4.1 The VOC content is equal to or less than seven pounds of VOC per gallon of coating as applied, and
 - 4.4.2 The application of all such coatings, except safety related coatings, shall not exceed 10% of all coatings applied on a weekly basis.

SECTION 5 Equipment Standards

All spray coating operators that coat more than one complete motor vehicle or mobile equipment per week or perform more than five panel or spot repairs per week shall perform those operations using the following equipment:

- 5.1 Spraying operations shall be performed in a totally enclosed spray booth or a totally enclosed spray area which provides, as a minimum:
 - 5.1.1 A series of exhaust filters, wet or dry, that have a 90% particulate control efficiency, and
 - 5.1.2 Proper maintenance of the equipment in accordance with the manufacturer's recommendations or, in the absence of the above, reasonable care.
- 5.2 Effective May 1, 1995, spraying equipment shall have a minimum transfer efficiency of 65% at eight inches from the work surface. Compliance may be achieved by any of the following:
 - 5.2.1 Electrostatic application equipment operated and maintained in accordance with the manufacturer's recommendations,
 - 5.2.2 HVLP spray equipment operated and maintained in accordance with the manufacturer's recommendations, or
 - 5.2.3 Any other coating application equipment which has been satisfactorily demonstrated to be capable of achieving a minimum of 65% efficiency and approved by the District.
- 5.3 VOC pollution control equipment, if required for compliance with Section 4, shall be appropriately installed, maintained and operated in accordance with the manufacturer's recommendations. The minimum efficiency of the control device shall be 85%.
- 5.4 Spray and other equipment cleanup shall be accomplished in a totally enclosed apparatus specifically designed to minimize evaporation of VOC materials to the atmosphere.

Non-enclosed gun cleaners, etc. may be used provided that the vapor pressure of the cleaning solvent is less than 100 mmHg at 68 °F and the used solvent is contained for subsequent disposal by authorized means.

SECTION 6 Prohibitions

- 6.1 No person shall specify or require for use the application of any coating if such use results in a violation of this regulation. This prohibition is applicable to all contracts wherein a coating is to be applied at any location within Jefferson County, KY. This prohibition shall not apply if the coating is to be utilized at surface coating facilities where control equipment has been installed meeting the requirements of section 5.3.
- 6.2 No person shall sell within Jefferson County, KY any coating if such product exceeds any of the provisions of this regulation or would exceed any provision as typically applied. This prohibition is applicable to the sale of any coating which is to be applied at any location within Jefferson County. This prohibition shall not apply if the coating is to be utilized at surface coating facilities where control equipment has been installed meeting the requirements of section 5.3.
- 6.3 Cleaning of equipment by spraying solvent through the spray gun with no reasonable attempt to reclaim the used solvent is prohibited.

SECTION 7 Operating Requirements

The owner/operator shall implement good housekeeping practices which include, but are not limited to, the following:

- 7.1 All equipment shall be maintained in accordance with the manufacturer's recommendations,
- 7.2 All fresh or used solvents shall be stored in closed containers,
- 7.3 All waste coatings, used automotive fluids, spray booth filters, etc. shall be stored in closed containers prior to disposal by authorized means, and
- 7.4 Storage of cloth or paper products used for solvent surface preparation and cleanup shall be stored in closed containers prior to disposal by authorized means.
- 7.5 A person using pressure pots shall use either:
 - 7.5.1 Bag-type liners to aid cleanup and minimize cleaning solvent use,
 - 7.5.2 Insert containers to aid cleanup and minimize cleaning solvent use, or
 - 7.5.3 Other reasonable practices to reduce the amount of cleaning solvent used.
- 7.5 Equipment cleanup shall be performed with appropriate methods to minimize the use of solvents. Reasonable effort must be made to reclaim the bulk of the used solvents. Absolutely no cleaning shall be effected by the direct spraying of solvent into the atmosphere.
- 7.6 Personnel performing spraying operations must be trained to properly position a spray gun to minimize overspray.
- 7.7 Reasonable effort shall be employed to schedule operations of a similar nature to significantly reduce overall VOC material consumption.

SECTION 8 Reporting and Recordkeeping Requirements

Any person subject to this regulation shall comply with the following requirements as a minimum.

- 8.1 A current list of all coatings, solvents, reducers, additives, and any other VOC containing material in use at the facility shall be maintained and readily available upon request. This list shall include, but is not limited to, the following information:
 - 8.1.1 Name and appropriate identification of coating, catalyst, hardener, reducer, etc. used,

- 8.1.2 Mix ratio of components used, and
- 8.1.3 VOC content of coating, as applied, less water and excluded solvents, in pounds per gallon.
- 8.2 Daily records shall be maintained which shall include:
 - 8.2.1 Identification of applied coatings pursuant to section 8.1.1, and
 - 8.2.2 Quantity of each coating applied.
- 8.3 Monthly records shall be maintained which shall include:
 - 8.3.1 Type of solvent used for cleanup and/or surface preparation, and
 - 8.3.2 Quantity of each solvent, cleaner, etc. used.
- 8.4 MSDS or other data sheets provided by the material manufacturer and/or its agent shall be maintained and readily retrievable for each item listed pursuant to section 8.1.1 and shall include as a minimum:
 - 8.4.1 Designation of VOC content as supplied, expressed in lbs/gal, less water and excluded VOC solvents,
 - 8.4.2 Designation of all hazardous and/or toxic components. Designation shall include, as a minimum: the CAS registration number of the component; the weight percent of the component; and the weight of the product, expressed in lbs/gal, or alternately, the specific gravity of the product, and
 - 8.4.3 Other pertinent physical and chemical data.
- 8.5 Records specified in this section shall be retained and readily available for inspection by EPA; the Cabinet; the District; and other responsible parties commencing upon adoption of this regulation and maintained for five years.

Adopted v1/2-2-94; effective 2-2-94.

Appendix A to Regulation 7.79

Standards of Performance for New Commercial Motor Vehicle and Mobile Equipment Refinishing Operations

VOC content shall be given and/or calculated in lbs/gal.

Calculation 1:

The VOC content of a basecoat/topcoat system shall be calculated according to the following equation:

$$VOC_{ms} = \frac{VOC_{bc} + 2VOC_{cc}}{3}$$

where:

- VOC_{ms} = the composite VOC content, less water and less exempt compounds, to be used for compliance determination under the multistage topcoat system coating category.
- VOC_{bc} = the VOC content, less water and less exempt compounds as applied, of any given basecoat.
- VOC_{cc} = the VOC content, less water and less exempt compounds as applied, of any given clearcoat.

Calculation 2:

The VOC content per gallon of any coating, less water and less exempt compounds, shall be calculated by the following equation:

$$Content = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

where:

Pounds of VOC per gallon of coating, less water and less exempt compounds is the weight of VOC per combined volume of VOC and coating solids.

- W_s = weight of volatile compounds in pounds.
- W_w = weight of water in pounds.
- W_{es} = weight of exempt compounds in pounds.
- V_m = volume of material in gallons.
- V_w = volume of water in gallons.
- V_{es} = volume of exempt compounds in gallons.

Calculation 3:

The VOC content of any coating shall be calculated by the following equation:

$$Content = \frac{W_s - W_w - W_{es}}{V_m}$$

where:

- W_s = weight of volatile compounds in pounds.
- W_w = weight of water in pounds.
- W_{es} = weight of exempt compounds in pounds.
- V_m = volume of material in gallons.

Calculation 4:

The VOC content of a three-stage topcoat system shall be calculated according to the equation:

$$VOC_{ms} = \frac{VOC_{bc} + VOC_{mc} + 2VOC_{cc}}{4}$$

where:

A three-stage coating system is a topcoat system composed of a basecoat portion, a midcoat portion, and a transparent clearcoat portion.

- VOC_{ms} = the composite VOC content, less water and less exempt compounds, to be used for compliance determination under the multistage topcoat system coating category.
- VOC_{bc} = the VOC content, less water and less exempt compounds as applied, of any given basecoat.
- VOC_{mc} = the VOC content, less water and less exempt compounds as applied, of any given midcoat.
- VOC_{cc} = the VOC content, less water and less exempt compounds as applied, of any given clearcoat.

REGULATION 7.80 Standards of Performance for New Solid Waste Landfills
REPEALED - Superseded by Regulation 7.02

Air Pollution Control District of Jefferson County
Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 provides that the Air Pollution Control Board may make and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the control of volatile organic compound emissions from new solid waste landfills.

Adopted v1/2-2-94; effective 2-2-94; repealed 4-15-98.

REGULATION 7.81 Standard of Performance for New or Modified Bakery Oven Operations

Air Pollution Control District of Jefferson County Jefferson County, Kentucky

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation provides for the quantification and control of volatile organic compound (VOC) emissions from new or modified bakery ovens.

SECTION 1 Definitions

Terms used in this regulation that are not defined in this regulation shall have the meaning given them in Regulation 1.02 *Definitions*.

- 1.1 "Affected facility" means a bakery oven that bakes yeast-leavened pan bread, rolls, buns, or similar products. An affected facility does not include a bakery oven that exclusively bakes the following exempt products: crackers, pretzels, sweet goods, muffins, croutons, breadsticks, similar baked foodstuffs that are not yeast-leavened, or products that are leavened chemically in the absence of yeast.
- 1.2 "Leaven" means to raise a dough by causing gas to permeate it.
- 1.3 "Spike" means an additional amount of yeast added upon the dough side.
- 1.4 "Spike time" means the time period over which spiking is accomplished.
- 1.5 "Yeast percentage" means the weight ratio of yeast to total recipe flour.

SECTION 2 Applicability

This regulation applies to new or modified affected facilities that commenced operation or had a construction permit issued on or after July 19, 1995. If 1 or more new or modified affected facilities at a stationary source are subject to the requirements of Sections 3, 4, and 5, then each new or modified affected facility at the stationary source is always subject to those requirements unless the affected facility exclusively bakes exempt products or the process of the affected facility is changed to a process that is not subject to this regulation.

SECTION 3 Standard for Control of VOC Emissions from New or Modified Bakery Ovens

A person who owns or operates 1 or more new or modified affected facilities at the same stationary source that in total emit more than 150 pounds of VOC per day as calculated according to the methods in Section 6 shall either:

- 3.1 Reduce VOC emissions to less than or equal to 150 pounds per day, or
- 3.2 Reduce VOC emissions by at least 85% by weight, based on overall control efficiency.

SECTION 4 Methods for Control of VOC Emissions from New or Modified Bakery Ovens

Compliance with Section 3 may be accomplished by using add-on control devices, process modification, or any combination of these. This may be accomplished either by conventional or alternative technology. All compliance methods are subject to prior approval by the District. Alternative control technology or alternative process technology shall be evaluated on a case-by-case basis and shall be demonstrated to the District's satisfaction to achieve the required control efficiency.

SECTION 5 Testing Requirements

- 5.1 The owner or operator of an affected facility who installs a control device shall perform a stack test using either Method 25A of 40 CFR Part 60 Appendix A or another test method approved by the District and shall submit test reports to the District within 180 days after start up of the control device.
- 5.2 The owner or operator of an affected facility who performs a stack test shall provide the District with at least a 30-day prior notice of the planned performance test.
- 5.3 The owner or operator of an affected facility shall submit a test protocol to the District for approval within 7 working days prior to the test notification.
- 5.4 The owner or operator of an affected facility shall notify the District within 5 working days of the initial start up of the affected facility.

SECTION 6 Methods for Calculating VOC Emissions from Bakery Ovens

The total VOC emissions from affected facilities shall be calculated by using the following emission factor equations:

- 6.1 For products made with yeast spike, the formula is:

$$\text{E.F.} = 0.95Y_i + 0.195T_i - 0.51S - 0.86T_s + 1.90$$

where:

E.F. = pounds VOC per ton of baked product.

Y_i = initial baker's percent of yeast to the nearest tenth of a percent, expressed in decimal form (e.g., 3.2% is expressed as 0.032).

T_i = total yeast action time in hours to the nearest tenth of an hour.

S = final (spike) baker's percent of yeast to the nearest tenth of a percent, expressed in decimal form.

T_s = spiking time in hours to the nearest tenth of an hour.

- 6.2 For products made with no final yeast spike, the formula is:

$$\text{E.F.} = 0.95Y_i + 0.195T_i + 1.90$$

- 6.3 For daily VOC emissions in pounds per day, the formula is:

$$\text{Emissions} = \text{E.F.} \times \text{BP}$$

where:

E.F. = pounds VOC per ton of baked product.

BP = product production in tons per day.

SECTION 7 Exemptions

If all new or modified affected facilities at the same stationary source emit in total less than or equal to 150 pounds of VOC per day, then they are exempt from the requirements of Sections 3, 4, and 5.

SECTION 8 Recordkeeping Requirements

An owner or operator of 1 or more new or modified bakery ovens subject to this regulation shall maintain daily production records of non-exempt products baked. These records shall include the type of product baked, the amount of raw material processed, the initial and final yeast percentage, the total yeast action time, and the total daily VOC emissions. The owner or operator shall use the formula in Section 6 in order to calculate the total daily VOC emissions. Each record shall be maintained for a minimum of 5 years and made available to the District upon request.

Adopted v1/7-19-95; effective 7-19-95; amended v2/5-17-00.

**REGULATION 7.82 Federal Acid Rain Program for New Sources Incorporated by Reference
REPEALED**

**Air Pollution Control District of Jefferson County
Jefferson County, Kentucky**

Relates To: KRS Chapter 77 Air Pollution Control

Pursuant To: KRS Chapter 77 Air Pollution Control

Necessity and Function: KRS 77.180 authorizes the Air Pollution Control Board to adopt and enforce all orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation incorporates by reference the Federal Acid Rain Program of the Clean Air Act for new, reconstructed, and modified sources and affected facilities.

Adopted v1/12-21-94; effective 12-21-94, amended v2/6-21-95, v3/11-19-97; repealed 3-15-00.