

PART 6

STANDARDS OF PERFORMANCE FOR EXISTING AFFECTED FACILITIES

REGULATION 6.01 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 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 establishes the general provisions for the application of standards of performance for existing affected facilities.

SECTION 1 Applicability

Unless specifically exempted in Regulation 2.03, this regulation applies to any affected facility not permitted under Regulation 7.

SECTION 2 Permits Required

All affected facilities under this regulation must have permits issued pursuant to Regulation 2.

SECTION 3 Reporting Requirements

The District may require the owner or operator to provide reports on emissions, equipment status, process information, in-stack emission monitoring, stack testing, fuels data and other relevant areas relating to permitted affected facilities in accordance with Regulation 2 and this regulation.

SECTION 4 Performance Tests

The District may require affected facilities under this regulation to perform testing in accordance with Regulation 1.04.

- 4.1 The owner or operator of affected facilities under this regulation shall conduct performance tests according to Regulation 1.04 and shall furnish the District a written report of the results of the performance tests when the affected facility is operating under a compliance plan and schedule. Such testing may be either during or after completion of the compliance plan and schedule as required by the District.
- 4.2 The following affected facilities are exempt from section 4.1:
 - 4.2.1 Process operations with a process weight rate of less than 100 tons per hour;
 - 4.2.2 Indirect heat exchangers of less than 250 million BTU per hour heat input;
 - 4.2.3 Incinerators with charging rates of 45 metric tons per day or less; and
 - 4.2.4 Affected facilities in Regulations 6.13, 6.15, 6.16, 6.17, 6.18, 6.19, 6.20, 6.23, 6.24, 6.26, 6.29, 6.30, 6.31, 6.32, 6.33, 6.34, or 6.35.

4.3 The District may require the owner or operator of any affected facility, including those in section 4.2, to conduct performance tests according to Regulation 1.04 and furnish written results of the tests.

Adopted v1/4-19-72; effective 4-19-72; amended v2/9-1-76, v3/6-13-79, v4/11-16-83.

REGULATION 6.02 Emission Monitoring for Existing Sources

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 establishes the procedures for emission monitoring for existing sources.

SECTION 1

This regulation defines the minimum requirements for continuous emission monitoring, recording, and reporting for source categories which are set forth. It includes the performance specifications for accuracy, reliability, and durability of acceptable monitoring systems and techniques to convert emission data to units of applicable emission standards. This regulation applies to source categories which were in being or had a construction permit issued by the District on or before June 29, 1979. The owner or operator of a source in a category listed below shall:

- 1.1 Install, calibrate, operate and maintain all monitoring equipment necessary for continuously monitoring the pollutants specified in this section for the applicable source category; and
- 1.2 Complete the installation and performance tests of such equipment and begin monitoring and recording by January 1, 1981.
- 1.3 For continuous emission monitoring systems for which there are no performance specifications under 40 CFR Part 60 Appendix B, complete the installation and performance tests of such equipment and begin monitoring and recording within 18 months of promulgation of the applicable performance specifications of 40 CFR Part 60 Appendix B.

SECTION 2

The source categories and the respective monitoring requirements are listed below:

- 2.1 Indirect heat exchangers, as specified in section 6.1, shall be monitored for opacity, sulfur dioxide emissions, and oxygen or carbon dioxide.
- 2.2 Petroleum refinery affected facilities, as specified in section 6.2, shall be monitored as specified in section 6.2.
- 2.3 Incinerators, as specified in section 6.3, shall be monitored for opacity.
- 2.4 Control devices, as specified in section 6.4, shall be monitored for opacity.

SECTION 3 Exemption

Sources which are scheduled for retirement within five years after June 29, 1979 are exempt from this regulation, provided that adequate evidence and guarantees are submitted that clearly show that the source will cease operating on or before that date.

SECTION 4 Extensions

Reasonable extensions of the time provided for installation of monitors may be allowed for sources unable to meet the time-frame prescribed in section 1.2 provided the owner or operator of such facility demonstrates that good faith efforts have been made to obtain and install the devices within the prescribed time-frame.

SECTION 5 Monitoring Systems Malfunctions

The District may provide a temporary exemption from the monitoring and reporting requirements of this regulation during any period of monitoring system malfunction, provided that the source owner or operator shows, to the District's satisfaction, that the malfunction was unavoidable and is being repaired as expeditiously as practicable.

SECTION 6 Monitoring Requirements

- 6.1 Each indirect heat exchanger, except as provided in the following sections, with an annual average capacity factor of greater than 30% as demonstrated to the District by the owner or operator, shall conform with the following monitoring requirements when such facility is subject to an emission standard for the pollutant in question. (Annual average capacity factor means the ratio of the actual annual heat input to the potential annual heat input based on rated capacity.)
 - 6.1.1 A continuous monitoring system for the measurement of opacity which meets the appropriate performance specification as specified in section 7 shall be installed, calibrated, maintained, and operated in accordance with the procedures of this section by the owner or operator of any such indirect heat exchanger of greater than 250 million BTU per hour heat input except where: gaseous fuel is the only fuel burned, or oil or a mixture of gas and oil are the only fuels burned and the source is able to comply with the applicable particulate matter and opacity standards without utilization of particulate matter collection equipment, and where the source has never been found, through any administrative or judicial proceedings, to be in violation of any visible emission standard.
 - 6.1.2 A continuous monitoring system for the measurement of sulfur dioxide which meets the appropriate performance specifications in section 7 shall be installed, calibrated, maintained, and operated on any indirect heat exchangers (except where natural gas or wood waste is burned) of greater than 250 million BTU per hour heat input.
 - 6.1.3 A continuous monitoring system for the measurement of the percent oxygen or carbon dioxide which meets the appropriate performance specifications in section 7 shall be installed, calibrated, operated, and maintained on indirect heat exchangers where measurements of oxygen or carbon dioxide in the flue gas are required to convert either sulfur dioxide or nitrogen oxides continuous emission monitoring data, or both, to units of the emission standard.
- 6.2 Petroleum Refineries. The owner or operator of each affected facility specified in this section shall install, calibrate, maintain, and operate continuous monitoring equipment as follows:
 - 6.2.1 Fluid bed catalytic cracking unit catalyst regenerators at petroleum refineries. Each catalyst regenerator for fluid bed cracking units of greater than 8,000 barrels per day fresh feed capacity shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of opacity that meets the appropriate performance specifications in section 7.

- 6.2.2 A continuous monitoring system for the measurement of sulfur dioxide in the gases discharged into the atmosphere from the combustion of fuel gases subject to Regulation 6.10 that meets the appropriate performance specifications in section 7 (except where a continuous monitoring system for the measurement of hydrogen sulfide is installed under section 6.2.3). The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 of 40 CFR Part 60 Section 2.1 and for the calibration checks shall be sulfur dioxide. The span shall be set at 100 ppm. For conducting monitoring system performance evaluations, Reference Method 6 shall be used.
- 6.2.3 An instrument for continuously monitoring and recording concentrations of hydrogen sulfide in fuel gases burned in any fuel gas combustion device subject to Regulation 6.10 that meets the appropriate performance specifications in section 7, if compliance is achieved by removing hydrogen sulfide from the fuel gas before it is burned; fuel gas combustion devices having a common source of fuel gas may be monitored at one location, if monitoring at this location accurately represents the concentration of hydrogen sulfide in the fuel gas burned. The span of the continuous monitoring shall be 300 ppm.
- 6.2.4 An instrument for continuously monitoring and recording concentrations of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to Regulation 6.10 that meets the appropriate performance specifications in section 7, if compliance is achieved through the use of an oxidation control system or a reduction control system followed by incineration. The span of this continuous monitoring system shall be set at 500 ppm.
- 6.2.5 Instruments for continuously monitoring and recording the concentration of hydrogen sulfide and reduced sulfur compounds in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to Regulation 6.10 that meet the appropriate performance specifications in section 7, if compliance is achieved through the use of a reduction control system and followed by incineration. The spans of this continuous monitoring system shall be set at 20 ppm for monitoring and recording the concentration of hydrogen sulfide and 600 ppm for monitoring and recording the concentration of reduced sulfur compounds.
- 6.2.6 An instrument for continuously monitoring and recording the concentration of sulfur dioxide in gases discharged into the atmosphere from fluid catalytic cracking unit catalyst regenerator subject to Regulation 6.10 that meets the appropriate performance specifications in section 7. The span of this continuous monitoring system shall be 1,500 ppm.
- 6.3 Incinerators. Each incinerator with a charging capacity of more than 45 metric tons per day (50 tons/day) shall install, calibrate, maintain, and operate a continuous monitoring system for opacity which meets the specifications in section 7.
- 6.4 Each control device with a concentrated discharge associated with the affected facilities subject to Regulation 6.11 shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity which meet the appropriate performance specifications in section 7.

SECTION 7

Except as provided in section 8, all owners or operators who are required to comply with this regulation shall demonstrate compliance with the following performance specifications of 40 CFR Part 60 Appendix B:

- 7.1 Continuous monitoring systems for measuring opacity shall comply with Performance Specification 1.
- 7.2 Continuous monitoring systems for measuring sulfur dioxide shall comply with Performance Specification 2.
- 7.3 Continuous monitoring systems for measuring nitrogen oxides shall comply with Performance Specification 2.
- 7.4 Continuous monitoring systems for measuring oxygen shall comply with Performance Specification 3.
- 7.5 Continuous monitoring systems for measuring carbon dioxide shall comply with Performance Specification 3.

SECTION 8

An owner or operator who, prior to September 11, 1974, entered into a binding contractual obligation to purchase continuous monitoring system components or who installed continuous monitoring equipment prior to October 6, 1975 shall comply with the following requirements:

- 8.1 Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within 20% with a confidence level of 95%. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 of 40 CFR Part 60 Appendix B shall be used for demonstrating compliance with this specification;
- 8.2 Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within 20% with a confidence level of 95%. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calculation procedures set forth in 40 CFR Part 60 Appendix B shall be used for demonstrating compliance with this specification;
- 8.3 Owners or operators of all continuous monitoring systems installed on an affected facility prior to October 6, 1975, may be required to conduct tests under sections 8.1 and/or 8.2 if requested by the District;
- 8.4 All continuous monitoring systems referenced by this section shall be upgraded or replaced (if necessary) with new continuous monitoring systems, and the new or improved systems shall be demonstrated to comply with applicable performance specifications within five years of June 29, 1979.

SECTION 9 Calibration Gases

For sulfur dioxide monitoring systems installed on indirect heat exchangers the pollutant gas used to prepare calibration gas mixtures (40 CFR Part 60 Appendix B Section 2.1 Performance Specification 2) shall be sulfur dioxide. This gas shall also be used for daily checks under section 13 as applicable. Span and zero gases certified by their manufacturer to be traceable to National Bureau of Standards reference gases shall be used whenever these reference gases are available. Every six months from dates of manufacture, span and zero gases shall be re-analyzed by conducting triplicate analyses using the reference methods in 40 CFR Part 60 Appendix A as follows: for sulfur dioxide, use Reference Method 6, for nitrogen dioxide use Reference Method 7, and for carbon dioxide and oxygen use Reference Method 3.

SECTION 10 Cycling Times

Cycling times include the total time a monitoring system requires to sample, analyze, and record an emission measurement.

- 10.1 Continuous monitoring systems for measuring opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive ten second period.
- 10.2 Continuous monitoring systems for measuring oxides of nitrogen, carbon dioxide, oxygen, or sulfur dioxide shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15 minute period.

SECTION 11 Monitor Location

A continuous monitoring device shall be installed such that representative measurements of emissions or process parameters (i.e., oxygen or carbon dioxide) from the affected facility are obtained. Additional guidance for location of continuous monitoring systems to obtain representative samples are contained in the applicable Performance Specifications of 40 CFR Part 60 Appendix B.

SECTION 12 Combined Effluents

When the effluents from two or more affected facilities of similar design and operating characteristics are combined before being released to the atmosphere, the District may allow monitoring systems to be installed on the combined effluent. When the affected facilities are not of similar design and operating characteristics, or when the effluent from one affected facility is released to the atmosphere through more than one point, the District shall establish alternate procedures to implement the intent of these requirements.

SECTION 13 Zero and Span Drift

Owners or operators of all continuous monitoring systems installed in accordance with the requirements of this section shall record the zero and span drift in accordance with the method prescribed by the manufacturer of such instruments; shall subject the instruments to the manufacturer's recommended zero and span check at least once daily unless the manufacturer has recommended adjustments at shorter intervals, in which case the recommendations shall be followed; shall adjust the zero and span whenever the 24 hour zero drift or 24 hour calibration drift limits of the applicable performance specifications in 40 CFR Part 60 Appendix B are exceeded; and to adjust continuous monitoring systems referenced by section 8 whenever the 24 hour zero drift or 24 hour calibration drift exceeds 10% of the emission standard.

SECTION 14 Span

Instrument span should be approximately 200% of the expected instrument data display output corresponding to the emission standard of the source.

SECTION 15 Alternate Procedures and Requirements

The District may allow equivalent procedures and requirements that have been approved by EPA for continuous monitoring systems under the following conditions:

- 15.1 Alternate monitoring requirements to accommodate continuous monitoring systems that require corrections for stack moisture conditions (e.g., an instrument measuring oxygen concentration on a dry basis if acceptable methods of measuring stack moisture conditions are used to allow accurate adjustments of the measured sulfur dioxide concentration to a dry basis).
- 15.2 Alternate locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate to the satisfaction of the District that installation at alternate locations will enable accurate and representative measurements.
- 15.3 Alternative procedures for performing calibration checks (e.g., some instruments may demonstrate superior drift characteristics that require checking at less frequent intervals).
- 15.4 Alternative monitoring requirements when the effluent from two or more identical affected facilities is released to the atmosphere through more than one point (e.g., an extractive, gaseous monitoring system used at several points may be approved if the procedures recommended are suitable for generating accurate emission averages).
- 15.5 Alternate continuous monitoring systems that do not meet the spectral response requirements in 40 CFR Part 60 Appendix B Performance Specification 1, but adequately demonstrate a definite and consistent relationship between their measurements and the opacity measurements of a system complying with the requirements in Performance Specification 1. The District may require that such demonstration be performed for each affected facility.

SECTION 16 Minimum Data Requirements

The following sections set forth the minimum data reporting requirements. Both a printed summary and computer tape or cards shall be furnished in the format specified by the District.

- 16.1 Owners or operators of facilities required to install continuous monitoring systems shall submit for every calendar quarter, a written report of excess emissions and the nature and cause of the excess emissions if known. The averaging period used for data reporting should correspond to the averaging period specified in the emission test method used to determine compliance with an emission standard for the pollutant/source category in question. The required report shall include, as a minimum, the data stipulated in this section. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.
- 16.2 For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of six-minute averages of opacity greater than the opacity standard in the applicable standard for each hour of operation of the facility. Average values may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four equally spaced, instantaneous opacity measurements per minute. Any time period exempted shall be considered before determining the excess average of opacity (e.g., whenever a regulation allows two minutes of opacity measurements in excess of the standard, the source shall report all opacity averages, in any one hour, in excess of the standard minus the

two-minute exemption). If more than one opacity standard applies, excess emissions data must be submitted in relation to all such standards. Opacity data need be reported on computer cards or tape only.

- 16.3 For gaseous measurements the summary shall consist of hourly averages in the units of the applicable standard. The hourly averages shall not appear in the written summary, but shall be made available from the computer tape or cards.
- 16.4 The data and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustment shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.
- 16.5 When no excess emissions have occurred and the continuous monitoring systems have been inoperative, repaired, or adjusted, such information shall be included in the report.
- 16.6 Owners or operators of affected facilities shall maintain a file of all information reported in the quarterly summaries, and all other data collected either by the continuous monitoring system or as necessary to convert monitoring data to the units of the applicable standard for a minimum of two years from the date of collection of such data or submission of such summaries.

SECTION 17

Owners or operators of affected facilities shall use the following procedures for converting monitoring data to units of the standard where necessary:

- 17.1 For indirect heat exchangers the following procedures shall be used to convert gaseous emission monitoring data in parts per million to g/million cal (1b/million BTU) where necessary:
 - 17.1.1 When the owner or operator of an indirect heat exchanger elects under section 6.1.3 to measure oxygen in the flue gases, the measurements of the pollutant concentration and oxygen shall each be on a dry basis and converted per the following equation:

$$E = \frac{20.9CF}{20.9 - \%O_2}$$

where:

- E = pollutant emission, g/million cal (1b/million BTU).
- C = pollutant concentration, g/dscm (1b/dscf), determined by multiplying the average concentration (ppm) for each hourly period by 4.16×10^{-5} g/dscm per ppm (2.64×10^{-9} M 1b/dscf per ppm) where M = pollutant molecular weight, g/g-mole (1b/1b-mole). M = 64 for sulfur dioxide and 46 for oxides of nitrogen.
- F = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F). Values of "F" are given in Regulation 7.06.
- $\%O_2$ = Oxygen volume (expressed as percent).

- 17.1.2 When the owner or operator elects under section 6.1.3 to measure carbon dioxide in the flue gases, the measurement of the pollutant concentration and the carbon dioxide concentration shall each be on a consistent basis (wet or dry) and converted per the following equation:

$$E = \frac{100CFc}{\%CO_2}$$

where:

- E = pollutant emission, g/million cal (1b/million BTU).
 - C = pollutant concentration, g/dscm (1b/dscf), determined by multiplying the average concentration (ppm) for each hourly period by 4.16×10^{-5} M g/dscm per ppm (2.64×10^{-9} M lb/dscf per pmm) where M = pollutant molecular weight, g/g-mole (lb/lb-mole). M = 64 for sulfur dioxide and 46 for oxides of nitrogen.
 - Fc = a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc) respectively. Values of Fc are given in Regulation 7.06.
 - %CO₂ = carbon dioxide volume (expressed as percent).
- 17.2 The District may allow data reporting or reduction procedures varying from those set forth in this regulation if the owner or operator of a source shows to the satisfaction of the District that his procedures are at least as accurate as those in this section. Such procedures may include but are not limited to the following:
- 17.2.1 Alternative procedures for computing emission averages that do not require integration of data (e.g., some facilities may demonstrate that the variability of their emissions is sufficiently small to allow accurate reduction of data based upon computing averages from equally spaced data points over the averaging period).
 - 17.2.2 Alternative methods of converting pollutant concentration measurements to the units of the emission standards.

SECTION 18 Special Consideration

The District may provide for approval, on a case-by-case basis, of alternative monitoring requirements different from the provisions of this regulation if the provisions of this regulation (i.e., the installation of a continuous emission monitoring system) cannot be implemented by a source due to physical plant limitations or extreme economic reasons. In such cases, when the District exempts any source subject to this regulation by use of this provision from installing continuous emission monitoring systems, the District shall set forth alternative emission monitoring and reporting requirements (e.g., periodic manual stack tests) to satisfy the intent of these regulations. Examples of such special cases include, but are not limited to, the following:

- 18.1 Alternate monitoring requirements may be prescribed when installation of a continuous monitoring system or monitoring device specified by this regulation would not provide accurate determinations of emissions.
- 18.2 Alternate monitoring requirements may be prescribed when the affected facility is infrequently operated.

- 18.3 Alternative monitoring requirements may be prescribed when the District deems that the requirements of this regulation impose an extreme economic burden on the source owner or operator. The burden of proof for an alleged "economic burden" is to be borne by the source.
- 18.4 Alternative monitoring requirements may be prescribed when the District deems that monitoring systems prescribed by this regulation cannot be installed due to physical limitations at the facility.

Adopted v1/4-19-72; effective 4-19-72; amended v2/11-16-83.

REGULATION 6.07 Standards of Performance for Existing 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 indirect heat exchangers.

SECTION 1 Applicability

This regulation applies to each indirect heat exchanger of 1 million or more BTU per hour heat input which was in being or under construction before April 19, 1972. The combined total heat input capacity of all affected facilities subject to this regulation shall be used to determine the total allowable emissions from a source regardless of boiler or stack configuration.

SECTION 2 Definitions

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

2.1 "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.

SECTION 3 Standard For Particulate Matter

3.1 No owner or operator subject to this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of the quantity specified in Table 1.

3.2 No owner or operator subject to this regulation shall cause the emission into the open air of particulate matter from any indirect heat exchanger which is greater than 20% opacity.

3.3 Section 3.2 shall not apply to:

3.3.1 Emissions into the open air of particulate matter from any indirect heat exchanger during building a new fire, cleaning the fire box, or blowing soot for a period or periods aggregating not more than ten minutes in any 60 minutes which are less than 40% opacity;

3.3.2 Emissions from waterwall spreader-stoker indirect heat exchangers during startup operations if the emissions do not exceed the following limits:

3.3.2.1 First 30 minutes - 80% opacity;

3.3.2.2 Next hour - 60% opacity; and

3.3.2.3 Next 2½ hours - 40% opacity.

3.3.3 Emissions up to 40% opacity from all other waterwall indirect heat exchangers for any 30-minute period during startup operations.

SECTION 4 Standard for Sulfur Dioxide

4.1 No owner or operator subject to this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of the weights listed in Table 2.

4.2 When different fuels are burned simultaneously in any combination, the applicable standard shall be determined by proration using the following formula:

$$\text{Allowable sulfur dioxide emission in pounds per million BTU per hour heat input} = \frac{ya + zb}{y + z}$$

where:

y = the percent of total heat input derived from liquid fuel.

a = the allowable sulfur dioxide emission in pounds per million BTU heat input derived from liquid 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.

4.3 Compliance shall be based on the total heat input from all fuels burned, including gaseous fuels.

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

Table 1 To Regulation 6.07

Allowable Particulate Emission Rates

Heat Input MM Btu/Hour	Maximum Particulate Emission Rates Pounds per Million Btu Input
10 or less	0.56
50	0.38
100	0.33
250	0.26
500	0.22
1,000	0.19
2,500	0.15
5,000	0.13
7,500	0.12
10,000 or more	0.11

Interpolation of allowable emissions for intermediate heat input values not specified above may be accomplished by use of the equation shown below for the appropriate fuel and heat input range specified. In all equations X = millions of BTU per hour heat input and Y = allowable particulate emissions in pounds per million BTU heat input.

$$Y = 0.9634 X^{-0.2356}$$

Table 2 To Regulation 6.07

**Allowable Sulfur Dioxide Emissions
Based On Heat Input Capacity**

MM Btu/Hour Heat Input	Pounds SO₂ per Million Btu Heat Input	
	Liquid or Gaseous Fuel	Solid Fuel
10 or less	1.0	4.0
50	1.0	2.2
100	1.0	1.7
150	1.0	1.4
200	0.9	1.3
250 or more	0.8	1.2

Interpolation of allowable emissions for intermediate heat input values not specified in the table may be accomplished by use of the following equations for appropriate fuel and heat input specified:

Liquid or Gaseous Fuel: $Y = 7.722 X^{-0.4106}$

Solid Fuel: $Y = 9.46 X^{-0.3740}$

where:

Y = allowable sulfur dioxide emissions in pounds per million BTU per hour heat input.

X = millions of BTU per hour heat input capacity rating.

REGULATION 6.08 Standard of Performance for Existing 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 existing incinerators.

SECTION 1 Applicability

This regulation applies to each incinerator in being or under construction before April 19, 1972, which is the affected facility.

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 materials but which is never in contact with the waste material.
- 2.2 "Day" means 24 hours.

SECTION 3 Standard for Particulate Matter

- 3.1 No owner or operator of an incinerator 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 (0.2 gr/dscf) corrected to 12% CO₂ excluding the contribution of CO₂ from auxiliary fuel.
- 3.2 No owner or operator of an incinerator shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter of greater than 20% opacity.

SECTION 4 Record Keeping

The owner or operator of any incinerator of more than 45 metric tons per day charging rate (50 tons per day) subject to this regulation shall record the daily charging rates and hours of operation.

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

REGULATION 6.09 Standards of Performance for Existing 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 emissions from existing process operations.

SECTION 1 Applicability

- 1.1 This regulation applies to each process operation that is the affected facility not otherwise regulated by any other portion of Regulation 6 and that was in existence or had a construction permit issued by the District on or before September 1, 1976.
- 1.2 Emissions of particulate matter that do not exit through a control device or stack are subject to Regulation 1.14 *Control of Fugitive Particulate Emissions*.

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 emission shall apply.
- 2.6 "Reasonably Available Control Technology" (RACT) means, as approved by the District on

a case-by-case basis, the lowest emission limit that a source is capable of meeting using control equipment or operational practices that are available to the source, taking into consideration technological and economic feasibility.

SECTION 3 Standard for Particulate Matter

No owner or operator subject to this regulation 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 Is equal to or greater than 20% opacity, or,
- 3.2 Is in excess of the quantity specified in Table 1.
- 3.3 Opacity Standard
 - 3.3.1 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.
- 3.4 Mass Emission Standard
 - For emissions from a control device or stack, no person shall cause, suffer, allow, or permit the emission into the open air of particulate matter from any affected facility that is in excess of the quantity specified in Table 1.
- 3.5 An affected facility may elect to substitute the following standards in lieu of the value given in Table 1:
 - 3.5.1 A maximum exit particulate emission concentration of 0.02 grains per standard cubic foot, and
 - 3.5.2 Air pollution control equipment of at least 97% actual efficiency.
 - 3.5.3 Addition of dilution air shall not constitute compliance.
- 3.6 Fugitive emissions of particulate matter from any affected facility shall be subject to RACT requirements as set forth in conditions appearing on the operating permits.
 - 3.6.1 The process weight rate entry to be used in Table 1 for duplicate operations is the total or combined process weight rate of all the individual component operations.
 - 3.6.2 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 individual stack.
- P_t = Total process weight rate for the duplicate operation.

- 3.6.3 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 subject to this regulation 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 NO₂, or

4.2 An invisible discharge.

SECTION 5 Test Methods and Procedures

Performance tests used to demonstrate compliance with this regulation shall be conducted according to Regulation 1.04 *Performance Tests*.

Adopted v1/4-19-72; effective 4-19-72; amended v2/9-1-76, v3/6-13-79, v4/11-28-79, v5/11-16-83, v6/3-17-99.

**Table 1 To Regulation 6.09
 Allowable Rate Of Particulate Emission
 Based on Process Weight for Existing Affected Facilities**

Process Weight Rate		Maximum Allowable Emission Rate
Lb/Hr.	Tons/Hr.	Lb/Hr.
≤ 1,000	≤ 0.50	2.58
1,500	0.75	3.38
2,000	1.00	4.10
2,500	1.25	4.76
3,000	1.50	5.38
3,500	1.75	5.96
4,000	2.00	6.52
5,000	2.50	7.58
6,000	3.00	8.56
7,000	3.50	9.49
8,000	4.00	10.4
9,000	4.50	11.2
10,000	5.00	12.0
12,000	6.00	13.6
16,000	8.00	16.5
18,000	9.00	17.9
20,000	10.00	19.2
30,000	15.00	25.2
40,000	20.00	30.5
50,000	25.00	35.4
60,000	30.00	40.0
70,000	35.00	41.3
80,000	40.00	42.5
90,000	45.00	43.6
100,000	50.00	44.6
120,000	60.00	46.3
140,000	70.00	47.8
160,000	80.00	49.1
200,000	100.00	51.3
1,000,000	500.00	69.0
2,000,000	1,000.00	77.6
6,000,000	3,000.00	92.7

Interpolation of the data for process weight rates up to 30.0 tons/hr shall be accomplished by use of the equation

$$E = 4.10 P^{0.67}$$

and interpolation and extrapolation of the data for process weight rates in excess of 30.0 tons/hr shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40$$

where:

- E = rate of emission in lb/hr.
- P = process weight in tons/hr.

REGULATION 6.10 Standard of Performance for Existing 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 from process gas streams at existing facilities.

SECTION 1 Applicability

This regulation applies to petroleum refineries, by-product coke plants, and any other processes which were in being or under construction before 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" means any gas generated by or employed in a process operation or process unit not specifically defined elsewhere within these regulations.

SECTION 3 Standard for Hydrogen Sulfide

No owner or operator subject to this regulation shall cause the emission of H₂S in a process gas stream to exceed ten grains per 100 dry standard cubic feet of gas at 0% oxygen.

SECTION 4 Standard for Sulfur Dioxide

No owner or operator subject to this regulation shall cause the emission of SO₂ in a process gas stream to exceed 2000 parts per million by volume at 0% oxygen.

SECTION 5 Standard for Carbon Monoxide

No owner or operator subject to this regulation shall cause the emission of carbon monoxide in a process gas stream unless the gases are burned at 1300 °F for 0.5 seconds or greater in a direct flame afterburner or equivalent device equipped with an indicating pyrometer which is positioned in the working area at the operator's eye level.

SECTION 6 Test Methods and Procedures

Except as provided in Regulation 1.04, performance tests used to demonstrate compliance with sections 3 and 4 shall be conducted according to the following methods described in 40 CFR Part 60:

6.1 Reference Method 11 for hydrogen sulfide. The sample shall be drawn from a point near the centroid of the gas line. The minimum sampling time shall be ten minutes and the minimum sample volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute one run. Samples shall be taken at approximately one hour intervals.

- 6.2 Reference Method 6 for sulfur dioxide. Reference Method 1 shall be used for velocity traverses and Reference Method 2 for determining velocity and volumetric flow rate. The sampling site for determining SO₂ concentration by Reference Method 6 shall be the same as for determining the volumetric flow rate by Reference Method 2. The sampling point in the duct for determining SO₂ concentration by Reference Method 6 shall be at the centroid of the cross section or at a point no closer to the walls than one meter (39 inches) if the cross-sectional area is five square meters or more and the centroid is more than one meter from the wall. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. The minimum sampling time shall be ten minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two samples shall constitute one run. Three runs will constitute one compliance test. Samples shall be taken at approximately one hour intervals.

SECTION 7 Compliance Schedule

The owner or operator of an affected facility not in compliance as of June 13, 1979, the adopted date, shall be required to:

- 7.1 Submit a control plan for achieving compliance no later than September 1, 1979.
- 7.2 Award control system contract no later than October 1, 1979.
- 7.3 Initiate on-site construction by March 1, 1980.
- 7.4 Complete construction of control system by October 1, 1980.
- 7.5 Achieve final compliance by December 1, 1980.

Adopted v1/4-19-72; effective 4-19-72; amended v2/9-1-76, v3/6-13-79, v4/11-28-79, v5/11-16-83.

REGULATION 6.11 Standards of Performance for Existing Iron and Steel 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 existing iron and steel plants.

SECTION 1 Applicability

This section applies to each basic oxygen process furnace or grey iron cupola and associated metallurgical and dust handling equipment that was in being or had a construction permit issued by the District on or before 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 "Basic Oxygen Process Furnace" (BOPF) means any furnace producing steel by charging scrap steel, hot metal, and flux materials into a vessel and introducing a high volume of oxygen-rich gas.
- 2.2 "Steel Production Cycle" means the operations required to produce each batch of steel and includes the following major functions: scrap charging preheating (when used), hot metal charging, primary oxygen blowing, additional oxygen blowing (when used), and tapping.

SECTION 3 Standard for Particulate Matter

No owner or operator subject to this regulation shall cause the emission of particulate matter in excess of .048 grains per dry standard cubic foot or exceed 20% opacity.

SECTION 4 Standard for Carbon Monoxide

No owner or operator subject to this section shall emit the carbon monoxide gases generated during the operation of any grey iron cupola, blast furnace, or basic oxygen steel furnace unless the gases pass through a chamber containing a continuously burning pilot light.

Adopted v1/4-19-72; effective 4-19-72; amended v2/7-14-76.

REGULATION 6.12 Standard of Performance for Existing 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 existing asphalt paving operations.

SECTION 1 Applicability

This regulation applies to all asphalt paving operations, except as provided in Section 4, that were in being or had a construction permit issued by the District before the effective date of this 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 in which the predominating constituents are bitumens which occur in nature as such or which are obtained as residue in refining petroleum.
- 2.2 "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.
- 2.3 "Cutback asphalt" means asphalt cement which has been liquified by blending with volatile organic compounds. Upon exposure to atmospheric conditions, the volatile organic compounds evaporate, leaving the asphalt cement to perform its function.
- 2.4 "Emulsified asphalt" means an emulsion of asphalt cement, volatile organic compounds, and water which contains a small amount of an emulsifying agent.
- 2.5 "Maintenance operation" means patching of holes and breaks in pavement as necessary for safety.
- 2.6 "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.
- 2.7 "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 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 4.

SECTION 4 Exemptions

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

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

SECTION 5 Recordkeeping Requirements

5.1 The manufacturer of cutback or emulsified asphalt shall maintain a current record in a format approved by the District of each batch of cutback or emulsified asphalt produced. The record shall contain the following information as a minimum:

- 5.1.1 The calendar date that the batch was produced;
 - 5.1.2 The quantity in tons produced;
 - 5.1.3 The customer's name and address to where the cutback or emulsified asphalt was sent; and
 - 5.1.4 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.
- 5.2 The record required in section 5.1 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.

Adopted v1/4-19-72; effective 4-19-72; amended v2/9-1-76, v3/4-20-88, v4/5-15-91.

REGULATION 6.13 Standard of Performance for Existing 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 existing storage vessels.

SECTION 1 Applicability

This regulation applies to each affected facility which means each storage vessel for volatile organic compounds that was in being or had a construction permit issued by the District before September 1, 1976, was not subject to Regulation 7.12, and that 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 primary seal mounted so that the bottom of the seal covers the liquid surface between the tank shell and the floating roof.
- 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 non-metallic 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 volatile organic compounds 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 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.
- 2.10 True vapor pressure" means the equilibrium partial pressure exerted by a volatile organic compound 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 primary seal mounted so that there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank shell, the liquid surface, and the floating roof.
- 2.12 "Vapor recovery system" means a vapor gathering system capable of collecting all volatile organic compounds discharged from the storage vessel and a vapor disposal system capable of processing such volatile organic compounds so as to prevent no less than 85% of the 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 volatile organic compounds 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 volatile organic compounds 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 equivalent.
- 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 volatile organic compounds 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 volatile organic compound, as stored, is equal to or greater than 1.5 psia, as a minimum it shall be equipped with a permanent submerged fill pipe. Storage vessels under this section are exempt from the requirements of Sections 4 and 5. 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; and
- 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; and
 - 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 will 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:

- 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; and
- 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.

Adopted v1/4-19-72; effective 4-19-72; amended v2/10-17-72, v3/9-1-76, v4/2-19-86, v5/4-20-88, v6/5-15-91.

REGULATION 6.14 Standard of Performance for Selected Existing 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 control of emissions from existing petroleum refining process and equipment.

SECTION 1 Applicability

This regulation applies to each affected facility which was in being or had a construction permit issued by the District before 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 of 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.
- 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 five 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,
 - 4.1.3 Record the approximate total quantity of hydrocarbons emitted to the atmosphere, and
 - 4.1.4 Retain these records for at least two years and submit them to the District upon request.

SECTION 5 Compliance Time Table

The owner or operator of an affected facility shall be required to complete the following:

- 5.1 Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.
- 5.2 Award the control device contract no later than December 1, 1979.
- 5.3 Initiate on-site construction or installation of emissions control equipment no later than July 1, 1980.
- 5.4 On-site construction or installation of emission control equipment shall be completed no later than February 1, 1981.
- 5.5 Final compliance shall be achieved no later than May 1, 1981.

Adopted v1/4-19-72; effective 4-19-72; amended v2/9-1-76, v3/6-13-79, v4/5-20-81, v5/4-21-82.

REGULATION 6.15 Standards of Performance for Gasoline Transfer to Existing 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 section applies to the transfer of volatile organic compounds from transport vehicle tanks into storage tanks at service stations and the equipment involved therein. Owner/Operators of service stations and transporters of fuels must comply 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 two 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 one-half to three-quarter 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 0.5 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 percent 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. Also the vapor balance system must be operating in accordance with the manufacturer's specifications.
- 3.5 Truck tank hatch openings for the purpose of visual inspection are 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 are equipped with vapor-tight covers including gaskets;
 - 3.8.2 All dry breaks have vapor-tight seals and are equipped with vapor-tight covers or dust covers;
 - 3.8.3 All vapor return passages are operated so there is 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 are equipped with vapor-tight covers, including gaskets; and
 - 3.8.5 All hoses, fittings, and couplings are in a vapor-tight condition.

SECTION 4 Service Station Tank Construction Permitting

When the owner or operator of an existing service station causes or allows excavation to begin at a service station for the purpose of adding or replacing an underground gasoline storage tank or tanks, this event will constitute the commencement of reconstruction of the affected facility. When an owner or operator of an existing 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 a service station for the purpose of transferring gasoline into vehicle fuel tanks, this event will constitute the commencement of reconstruction 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 reconstruction project. The service station thereafter will be considered a new affected facility subject to Regulation 7.

SECTION 5 Equipment Changes

When the owner or operator of a service station chooses to replace, add, or change any of the required equipment including, but not limited to, vent line restrictions, drop tubes and submerged fill tubes, the owner or operator must notify the District in writing prior to installation. This will not constitute a construction or reconstruction.

SECTION 6 Compliance Timetable

All service stations that have had an annual gasoline throughput of 100,000 gallons per year or more for any year since 1978 should already be equipped to comply and all controls should be operational and should be utilized. All service stations that have annual gasoline throughput for any year since 1978, as listed below, shall be equipped according to the requirements of this regulation. This equipment shall be maintained in good operating order and utilized at all times after the dates listed below:

Gallons Throughput per year	Compliance required on and after
80,000	May 15, 1988
50,000	May 15, 1989
20,000	May 15, 1990
10,000	May 15, 1991

Adopted v1/6-13-79; effective 6-13-79; amended v2/11-16-83, v3/1-20-88, v4/8-17-88.

REGULATION 6.16 Standard of Performance for Existing Large Appliance 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 surface coating operations at large appliance manufacturing facilities.

SECTION 1 Applicability

This regulation applies to each affected facility which was in being or had a construction permit issued by the District before the effective date of this regulation. Any source that is ever subject to this regulation shall 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 "Affected facility" means a coating line for large appliances including but not limited to: doors, cases, lids, panels, and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dish washers, trash compactors, and air conditioners.
- 2.2 "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping or spraying.
- 2.3 "Coating line" means a series of one or more coating applicators and any associated flash off 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 flash off 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 operations including flash off area operation, oven drying, baking, curing, and polymerization;
 - 2.3.5 Clean up operations;
 - 2.3.6 Leaks, spills and disposal of volatile organic compounds; and
 - 2.3.7 Processing and handling of recovered volatile organic compounds.
- 2.4 "Flash off area" means the space between the applicator and the oven.
- 2.5 "Prime coat" means the first film of coating applied in a multi-coat operation.

- 2.6 "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.
- 2.7 "Single coat" means a single film coating applied directly to the metal substance omitting the prime coat.
- 2.8 "Topcoat" means the final film of coating applied in a two-coat operation or the coatings which are applied after the prime coat in a multi-coat operation.
- 2.9 "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 emissions 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 input into the affected facility unless said person has qualified for an exemption pursuant to section 5.

SECTION 4 Compliance

- 4.1 In all cases, the design of any control device 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 which the District determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined by the District based upon an engineering analysis 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 requested by the District, performance tests as specified by the District shall be conducted in order to determine the efficiency of the control system or any part of the system. The control system capture efficiency shall be measured according to methods specified in Regulation 1.05 section 2.
- 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 by the District, the District shall obtain samples of the coating used at an affected facility to verify that the coating meets the requirements in section 5. EPA reference Method 24 shall be used to determine the VOC content of coatings.

SECTION 5 Exemptions

- 5.1 Any affected facility shall be exempt from the provisions of section 3 if the VOC content of the coatings is less than 0.34 kilograms per liter of coating (2.8 pounds per gallon), excluding water and exempt solvents, delivered to the applicators associated with the prime, single or topcoat coating line.
- 5.2 Repair coating operations for the purpose of repairing scratches and nicks that occur during assembly shall be exempt from the provision of section 3.

5.3 No owner or operator of a large appliance surface coatings line subject to this section shall apply coatings 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.

5.3.1 The daily weighted average VOC content, which means the VOC content of two or more coatings as applied on a coatings 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:

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

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.

n = The number of different coatings as applied each day on a coating line.

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.

V_t = The total volume of all coatings as applied each day on a coating line in units of liters (gallons), minus water and exempt solvents.

5.4 The exemptions specified in this section may be achieved by the use of a low solvent coating as defined in section 5.1.

SECTION 6 Recordkeeping

6.1 Effective May 15, 1991, an owner or operator of a stationary source subject to this rule shall maintain daily records of operations. These records shall accumulate for two years and shall then be reduced to the most recent running two year period. The records shall be made available to the District, State air pollution control agency, 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 graphic arts material used at each point of application, including 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 The oven temperature when an oven is part of the coating line.

- 6.2 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; 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.
 - 6.3.4 When a source utilizes add-on controls, compliance shall be determined by using EPA Method 25.

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

REGULATION 6.17 Standard of Performance for Existing Automobile and Truck 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 surface coating operations at automobile and truck manufacturing facilities.

SECTION 1 Applicability

This regulation applies to each existing auto and truck manufacturing facility which was in being or had a construction permit issued by the District before 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 them in Regulation 1.02.

- 2.1 "Affected facility" means a coating line for automobile and truck interior and exterior surfaces including, but not limited to, hoods, fenders, cargo boxes, doors, grill opening panels, engine compartment, all or portions of the passenger compartment, and trunk interior.
- 2.2 "Analytical VOC content" means all volatile organic compounds, excluding water and exempt solvents, that are in a coating expressed as kilograms (or pounds) of VOC per liter (or gallon) of coating as determined by EPA Method 24.
- 2.3 "Anti-chip coatings" as applied to automobile and truck components such as rocker panels, the bottom edge of doors and fenders and frontal surfaces, are considered primer surfaces.
- 2.4 "Applicator" means the mechanism or device used to apply the coating including, but not limited to, dipping and spraying.
- 2.5 "Applied coating solids" means the volume of dried or cured coating solids which is deposited and remains on the surface of the automobile or truck.
- 2.6 "As applied" means including dilution solvents added before application of the coating.
- 2.7 "Automobile" means all passenger cars or passenger car derivatives capable of seating 12 or fewer passengers.
- 2.8 "Coating" means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealants, adhesives, inks, maskants, and temporary protective coatings. Coating may refer to more than one coating which serves the same basic function (e.g. prime, surfacer, topcoat).
- 2.9 "Coating line" means a series of one or more coating applicators and any associated flash off 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 flash off area in order to be included in this definition.
- 2.10 "Electrophoretic deposition" (EDP) means a process of applying a coating by dipping the component in a coating bath with an electrical potential difference between the component and the bath.
- 2.11 "Final repair operation" means the application areas, flash off areas, and ovens used to apply and dry or cure coatings that are used to repair topcoat on fully assembled automobiles and truck bodies.
- 2.12 "Flash-off area" means the space between the application area and the oven.
- 2.13 "Formula VOC content" means all VOCs excluding water and exempt solvents that are in a coating expressed as kilograms (or pounds) of VOC per liter (or gallon) of coating as manufactured, excluding cure volatiles.
- 2.14 "Prime coat coating line" means a coating line for the first of two or more coatings applied to automobile or truck bodies.
- 2.15 "Primer surfacer operation" means the application areas, flash off areas, and ovens that are used to apply and dry or cure a primer surfacer on components of automobile and truck bodies, The Primer surfacer is also referred to as a "guidecoat".
- 2.16 "Primer surfacer" or "guidecoat" means a surface coating between the prime coat and topcoat.
- 2.17 "Process storage" means mixing tanks, holding tanks, drums, or other containers which contain surface coatings, VOCs or recovered VOCs, but does not mean storage tanks which are subject to Regulation 6.13.
- 2.18 "Surface coating operation" means any prime coat, guide coat, or topcoat operation on an automobile or truck surface coating line.
- 2.19 "Topcoat" means the final coating on components of automobile and truck bodies.
- 2.20 "Topcoat operation" means the application areas, flash off areas, and ovens used to apply and dry or cure topcoat on components of automobile and truck bodies.
- 2.21 "Transfer efficiency" means the ratio of the amount of coating solids transferred onto the surface of a part or product to the total amount of coating solids used.
- 2.22 "Truck" means a motor vehicle regardless of size or weight classification designed primarily for transportation of payloads or property consisting of, but not limited to, 13 or more passengers, cargo, recreational, or commercial equipment. This excludes motor vehicles designed principally for off-road construction use.
- 2.23 "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 the standards listed below:

- 3.1 Prime coating line: 0.17 kg/l (1.4 lbs/gal) of coating, excluding water and exempt solvents, which shall be applied by electrophoretic deposition (EDP) when the solids turnover ratio (R_T) is 0.16 or greater. R_T shall be calculated as follows:

$$Rt = \frac{T_v}{L_E}$$

where:

T_V = total volume of coating solids that is added to the EDP system in a calendar month (liters).

L_E = volume design capacity of the EDP system (liters).

- 3.1.1 When R_T , calculated according to the equation in section 3.1, is less than 0.160 but equal to or greater than 0.040, the standard for prime coat applied by EDP shall be determined by the following formula:

$$0.17 \times 350 (0.160 - R_T) \text{ kg/l.}$$

- 3.1.2 When R_T , calculated according to the equation in section 3.1 is less than 0.040 for any EDP prime coat operation, there is no emission limit. When R_T is less than 0.040, the owner or operator shall comply with the recordkeeping and reporting requirements in section 6.

- 3.2 Primer surfacer coating line: 1.8 kg VOC/l (15.1 lb VOC/gal) of applied coating solids, excluding water and exempt solvents;

- 3.3 Topcoat coating line: 11.3 lb VOC/gal of applied coating solids, excluding water and exempt solvents; or

- 3.4 Final repair coating line: 4.8 lb/gal of coating as applied, excluding water and exempt solvents.

- 3.5 Application to metal parts of underbody antichip coatings (e.g., underbody plastisol) and coatings other than prime, primer surfacer, topcoat and final repair shall be subject to the requirements of Regulation 6.31.

SECTION 4 Compliance

- 4.1 In all cases, the design of any control device is subject to approval by the District.

- 4.2 Any affected facility subject to the provisions of section 3 shall calculate a daily volume-weighted average of the coatings used in the particular coating line involved. If such average meets the applicable standard, then the coating line will be considered in compliance. Compliance with limits applicable to primer surfacer and topcoat coating lines shall be determined using procedures described in "Protocol for Determining the Daily VOC Emission Rate of Automobile and Light-Truck Topcoat Operation", EPA 450/3-88-018, December, 1988, (Protocol).

- 4.3 The standards specified in this section may be achieved by:

- 4.3.1 The use of a low solvent coating; or
- 4.3.2 Any other emission reduction process or equipment shown to be as effective. However, another equivalent emission reduction process or equipment may require federal approval pursuant to Regulation 1.08.
- 4.4 Capture efficiency shall be measured according to the method in Regulation 1.05.
- 4.5 EPA Method 24 shall be the method for determining the amount of VOC in the coating.
- 4.6 Test Methods and Compliance Procedures: Alternative Compliance Methods for Surface Coating.
- 4.6.1 Daily-weighted average; the daily-weighted average VOC content, in units of mass of VOC per unit volume of coating, excluding water and exempt compounds, as applied, of the coatings used in a day on a coating line or operation shall be calculated using the following equation:

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

where:

- VOC_w = The daily-weighted average VOC content of the coating, as applied, used on a coating line or operation in units kg VOC/l of coating or lb VOC/gal of coating, excluding water and exempt compounds.
- n = The number of different coatings, as applied, each day on a coating line or operation.
- V_i = The volume of each coating, as applied, each day on a coating line or operation in units of l (gal), excluding water and exempt compounds.
- C_i = The VOC content of each coating, as applied, each day on a coating line or operation in units of kg VOC/l of coating (lb VOC/gal), excluding water and exempt compounds.
- V_t = The total volume of all coating, as applied, each day on a coating line or operation in units of l (gal), excluding water and exempt compounds.
- 4.7 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 3.

SECTION 5 Compliance Timetable

Any owner or operator of an affected facility not in compliance with this regulation shall achieve compliance by December 31, 1993.

SECTION 6 Recordkeeping and Reporting

- 6.1 An owner or operator of a stationary source using coatings or solvents, and subject to this rule shall maintain daily records of operations for the most recent three year period. The records shall be made available to the District, State air pollution control agency, or EPA upon request. The records shall include, but not be limited to, the following:
 - 6.1.1 The coating line, the amount and type of coatings (including catalyst and reducer for multicomponent coatings), solvent, and/or exempt compounds used daily for final repair and used monthly for topcoat and primer surfacer;

- 6.1.2 The VOC content as applied in each coating and solvent, as determined by EPA Methods 24 and 25 in accordance with the Protocol;
- 6.1.3 The date that coating and solvent is poured;
- 6.1.4 Daily production records indicating the type and color of vehicles produced;
- 6.1.5 The analytical VOC content shall be calculated using EPA Method 24;
- 6.1.6 For each day, the total volume of coating solids that is added to the EDP system; and
- 6.1.7 For each month, calculations of R_T using the equation in section 3.1.
- 6.2 When a source utilizes add-on controls, compliance shall be determined by using EPA Method 25 or 25a, as appropriate for the concentration of the VOC. However, in determining incinerator efficiency, both the inlet and outlet VOC concentration shall be determined using EPA Method 25a.
- 6.3 Daily compliance for topcoat, primer surfacer, and EDP shall be calculated monthly from these records using the procedures contained in the Protocol and section 4 where appropriate.
- 6.4 Any instance of noncompliance with the emission limits in section 3 as determined in accordance with section 4 shall be reported to the District, in writing, within 30 calendar days of the compliance reporting period.

Adopted v1/6-13-79; effective 6-13-79; amended v2/6-15-83, v3/4-20-88, v4/7-15-92, v5/11-18-92.

REGULATION 6.18 Standards of Performance for Solvent Metal Cleaning 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 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 solvent metal cleaning equipment.

SECTION 1 Definitions

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

- 1.1 "Affected facility" means cold cleaners, open top vapor degreasers, and conveyORIZED degreasers that use volatile organic compounds (VOCs) to remove soluble impurities from metal surfaces.
- 1.2 "Cold cleaner" means a batch-loaded degreaser whose solvent is kept below its boiling point.
- 1.3 "Conveyorized degreaser" means a degreaser that is continuously loaded by means of a conveyor system. Its solvent may be boiling or non-boiling.
- 1.4 "Freeboard height" means the following:
 - 1.4.1 For a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank,
 - 1.4.2 For a vapor degreaser, the distance from the solvent vapor level in the tank to the lip of the tank,
 - 1.4.3 For a vapor conveyorized degreaser, the distance from the vapor level to the bottom of the entrance or exit opening, whichever is lower, and
 - 1.4.4 For a cold conveyorized degreaser, the distance from the liquid solvent level to the bottom of the entrance or exit opening, whichever is lower.
- 1.5 "Freeboard ratio" means the freeboard height divided by the width of the degreaser.
- 1.6 "Open top vapor degreaser" means a batch-loaded degreaser whose solvent is heated to its boiling point creating a solvent vapor zone.
- 1.7 "Refrigerated chiller" means a second set of freeboard condenser coils that create a cold air blanket above the vapor zone and are located slightly above the primary condenser coils.
- 1.8 "Solvent" means VOCs.

SECTION 2 Applicability

This regulation applies to each affected facility. Any affected facility that is ever subject to this regulation shall always be subject to it unless the process of the affected facility is changed to a process that is not defined as an affected facility in section 1.1.

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 operating and material requirements that apply to the type of solvent metal cleaning equipment as specified in Sections 4, 5, and 6.

SECTION 4 Cold Cleaners

4.1 Equipment Requirements.

- 4.1.1 The cold cleaner shall be equipped with a tightly fitting cover that is free of cracks, holes, or other defects. If the solvent is agitated or heated, then the cover shall be designed so that it can be easily operated with 1 hand.
- 4.1.2 The cold cleaner shall be equipped with a drainage facility that is designed so that the solvent that drains off parts removed from the cleaner will return to the cold cleaner. The drainage facility may be external if the District determines that an internal type cannot fit into the cleaning system.
- 4.1.3 A permanent, conspicuous label summarizing the operating requirements specified in section 4.2 shall be installed on or near the cold cleaner.
- 4.1.4 If used, the solvent spray shall be a fluid stream, not a fine, atomized, or shower type spray, at a pressure that does not cause excessive splashing. Flushing of parts using a flexible hose or other flushing device shall be performed only within the freeboard area of the cold cleaner. Solvent flow shall be directed downward to avoid turbulence at the air-solvent interface and to prevent solvent from splashing outside of the cold cleaner.
- 4.1.5 If the solvent is heated above 120°F, then 1 of the following control devices shall be used:
 - 4.1.5.1 Freeboard with a freeboard ratio equal to or greater than 0.7,
 - 4.1.5.2 Water cover, provided that the solvent is insoluble in, and heavier than, water, or
 - 4.1.5.3 Another system, approved by the District, that provides equivalent control, such as a refrigerated chiller or carbon adsorber.
- 4.1.6 Work area fans shall be located and positioned so that they do not blow across the opening of the cold cleaner.
- 4.1.7 If a pump-agitated solvent bath is used, then the agitator shall be operated to produce no more than a rolling motion of solvent with no observable splashing of the solvent against the tank walls or the parts being cleaned. An air-agitated solvent bath shall not be used.
- 4.1.8 The solvent-containing portion of the cold cleaner shall be free of all liquid leaks. Auxiliary cold cleaner equipment such as pumps, water separators, steam traps, or distillation units shall not have any visible liquid leaks, visible tears, or cracks.

4.2 Operating Requirements.

- 4.2.1 Waste solvent shall neither be disposed of nor transferred to another party in a manner such that more than 20% by weight of the waste solvent can evaporate. Waste solvent shall be stored only in a covered container. A covered container may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.
- 4.2.2 The solvent level in the cold cleaner shall not exceed the fill line.
- 4.2.3 The cold cleaner cover shall be closed whenever a part is not being handled in the cold cleaner.
- 4.2.4 Parts to be cleaned shall be racked or placed into the cold cleaner in a manner that will minimize drag-out losses.
- 4.2.5 Cleaned parts shall be drained for at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping, or rotating, the parts shall be positioned so that the solvent drains directly back to the cold cleaner.
- 4.2.6 A spill during solvent transfer shall be cleaned immediately, and the wipe rags or other sorbent material shall be immediately stored in a covered container for disposal or recycling unless enclosed storage of these items is not allowed by fire protection authorities.

- 4.2.7 Sponges, fabric, wood, leather, paper products, and other absorbent material shall not be cleaned in a cold cleaner.
- 4.3 Material Requirements. No person shall do either of the following:
 - 4.3.1 Cause or allow the sale of solvent with a vapor pressure that exceeds 1.0 mm Hg (0.019 psi) measured at 20°C (68°F) in units greater than 5 gallons for use in cold cleaners located in Jefferson County, Kentucky, and
 - 4.3.2 Operate a cold cleaner using a solvent with a vapor pressure that exceeds 1.0 mm Hg (0.019 psi) measured at 20°C (68°F).
- 4.4 Recordkeeping Requirements.
 - 4.4.1 A person subject to the requirements of section 4.3.1 shall maintain records that include the following for each sale:
 - 4.4.1.1 The name and address of the solvent purchaser,
 - 4.4.1.2 The date of the sale,
 - 4.4.1.3 The type of solvent,
 - 4.4.1.4 The unit volume of the solvent,
 - 4.4.1.5 The total volume of the solvent, and
 - 4.4.1.6 The vapor pressure of the solvent measured in mm Hg at 20°C (68°F).
 - 4.4.2 A person subject to the requirements of section 4.3.2 shall maintain records that include the following for each purchase:
 - 4.4.2.1 The name and address of the solvent supplier,
 - 4.4.2.2 The date of the purchase,
 - 4.4.2.3 The type of the solvent, and
 - 4.4.2.4 The vapor pressure of the solvent measured in mm Hg at 20°C (68°F).
 - 4.4.3 All records required by section 4.4 shall be retained for 5 years and made available to the District upon request.
- 4.5 Notwithstanding the material requirements of section 4.3, the owner or operator of a cold cleaner shall, by June 1, 2003:
 - 4.5.1 Determine whether a lower VOC-containing or non-VOC solvent is feasible to be used in place of the currently-used solvent during the time period June 15, 2003, to September 15, 2003, and
 - 4.5.2 Submit in writing, to the District, the results of the determination made pursuant to section 4.5.1 and a description of any changes, determined to be feasible, that the owner or operator has decided to make during that time period.
- 4.6 Before implementing a process change pursuant to section 4.5, the owner or operator of the cold cleaner should appropriately address any related safety issues.
- 4.7 To the extent that a process change is not prohibited to be made prior to the issuance of a permit pursuant to Regulation 2.16 *Title V Operating Permits* or Regulation 2.05 *Prevention of Significant Deterioration of Air Quality*, and notwithstanding the permit requirements of Regulation 2 *Permit Requirements*, the owner or operator of a cold cleaner may, after notifying the District pursuant to section 4.5, implement process changes pursuant to section 4.5, except for process changes that increase the capacity of the cold cleaner, up to September 15, 2003, without first obtaining an otherwise-required permit from the District pursuant to Regulation 2. Permanent implementation of a process change after September 15, 2003, is subject to the permit requirements of Regulation 2.

SECTION 5 Open Top Vapor Degreasers

- 5.1 Equipment Requirements.

- 5.1.1 The open top vapor degreaser shall be equipped with a cover that can be opened and closed easily without disturbing the vapor zone. The cover shall be free of cracks, holes, and other defects. If the degreaser opening is greater than 10 square feet, the cover must be powered. If a lip exhaust is used, the closed cover shall be below the level of the lip exhaust.
- 5.1.2 The open top vapor degreaser shall be equipped with the following safety switches:
 - 5.1.2.1 Condenser flow switch and thermostat to shut off the sump heater if the condenser coolant either is not circulating or is too warm,
 - 5.1.2.2 Spray safety switch to shut off the spray pump if the vapor level drops more than 4 inches below the bottom condenser coil in order to prevent spraying above the vapor level, and
 - 5.1.2.3 Vapor level control thermostat to shut off the sump heater if the vapor zone rises above the design level, or
 - 5.1.2.4 Equivalent safety systems as approved on a case-by-case basis by the District.
- 5.1.3 The open top vapor degreaser shall be equipped with at least 1 of the following major control devices:
 - 5.1.3.1 Freeboard with a freeboard ratio equal to or greater than 0.75, and, if the open top vapor degreaser opening is greater than 10 square feet, then the cover shall be powered or mechanically assisted,
 - 5.1.3.2 Refrigerated chiller,
 - 5.1.3.3 Enclosed design such that the cover or door opens only when a dry part is actually entering or exiting the degreaser,
 - 5.1.3.4 Carbon adsorption system, with ventilation, when the cover is open, equal to or greater than 50 cfm/sq ft of air/vapor interface area, and exhausting less than 25 ppm by volume VOC averaged over 1 complete adsorption cycle, or
 - 5.1.3.5 Control system demonstrated to the District's satisfaction to have a control efficiency equivalent to or better than any of the above.
- 5.1.4 A permanent, conspicuous label summarizing the operating procedures specified in section 5.1.2, shall be installed on or near the open top vapor degreaser.
- 5.2 Operating Requirements.
 - 5.2.1 The cover shall be closed at all times except when processing work loads through the open top vapor degreaser.
 - 5.2.2 Solvent carry-out shall be minimized by the following measures:
 - 5.2.2.1 Parts shall be racked to allow complete drainage,
 - 5.2.2.2 Parts shall be moved in and out of the open top vapor degreaser at a vertical speed of less than 11 ft/min,
 - 5.2.2.3 The work load shall be degreased in the vapor zone until condensation ceases,
 - 5.2.2.4 Any pools of solvent on the cleaned parts shall be tipped out before removal, and
 - 5.2.2.5 Parts shall be allowed to dry within the open top vapor degreaser above the vapor zone until visually dry.
- 5.3 Porous or absorbent materials such as cloth, leather, wood, or rope shall not be degreased.
- 5.4 The work load shall not occupy more than half of the degreaser's open top area.
- 5.5 The vapor level shall not drop more than 4 inches when the work load enters or leaves the vapor zone.
- 5.6 Solvent shall not be sprayed above the vapor level.
- 5.7 Any solvent leak shall either be repaired immediately or the open top vapor degreaser shall be shut down until the leak is repaired.

- 5.8 Waste solvent shall neither be disposed of nor transferred to another party in a manner such that more than 20% by weight of the waste solvent can evaporate. Waste solvent shall be stored only in closed containers.
- 5.9 The exhaust ventilation shall not exceed 65 cfm/sq ft of degreaser area unless necessary to meet OSHA requirements or control device requirements. Ventilation fans shall not be used near the degreaser opening.
- 5.10 Water shall not be visually detectable in the solvent exiting the water separator.

SECTION 6 ConveyORIZED Degreasers

6.1 Equipment Requirements.

- 6.1.1 A conveyORIZED degreaser shall be enclosed, except for work load entrances and exits, so that in-plant air movement does not impinge upon the internal atmosphere of the degreaser.
- 6.1.2 The conveyORIZED degreaser shall be equipped with a drying tunnel or another means, such as rotating baskets, sufficient to prevent cleaned parts from carrying out solvent in either liquid or vapor form.
- 6.1.3 The parts entrance and exit openings for the conveyORIZED degreaser shall be minimized by providing covers that silhouette work loads so that the average clearance between the largest part and the edge of the entrance and exit openings is either less than 4 inches or less than 10% of the width of the opening.
- 6.1.4 The conveyORIZED degreaser shall be equipped with down-time covers for closing off the entrance and exit openings during shutdown hours.
- 6.1.5 If the conveyORIZED degreaser has an air/solvent interface area or an air/vapor interface area equal to or greater than 20 square feet, then the conveyORIZED degreaser shall be equipped with at least 1 of the following major devices:
 - 6.1.5.1 Refrigerated chiller,
 - 6.1.5.2 Carbon adsorption system, with ventilation, when the down-time covers are open, greater than or equal to 50 cfm/sq ft of air/vapor interface area, and exhausting less than 25 ppm by volume of VOC averaged over 1 complete adsorption cycle, or
 - 6.1.5.3 Control system demonstrated to the District's satisfaction to have a control efficiency equivalent to or better than either of the above.
- 6.1.6 If the conveyORIZED degreaser is a vapor type, then it shall be equipped with the following safety switches:
 - 6.1.6.1 Condenser flow switch and thermostat to shut off the sump heater if the condenser coolant is either not circulating or is too warm,
 - 6.1.6.2 Spray safety switch to shut off the spray pump or conveyor if the vapor level drops more than 4 inches below the bottom condenser coil in order to prevent spraying above the vapor level, and
 - 6.1.6.3 Vapor level control thermostat to shut off the sump heater if the vapor level rises above the design level, or
 - 6.1.6.4 Equivalent safety systems as approved on a case-by-case basis by the District.
- 6.1.7 A permanent, conspicuous label, summarizing the operating requirements in section 6.2, shall be installed on or near the conveyORIZED degreaser.

6.2 Operating Requirements.

- 6.2.1 The exhaust ventilation shall not exceed 65 cfm/sq ft of degreaser opening unless necessary to meet OSHA requirements or control device requirements. Work place ventilation fans shall not be used near the conveyORIZED degreaser openings.
- 6.2.2 Solvent carry-out shall be minimized by the following measures:

- 6.2.2.1 Parts shall be racked to allow complete drainage, and
- 6.2.2.2 The vertical conveyor speed shall be less than 11 ft/min.
- 6.2.3 Waste solvent shall neither be disposed of nor transferred to another party in a manner such that more than 20% by weight of the waste solvent can evaporate. Waste solvent shall be stored only in closed containers.
- 6.2.4 Any solvent leak shall either be repaired immediately or the conveyorized degreaser shall be shut down until the leak is repaired.
- 6.2.5 Water shall not be visually detectable in the solvent exiting the water separator.
- 6.2.6 Down-time covers shall be placed over the parts entrance and exit openings for the conveyorized degreaser immediately after the conveyor and exhaust are shut down and removed just before they are started up.

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, v6/5-15-02, v7/5-9-03.

REGULATION 6.19 Standard of Performance for Existing Metal Furniture 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 surface coating operations at existing metal furniture manufacturing facilities.

SECTION 1 Applicability

This regulation applies to each affected facility which was in being or had a construction permit issued by the District on or before the effective date of this 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 "Affected facility" means a coating line for indoor and/or outdoor metal furniture.
- 2.2 "Applicator" means the mechanism or device used to apply the coating, including, but not limited to, dipping, spraying, or flow-coating.
- 2.3 "Coating line" means a series of one or more coating applicators and any associated flash-off 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 flash-off 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 operations including flash off area evaporation, oven drying, baking, curing, and polymerization;
 - 2.3.5 Clean up operations;
 - 2.3.6 Leaks, spills and disposal of VOCs; and
 - 2.3.7 Processing and handling of recovered VOCs;
- 2.4 "Flash off area" means the space between the applicator and the oven.
- 2.5 "Metal furniture" means household and business items including, but not limited to: tables, chairs, wastebaskets, beds, desks, lockers, benches, shelving, file cabinets, lamps and room dividers.
- 2.6 "Prime coat" means the first film of coating applied in a multi-coat operation.

- 2.7 "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 6.13.
- 2.8 "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.
- 2.9 "Topcoat" means the final film of coating applied in a two-coat operation or the coatings which are applied after the single coat in a multi-coat operation.
- 2.10 "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 emissions 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 input into the affected facility.

SECTION 4 Compliance

- 4.1 In all cases, the design of any control device 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 when the District determines that a material balance is not possible. For those cases when 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 system or any part of the system. The control system capture efficiency shall be measured according to Regulation 1.05.
- 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.
 - 4.4.1 EPA Method 24 shall be used to determine the VOC content of coatings.

SECTION 5 Exemptions

- 5.1 Any affected facility shall be exempt from section 3 if the VOC content of the coating is less than 0.36 kg/l of coating (3.0 lb/gal) excluding water and exempt solvent, delivered to the applicators associated with the prime, single or topcoat coating line.
- 5.2 No owner or operator of a metal furniture 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 5.2.1, exceeds the emission limit in section 5.1. Equivalency calculations must be done on a solids applied basis.

- 5.2.1 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:

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

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.
- V_t = 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 or solvents 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 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 and solvent;
 - 6.1.5 The date for each application of coating or 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; 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 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 v1/6-13-79; effective 6-13-79; amended v2/4-20-88, v3/5-15-91.

REGULATION 6.20 Standard of Performance for Existing Bulk Gasoline 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 existing bulk gasoline plants.

SECTION 1 Applicability

This regulation applies to each affected facility which was in being or had a construction permit issued by the District on or before 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, 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 a tank truck, trailer, or railroad tank car.
- 2.7 "Vapor Balance System" means a combination of pipes or hoses that create a closed system between the vapor spaces of an unloading tank and a receiving 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 Regulations 6.13 or 7.12; and
 - 3.1.2 A vapor balance system for:
 - 3.1.2.1 Filling of stationary storage tanks from transport vehicle tanks;
 - 3.1.2.2 Filling of transport vehicle tanks from stationary storage tanks; and
 - 3.1.2.3 Loading into transport vehicle tanks either:
 - 3.1.2.3.1 A submerged fill tube system; or
 - 3.1.2.3.2 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 or transport vehicle 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 that 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 only 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 The owner or operator may elect to use an alternative control system if it can be demonstrated to the satisfaction of the District that the alternative system will achieve equivalent control efficiency.
- 3.12 No owner or operator of a bulk gasoline plant in Jefferson County shall allow loading of a tank truck or trailer unless the following provisions are met:
 - 3.12.1 The tank truck or trailer has a valid Kentucky pressure-vacuum test sticker as required by Regulation 6.37 attached and visibly displayed;
 - 3.12.2 The vapor balance system and associated equipment are designed and operated to prevent gauge pressure in the delivery vehicle from exceeding 450 mm water (18 inches water) and prevent vacuum from exceeding 150 mm water (six inches water);
 - 3.12.3 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 owner or operator, can be connected to the tap in order to determine compliance with section 3.12.2. The pressure tap shall be installed by the owner or operator as close as possible to the connection with the tank truck or trailer, and shall consist of a 1/4 inch tubing connector which is compatible with a 3/16 inch inside diameter plastic tubing;
 - 3.12.4 During loading operations 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 (one inch) from the 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 3.12.5; and

- 3.12.5 On or after April 1, 1983, the test procedure as defined in "Control of Volatile Organic Compound Leaks from Gasoline Tank Truck and Vapor Collection Systems" (OAQPS 1.2-119) Appendix B, or an equivalent procedure approved by the District, shall be used to determine compliance with the standard prescribed in section 3.12.4 during inspections conducted pursuant to KRS 77.165 or KRS 224.10-100 (10).

SECTION 4 Compliance Timetable

- 4.1 The owner or operator of an affected facility shall be required to achieve compliance by May 1, 1981.
- 4.2 The owner or operator of a bulk plant subject to this regulation shall achieve final compliance with section 3.12 by December 1, 1982.

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

REGULATION 6.21 Standard of Performance for Existing Gasoline Loading Facilities at Bulk Terminals

**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 existing loading facilities at bulk terminals.

SECTION 1 Applicability

This regulation applies to each affected facility which was in being or had a construction permit issued by the District before 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 the facilities at a bulk gasoline terminal for loading gasoline into tank trucks, trailers, railroad tank cars, or other mobile, non-marine vessels.
- 2.2 "Bulk gasoline terminal" means a facility for the storage and dispensing of gasoline where incoming gasoline loads are received by pipeline, marine tanks, or barge (solely or in combination with tank trucks, trailers, railroad tank cars, or other mobile, non-marine vessels) and where outgoing gasoline loads are transferred by tank trucks, trailers, railroad tank cars, or other mobile non-marine vessels.
- 2.3 "Gasoline" means any petroleum distillate used as a fuel for internal combustion engines and having a Reid vapor pressure of four pounds per square inch or greater.

SECTION 3 Standard for Volatile Organic Compounds

- 3.1 No owner or operator of any loading facility shall load gasoline unless such facility is equipped with a vapor control system which is in good working order and in operation.
- 3.2 Loading shall be accomplished in such a manner that all displaced vapor and air will be vented only to the vapor collection 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.
- 3.3 No owner or operator shall permit the volatile organic compound emissions from the vapor control device to exceed 80 milligrams per liter of gasoline loaded.
- 3.4 No owner or operator shall open tank hatches or allow hatches to be opened at any time during loading operations if bottom-fill is practiced. If top-submerged fill is practiced, the hatch is to be opened the minimum time necessary to install and remove the submerged fill pipe and associated vapor collection equipment.
- 3.5 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.

- 3.6 No owner or operator of a bulk gasoline terminal subject to this regulation shall allow loading on or after April 1, 1983 unless the following provisions are met:
 - 3.6.1 The vapor control system and associated equipment are designed and operated to prevent gauge pressure in the tank truck or trailer from exceeding 450 mm water (18 inches water) and prevent vacuum from exceeding 150 mm water (six inches water);
 - 3.6.2 A pressure tap or any equivalent system as approved by the District is installed on the vapor collection system so that a liquid manometer, supplied by the owner or operator, can be connected to the tap in order to determine compliance with section 3.6.1. The pressure tap shall be installed by the owner or operator as close as possible to the connection with the tank truck or trailer, and shall consist of a 1/4 inch tubing connector which is compatible with the use of 3/16 inch inside diameter plastic tubing;
 - 3.6.3 During loading operations 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 (one inch) from the potential leak source associated with the vapor collection system of a bulk gasoline terminal as detected by a combustible gas detector using the test procedure in section 5.4; and
 - 3.6.4 The tank truck or trailer has a valid Kentucky pressure-vacuum test sticker as required by Regulation 6.37 attached and visibly displayed.

SECTION 4 Monitoring and Reporting Requirements

The owner or operator shall conduct such monitoring of operations and submit records as specified by the District.

SECTION 5 Compliance

- 5.1 The design of the vapor control system is subject to the approval of the District.
- 5.2 Methods specified by the District shall be used to determine compliance with section 3, except as required in sections 5.3 and 5.4.
- 5.3 The test procedure, as defined in "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals," EPA-450/2-77-026, (OAQPS No. 1.2-082) Appendix A shall be used to determine compliance with section 3.6. Each bulk gasoline terminal subject to this regulation shall use leak tight tank trucks for the compliance test. For purposes of testing using Appendix A, a leak-tight tank truck is one that during loading has no reading greater than or equal to 100% of the lower explosive limit (LEL, measured as propane), at a distance of 2.5 centimeters (one inch) from the potential leak source associated with the gasoline tank truck or trailer and its vapor collection system, as detected by a combustible gas detector using the test procedure in section 5.4.
- 5.4 The test procedure, as defined in "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems (OAQPS 1.2-119) Appendix B, or an equivalent procedure approved by the District, shall be used to determine compliance with section 3.6.3 during inspections conducted pursuant to KRS 77.165 or KRS 224.10-100 (10) and with the requirements of section 5.3.

SECTION 6 Compliance Timetable

- 6.1 The owner or operator of an affected facility shall be required to complete the following:

- 6.1.1 Submit a final control plan for achieving compliance with this regulation by September 1, 1979;
- 6.1.2 Award the control system contract by January 1, 1980;
- 6.1.3 Initiate on-site construction or installation of emission control equipment by July 1, 1980;
- 6.1.4 Complete on-site construction or installation of emission control equipment by March 1, 1981; and
- 6.1.5 Achieve final compliance by May 1, 1981.
- 6.2 The owner or operator of an affected facility shall achieve final compliance with section 3.6 by April 1, 1983.

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

REGULATION 6.22 Standard of Performance for Existing 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 organic material emissions from existing 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 that was commenced before 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 which reduces the emissions of all hydrocarbon vapors and gases by at least 90% by weight, and which 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.

SECTION 5 Compliance Timetable

The owner or operator of an affected facility shall demonstrate compliance by the effective date of this regulation.

Adopted v1/7-14-76; effective 9-1-76; amended v2/6-13-79, v3/4-20-88, v4/3-17-93.

REGULATION 6.24 Standard of Performance for Existing Sources Using Organic Materials

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 organic materials emissions from existing affected facilities.

SECTION 1 Applicability

- 1.1 This regulation applies to any affected facility using any organic materials which was in being or had a construction permit issued by the District prior to the effective date of this regulation except when a specific regulation exists for the source.
 - 1.1.1 Those portions of any series of affected facilities designed for processing a continuous web, strip, or wire which emit organic materials shall be taken collectively to determine compliance with this regulation;
 - 1.1.2 Emissions of organic materials 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; and
 - 1.1.3 Emissions of organic materials to the atmosphere from the cleanup with organic materials of any affected facility shall be included with other emissions of organic materials from that affected facility for determining compliance with this regulation.
- 1.2 This regulation shall not apply to:
 - 1.2.1 The use of equipment for which other requirements are specified by Regulation 6 for existing sources or which are exempt from air pollution control requirements by the regulation;
 - 1.2.2 The spraying or other employment of insecticides, pesticides, or herbicides;
 - 1.2.3 The employment, application, evaporation, or drying of saturated halogenated hydrocarbons or perchlorethylene;
 - 1.2.4 The use of any material in any affected facility described in section 1.1 if the volatile content of the material prior to application consists only of Class III solvent and a solid content comprising not less than 70% by volume of the material as applied; or
 - 1.2.5 The use of any material in any affected facility described in section 1.1 if the volatile content of the material prior to application consists only of water and Class III solvent and the organic solvent comprises not more than 20% of the volatile content by volume as applied.

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 article, machine, equipment, or other contrivance used for employing or applying any organic material.
- 2.2 "Class I Solvent" means any organic material which comes into contact with flame or is baked, heat-cured, or heat-polymerized in the presence of oxygen, unless it can be demonstrated to the satisfaction of the District that no new compounds are created through such contact.
- 2.3 "Class II Solvent" means any organic material except perchlorethylene, which has an aggregate of more than 20% of its total volume composed of the chemical compounds classified below or which exceeds any of the following individual percentage composition limitations referred to the total volume of organic materials:
- 2.3.1 A combination of hydrocarbons having an olefinic or cycloolefinic type of unsaturation - 5%;
- 2.3.2 A combination of aromatic compounds with eight or more carbon atoms to the molecule except ethylbenzene - 8%; or
- 2.3.3 A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene, or toluene - 20%;
- When any organic material or a constituent of an organic material may be classified by its chemical structure into more than one of the above groups of organic compounds, it shall be considered as a member of the most reactive chemical group, that is, that group having the least allowable percent of the total volume of organic materials.
- 2.4 "Class III Solvent" means any organic material which is not classified as a Class I or a Class II solvent.
- 2.5 "Organic materials" means VOCs which are used as solvers, reaction media, viscosity reducers, cleaning agents, reactants, diluents, or thinners, except that such materials which have a vapor pressure less than 0.5 mm Hg at 220 °F shall not be considered to be included unless exposed to temperatures exceeding 220 °F.

SECTION 3 Standard for Organic Materials

- 3.1 No owner or operator subject to this regulation shall discharge into the atmosphere more than 15 pounds of organic materials in any one day, or more than three pounds in any one hour, from any existing affected facility in which any Class I solvent is used unless said discharge has been reduced by at least 85% by weight.
- 3.2 No owner or operator subject to this regulation shall discharge into the atmosphere more than 40 pounds of organic materials in any one day, nor more than eight pounds in any one hour, from any existing affected facility in which any Class II solvent is used unless said discharge has been reduced by at least 85% by weight.
- 3.3 No owner or operator subject to this regulation shall discharge into the atmosphere more than 3,000 pounds of organic materials in any one day, nor more than 450 pounds in any one hour, from any existing affected facility in which any Class III solvent or any material containing such solvent is employed or applied unless the discharge has been reduced by at least 85% by weight.
- 3.4 If incineration is the control method used to achieve compliance with sections 3.1, 3.2, or 3.3, then 90% of the carbon in the organic material must be oxidized to carbon dioxide.

SECTION 4 Monitoring and Reporting

- 4.1 Any person controlling the emission of organic materials pursuant to this regulation shall provide, properly install, and maintain in calibration, 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.
- 4.2 Any person using organic materials or any material containing organic materials 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 organic material used.

SECTION 5 Compliance

- 5.1 In all cases, the design of any control system is subject to approval by the District.
- 5.2 Compliance with the standard in section 3 shall be demonstrated by material balance except in those cases where the District determines 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 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 6 Exemption

Facilities that manufacture surface coatings for other facilities, that use or apply surface coatings and that are in compliance with an applicable emission standard exemption in Regulation 6 or 7 are exempt from the standards in section 3 for the manufacture of those particular coatings.

SECTION 7 Compliance Timetable

Any affected facility shall be in compliance as of the effective date of this regulation.

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

REGULATION 6.25 Standard of Performance for Existing 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 existing sanitary landfills.

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

REGULATION 6.26 Standards of Performance for Existing 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 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 volatile organic compound water separators.

SECTION 1 Applicability

This regulation applies to any compartment of any vessel or device operated for the recovery of volatile organic compounds that contains 200 gallons a day or more of any VOCs from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 psia or greater that was in being or under construction prior to 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 "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 Hydrocarbons

The emissions of all hydrocarbon vapors and gases shall be reduced by at least 90% by weight. All gauging and sampling devices shall be gas tight except when gauging and/or sampling is taking place.

SECTION 4 Compliance Timetable

An affected facility shall be in compliance on or before the effective date of this regulation.

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

REGULATION 6.27 Standards of Performance for Existing 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 existing liquid waste incinerators.

SECTION 1 Applicability

This regulation applies to those facilities disposing of waste solvents, chemicals, and other flammable material by incineration that are in existence or have a construction permit issued by the District before 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 and prior to any spray chamber of 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 "Liquid waste" means any material in a liquid form that has no commercial value other than recovery of its recyclable components, or has been transferred to a facility for disposal.
- 2.6 "Liquid waste incinerator" is a device for incineration of liquid waste.
- 2.7 "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.
- 2.8 "Residence time" means the time required for the products of combustion to travel from the liquid waste burner to the exit of the incinerator while maintaining the average gas temperature associated with the residence time.

SECTION 3 Standard for Particulate Matter

The owner or operator subject to this regulation shall not cause the emission of particulate matter from a liquid waste incinerator to exceed:

- 3.1 0.2 gr/scf corrected to 12% CO₂ excluding the contribution of CO₂ from auxiliary fuel, and
- 3.2 20% opacity.

SECTION 4 Equipment Standards

- 4.1 Incineration of partially combustible liquids shall be accomplished in an incinerator equipped with means for 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.
- 4.2 Incineration of liquid wastes with a viscosity of 750 SSU or greater shall be accomplished in a burner equipped with steam or air atomization.
- 4.3 Incineration of halogenated liquid wastes shall be accomplished in an incinerator equipped with wet scrubber.
- 4.4 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.
- 4.5 The incinerator shall be capable of maintaining an average gas temperature of 1600 °F with a residence time as determined by the District to provide complete combustion of the liquid waste.
- 4.6 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:
 - 4.6.1 Fire or flame reaching the line delivering waste to the burner; or
 - 4.6.2 Loss of burner flame.
- 4.7 The delivery pipe to the liquid waste burner shall be equipped with a flow indicator capable of measuring the maximum demand of the burner.
- 4.8 The incinerator shall be equipped with an indicating pyrometer or thermometer to measure the exit gas temperature.

SECTION 5 Recordkeeping

The owner or operator of any liquid waste incinerator subject to this regulation shall record the following information:

- 5.1 Daily operating hours of liquid waste incinerator, and
- 5.2 Daily log of liquid waste received and specifying:
 - 5.2.1 The amount received;
 - 5.2.2 A general description of the waste;
 - 5.2.3 The source from whom the waste was received; and
 - 5.2.4 A designation of whether the waste contains material toxic to humans.

SECTION 6 Timetable for Compliance

- 6.1 Compliance with section 4 shall occur on or before February 1, 1980.
- 6.2 Compliance with all other requirements of this regulation shall occur as of the effective date of this regulation.

Adopted v1/6-13-79; effective 6-13-79.

REGULATION 6.28 Standard of Performance for Existing Hot Air Aluminum Atomization Processes

**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 existing hot air atomization processes for aluminum.

SECTION 1 Applicability

This regulation applies to each hot air aluminum atomization process that was in being or had a construction permit issued by the District on or before July 2, 1975.

SECTION 2 Definitions

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

2.1 "Hot Air Aluminum Atomization Process" means a process for producing fine aluminum powder wherein molten aluminum is reduced to a fine spray by the use of compressed air (or an inert gas) which has been heated to a temperature of 600°F or above.

SECTION 3 Standard for Particulate Matter

No owner or operator subject to this regulation 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 Is equal to or greater than 20% opacity, or

3.2 Is in excess of 13.76 pounds per ton of aluminum powder atomized.

Adopted v1/3-18-81; effective 3-18-81.

REGULATION 6.29 Standard of Performance for Graphic Arts Facilities Using Rotogravure or Flexographic Printing

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 graphic arts facilities that use rotogravure or flexographic printing.

SECTION 1 Definitions

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

- 1.1 "Affected facility" means a printing line for packaging rotogravure, publication rotogravure, specialty rotogravure, or flexographic printing.
- 1.2 "Applicator" means the mechanism or device used to apply an ink or coating.
- 1.3 "Coating" means the application of a uniform layer of material across the entire width or across a partial width of a substrate.
- 1.4 "Flashoff area" means the space between an applicator and the associated oven.
- 1.5 "Flexographic printing" means the application of words, designs, or pictures to a substrate by means of a roll printing technique in which the pattern to be applied is raised above the printing roll and the image carrier is made of rubber or other elastomeric materials.
- 1.6 "Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film, or other substrate that is, in subsequent operations, formed into a packaging product or label, or both.
- 1.7 "Printing" means the formation of words, designs, or pictures, usually by a series of application rolls each with only partial coverage. This term applies to flexographic printing and publication, specialty, and packaging rotogravure printing.
- 1.8 "Printing line" means a series of processes, and the associated process equipment, used to apply, dry, and cure an ink containing a VOC. A printing line may also include one or more coating processes that are subject to this regulation. A printing line need not have an oven or flashoff area. A printing line shall include, but is not limited to, the following:
 - 1.8.1 Mixing operations,
 - 1.8.2 Process storage,
 - 1.8.3 Applicators,
 - 1.8.4 Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization,
 - 1.8.5 Clean up operations,
 - 1.8.6 Leaks, spills, and disposal of VOCs, and
 - 1.8.7 Processing and handling of recovered VOCs.
- 1.9 "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers that contain inks, coatings, solvents, or recovered VOC-containing materials but does not mean storage tanks that are subject to Regulation 6.13 *Standard of Performance for Existing Storage Vessels for Volatile Organic Compounds* or Regulation 7.13 *Standards of*

Performance for New Storage Vessels for Volatile Organic Compounds.

- 1.10 "Publication rotogravure printing" means rotogravure printing upon paper that is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, or other types of printed materials.
- 1.11 "Roll Printing" means the application of words, designs, or pictures to a substrate usually by means of a series of hard rubber or steel rolls each with only partial coverage.
- 1.12 "Rotogravure printing" means the application of words, designs, or pictures to a substrate by means of a roll-printing technique that involves intaglio or recessed image areas in the form of cells.
- 1.13 "Specialty rotogravure printing" means all rotogravure printing except packaging rotogravure and publication rotogravure printing. Specialty rotogravure printing includes, but is not limited to, rotogravure printing on paper cups and plates, patterned gift wrap, wallpaper, or floor coverings.
- 1.14 "VOC net input" means the total amount of VOCs input to an affected facility minus the amount of VOCs that are not emitted into the atmosphere. VOCs 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 process or design of process equipment is such as to permit more than one interpretation of this definition, the interpretation that results in the minimum value for allowable emissions shall apply.

SECTION 2 Applicability

This regulation applies to each printing line for packaging rotogravure, publication rotogravure, specialty rotogravure, or flexographic printing. New or modified affected facilities shall comply with all standards upon commencing operation. Any affected facility that is ever subject to this regulation shall always be subject to this regulation, unless the process of the affected facility is changed to a process not covered by this regulation.

SECTION 3 Standard for Volatile Organic Compounds

- 3.1 A person shall not cause or allow the emission of VOC from any affected facility unless at least one of the following requirements is met:
 - 3.1.1 The volatile fraction of all inks and coatings, as applied to the substrate, used on the affected facility shall contain no more than 25% VOC by volume,
 - 3.1.2 The non-volatile fraction, minus water and exempt solvents, of all inks and coatings, as applied to the substrate, used on the affected facility shall be at least 60% by volume,
 - 3.1.3 All inks and coatings, as applied to the substrate, used on the affected facility shall contain no more than 0.5 pound of VOC per pound of solids, or
 - 3.1.4 The VOC emissions shall not exceed the following limit as applicable:
 - 3.1.4.1 For publication rotogravure printing, 25% by weight of the VOC net input into the affected facility,
 - 3.1.4.2 For packaging rotogravure printing or specialty rotogravure printing, 35% by weight of the VOC net input into the affected facility, and
 - 3.1.4.3 For flexographic printing, 40% by weight of the VOC net input into the affected facility.
- 3.2 Compliance with the requirements of section 3.1 shall be based upon the inks and coatings, as applied, used by 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 one calendar month.

- 3.3 If more than one requirement of section 3.1 would be applicable for a specific affected facility, then the least stringent requirement shall apply.

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 an emission limit in section 3.1.4 shall be determined based upon the control device efficiency and the control system capture efficiency. If so requested by the District, performance tests 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 *Compliance with Emission Standards and Maintenance Requirements*.
- 4.3 The VOC content and density of inks and coatings, as applied, shall be determined by the applicable EPA Method 24A or Method 24.
- 4.4 Whenever deemed necessary by the District, the District may obtain samples of the inks and coatings, as applied, used at an affected facility to verify compliance with the requirements of section 3.1.1 to section 3.1.3.
- 4.5 When an affected facility uses add-on controls, compliance shall be determined by EPA Method 25.
- 4.6 For the purposes of determining compliance with this regulation, if any process equipment or process could be considered to be a part of more than one printing line, its VOC emissions shall be assigned to each printing line of which it is a part proportionally to the throughput of VOCs the process or process equipment receives from or distributes to each printing line.

SECTION 5 Deviations

Deviation with the standard and limitations contained in this regulation, when supported by adequate technical information, shall 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 shall require federal approval pursuant to Regulation 1.08 *Administrative Procedures*.

SECTION 6 Monitoring and Recordkeeping

- 6.1 An owner or operator of an affected facility subject to this regulation shall maintain records of operations for the approved averaging period for the most recent five-year period. The records shall be made available to the District, the Cabinet, and the EPA 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, paper, etc.),
- 6.1.3 The amount and type of each ink, coating, and solvent used at each point of application, including exempt compounds, during the averaging period. The District shall approve a written request for the usage record to reflect a period longer than the compliance averaging period if the material usage is prorated for each compliance averaging period by using a measurable indicator that is determined by the District to be directly and proportionally related to material usage, such as linear feet or area of substrate printed. In this case, the usage period shall not exceed 1 calendar month,
- 6.1.4 The VOC content as applied in each ink, coating, and solvent,
- 6.1.5 The date for each application of each ink, coating, and solvent, and

- 6.1.6 Oven temperature, where applicable.
- 6.2 When an affected facility uses add-on controls to achieve compliance, monitoring, recordkeeping, and the maintenance of certain documentation shall be required. Examples of some controls and related information are:
 - 6.2.1 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,
 - 6.2.2 Catalytic incinerator - exhaust gas temperature, change in temperature across catalyst bed, date of last change of catalyst bed, inlet and outlet VOC concentration from emission tests, how and when these concentrations were determined, destruction or removal efficiency, and manufacturer data, and
 - 6.2.3 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.

Adopted v1/5-20-82; effective 5-20-82; amended v2/4-21-82, v3/11-16-83, v4/2-19-86, v5/4-20-88, v6/5-15-91, v7/9-26-02, v8/11-20-02.

REGULATION 6.30 Standard of Performance for Existing 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 existing wood panel facilities.

SECTION 1 Applicability

This regulation applies to each affected facility commenced before May 20, 1981. Any source that is ever subject to the provisions of 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 "Classification date" means the effective date of this regulation.
- 2.4 "Class II hardboard paneling finishes" means finishes that meet the specifications of Voluntary Product Standard PS-59- 73 in 401 KAR 50:015 as approved by the American National Standards Institute.
- 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, flash off area evaporation, oven drying, baking, curing, and polymerization;
 - 2.5.5 Clean up operations;
 - 2.5.6 Leaks, spills and disposal of volatile organic compounds; and
 - 2.5.7 Processing and handling of recovered volatile organic compounds.
- 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.
- 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 VOCs 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 VOCs 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 of VOCs per 100 sq m 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 of VOCs per 100 sq m of coated surface (12.0 lb/1000 sq ft) for natural finish hardwood plywood panels; or
- 5.3 Less than 4.8 kg of VOCs per 100 sq m of coated surface (10.0 lb/1000 sq ft) for Class II finishes for hardboard paneling. VOC content values are expressed in units of mass of VOC (kg,lb) per area of surface to which the coating is applied (100 sq m, 1000 sq ft), 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 the procedure specified in 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:

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

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, the 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 in 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.
 - 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, v3/4-20-88, v4/5-15-91.

REGULATION 6.31 Standard of Performance for Existing 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 existing miscellaneous metal parts and products surface coating operations.

SECTION 1 Applicability

This regulation applies to each affected facility commenced before 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 coating" 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 In all cases, the design of any control system is subject to approval by the District.
- 4.2 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.
- 4.3 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.
- 4.3.1 The method of analysis for coatings is EPA Method 24.
- 4.4 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.

- 4.4.1 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:

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

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, Section 4 *RACT Determination Procedure* of Regulation 6.42, notwithstanding the applicability provisions of Section 1 of Regulation 6.42, 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.
 - 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 6.32 Standard of Performance for Leaks from Existing 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 existing petroleum refineries.

SECTION 1 Applicability

This regulation applies to each affected facility commenced before 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 volatile organic compounds 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 re-distillation, 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).
- 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 shall conduct such monitoring of affected facilities 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 volatile organic compound detection device one time per year (annually): pump seals, pipeline valves in liquid service, and process drains.
 - 4.1.2 Monitor with a portable volatile organic compound 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 52 times per year (weekly): pump seals.
 - 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 for in Regulation 1.04, the test methods as defined in "Control of Volatile Organic Compound Leaks from Petroleum Refinery Equipment" (OAQPS 1.2-111) 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 that are unique to a source. An alternative program must be approved by EPA as a revision to the SIP.

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

REGULATION 6.33 Standard of Performance for Existing 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 existing pharmaceutical manufacturing operations.

SECTION 1 Applicability

This regulation applies to each affected facility commenced before May 20, 1981. Any source that is ever subject to the provisions of 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 Appendix B of the CTG of Pharmaceutical Manufacture (EPA-450/2-78-029).
- 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 to which this regulation applies 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, crystallizers, 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 ten 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 ten 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 VOCs vapor pressure of 3.5 kPa (0.5 psi) or more at 20°C.
 - 3.5 All in-process tanks containing VOCs 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

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 6.34 Standard of Performance for Existing Pneumatic Rubber Tire Manufacturing 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 existing rubber tire manufacturing facilities.

SECTION 1 Applicability

The provisions of this regulation shall apply to each affected facility commenced before May 20, 1981. Any source that is ever subject to the provisions of this regulation will always be subject to these provisions, 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 undertread cementers, tread end cementers, bead dip tanks, and green tire spray booths associated with the manufacture of pneumatic rubber tires.
- 2.2 "Bead dipping" means the dipping of an assembled tire bead into a solvent based cement.
- 2.3 "Green tire" means an assembled, uncured tire.
- 2.4 "Green tire spraying" means the spraying of a mold release agent and lubricant to the inside and/or the outside of green tires to facilitate the curing process and to prevent rubber from sticking to the mold after the curing process.
- 2.5 "Pneumatic rubber tire manufacture" means the production of pneumatic rubber, passenger type tires on a mass production basis.
- 2.6 "Tread end cementing" means the application of a solvent-based cement to one or both ends of the tread or combined tread-sidewall component.
- 2.7 "Undertread cementing" means the application of a solvent-based cement to a continuous strip of tread or combined tread/sidewall component.
- 2.8 "Water-based sprays" means release compounds, sprayed on the inside and outside of green tires, in which solids, water, and emulsifiers have been substituted for organic solvents.

SECTION 3 Standard for Volatile Organic Compounds

3.1 Undertread Cementing, Tread End Cementing, and Bead Dipping

The owner or operator of an undertread cementing, tread end cementing, or bead dipping operation subject to this regulation shall:

- 3.1.1 Install and operate a capture system, designed to capture, up to 85 percent by weight of VOC emitted, from all undertread cementing, tread end cementing, and bead dipping operations. Maximum reasonable capture shall be consistent with the following documents:

- 3.1.1.1 *Industrial Ventilation, A Manual of Recommended Practices*, 20th edition, American Federation of Industrial Hygienists, and
- 3.1.1.2 *Recommended Industrial Ventilation Guidelines*, U.S. Department of Health, Education and Welfare, National Institute of Occupational Safety and Health, and
- 3.1.2 Install and operate a control device that meets the requirements of one of the following:
 - 3.1.2.1 A carbon adsorber system designed and operated in a manner such that there is at least a 95 percent removal of VOC by weight from the gases ducted to the control device and an overall control efficiency of 62 to 86 percent,
 - 3.1.2.2 An incineration system that oxidizes at least 90 percent of the nonmethane volatile organic compounds which enter the incinerator to carbon dioxide and water and an overall control efficiency of 59 to 81 percent, or
 - 3.1.2.3 A VOC emission reduction system that achieves at least a 90 percent reduction efficiency measured across the control system.
- 3.2 Green Tire Spraying

The owner or operator of a green tire spraying operation subject to this regulation must implement one or the following means of reducing VOC emissions:

 - 3.2.1 Substitute water-based sprays for the normal solvent-based mold release compound, or
 - 3.2.2 Install a capture system designed and operated in a manner that will capture and transfer at least 97 percent of the VOC emitted by the green tire spraying operation to a control device, and
 - 3.2.3 Install and operate a control device that meets the requirements of one of the following:
 - 3.2.3.1 A carbon adsorption system designed and operated in a manner such that there is at least a 95 percent removal of VOC by weight from gases ducted to the control device,
 - 3.2.3.2 An incinerator system that oxidizes at least 90 percent of the nonmethane volatile organic compounds which enter the incinerator to carbon dioxide and water, or
 - 3.2.3.3 A VOC emission reduction system that achieves at least a 90 percent reduction efficiency measured across the control system.

SECTION 4 Compliance

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.

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

REGULATION 6.35 Standard of Performance for Existing 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 existing fabric, vinyl, and paper surface coating operations.

SECTION 1 Applicability

This regulation applies to each affected facility commenced before 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 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 volatile organic compounds; and
 - 2.3.7 Processing and handling of recovered volatile organic compounds.
- 2.3.8 An affected facility that 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, VOCs, or recovered VOCs but does not mean storage tanks that 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 VOCs 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 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 the 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 affected 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 5.
- 4.4.1 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 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 in section 5.3.1, exceeds the emission limit in this section. Equivalency calculations must be done on a solids applied basis. Volatile Organic Compounds emission reduction credit is not allowed when plastisols are used in emission averaging schemes involving vinyl printing and top coating.
- 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 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 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 and 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 6.38 Standard of Performance for Existing Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industries

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 air oxidation processes in the synthetic organic chemical manufacturing industry.

SECTION 1 Applicability

This regulation applies to each air oxidation process reactor and associated product recovery system for sources within the synthetic organic chemical manufacturing industry (SOCMI) which was in being or had a construction permit issued by the District before 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 "Air oxidation facility" means any product recovery system and all reactors in which air is used as an oxidizing agent to produce an organic chemical.
- 2.2 "Product recovery system" means any equipment used to collect volatile organic compounds for beneficial use, reuse, sale or recycling (such as absorbers, adsorbers, condensers, and ammonia or hydrochloric acid recovery units), which discharge directly into the atmosphere or discharge back to the recovery system.
- 2.3 "Total Resource Effectiveness index value" (TRE) means the measure of the supplemental total resource requirement per unit VOC reduction associated with VOC control by thermal oxidation as calculated using the formula and coefficients presented in Table 1.

SECTION 3 Standard for Volatile Organic Compounds

The owner or operator of each air oxidation process vent stream shall either use a combustion device which reduces total organic compound emissions (minus methane and ethane) by 98% by weight or to 20 ppm by volume (ppmv), whichever is less stringent, or maintain a TRE index value greater than 1.0.

SECTION 4 Compliance Timetable

The owner or operator of an affected facility shall be required to complete the following:

- 4.1 Submit a final control plan for achieving compliance by March 1, 1987;
- 4.2 Award the control system contract by May 1, 1987;
- 4.3 Initiate on-site construction or installation of emission control equipment by June 1, 1987;
- 4.4 Complete on-site construction or installation of emission control equipment by November 30, 1987; and
- 4.5 Demonstrate final compliance by December 31, 1987.

SECTION 5 Exemption

An air oxidation facility which uses a combustion device for control of VOCs as of the effective date of this regulation is exempt from Section 3 until the combustion device is replaced or upgraded.

Adopted v1/12-17-86; effective 12-17-86.

Table 1 To Regulation 6.38

TRE

The Total Resource Effectiveness index value is calculated using the following equation:

$$TRE = \frac{a + b*Flow^{0.88} + c*Flow + d*Flow*H_T + e(Flow*H_T)^{0.88} + f*Flow^{0.5}}{H.E.}$$

where:

- TRE = Total Resource Effectiveness index value.
- H.E. = Hourly emissions reported in kg/hr measured at full operating flowrate *.
- Flow = Vent stream flowrate (scm/min) at a standard temperature of 20 °C.*,**.
- H_T = Vent stream net heating value (MJ/scm), where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C, as in the definition of Flow.

a, b, c, d, e, and f are coefficients. The set of coefficients which apply to a process vent stream can be obtained from Table 2.

*Use EPA Publication 450/3-84-015 Appendix H for reference methods and procedures.

**For a Category E stream, the last term of the equation is modified to:

$$\frac{f (Flow * H_T)^{0.5}}{3.6}$$

TABLE 2 to REGULATION 6.38

Coefficients of the Total Resource-Effectiveness (TRE) Index Equation

A1. For Chlorinated Process Vent Streams, If $0 \leq$ Net Heating Value (MJ/scm) ≤ 3.5 :							
W = Vent Stream flowrate							
(scm/min)	a	b	c	d	e	f	
W < 13.5	48.73	0	0.404	-0.1632	0	0	
13.5 < W ≤ 700	42.35	0.624	0.404	-0.1632	0	0.0245	
700 < W ≤ 1400	84.38	0.678	0.404	-0.1632	0	0.0346	
1400 < W ≤ 2100	126.41	0.712	0.404	-0.1632	0	0.0424	
2100 < W ≤ 2800	168.44	0.747	0.404	-0.1632	0	0.0490	
2800 < W ≤ 3500	210.47	0.758	0.404	-0.1632	0	0.0548	

A2. For Chlorinated Process Vent Streams, If $3.5 <$ Net Heating Value (MJ/scm):							
W = Vent Stream flowrate							
(scm/min)	a	b	c	d	e	f	
W < 13.5	47.76	0	-0.292	0	0	0	
13.5 < W ≤ 700	41.58	0.605	-0.292	0	0	0.0245	
700 < W ≤ 1400	82.84	0.658	-0.292	0	0	0.0346	
1400 < W ≤ 2100	123.10	0.691	-0.292	0	0	0.0424	
2100 < W ≤ 2800	165.36	0.715	-0.292	0	0	0.0490	
2800 < W ≤ 3500	206.62	0.734	-0.292	0	0	0.0548	

B. For Nonchlorinated Process Vent Streams, If $0 \leq$ Net Heating Value (MJ/scm) ≤ 0.48 :							
W = Vent Stream flowrate							
(scm/min)	a	b	c	d	e	f	
W < 13.5	19.05	0	0.113	-0.214	0	0	
13.5 < W ≤ 1350	16.61	0.239	0.113	-0.214	0	0.0245	
1350 < W ≤ 2700	32.91	0.260	0.113	-0.214	0	0.0346	
2700 < W ≤ 4050	49.21	0.273	0.113	-0.214	0	0.0424	

C. For Nonchlorinated Process Vent Streams, If $0.48 <$ Net Heating Value (MJ/scm) ≤ 1.0 :							
W = Vent Stream flowrate							
(scm/min)	a	b	c	d	e	f	
W < 13.5	19.74	0	0.400	-0.202	0	0	
13.5 < W ≤ 1350	18.30	0.138	0.400	-0.202	0	0.0245	
1350 < W ≤ 2700	36.28	0.150	0.400	-0.202	0	0.0346	
2700 < W ≤ 4050	54.26	0.158	0.400	-0.202	0	0.0424	

D. For Nonchlorinated Process Vent Streams, If $1.9 < \text{Net Heating Value (MJ/scm)} \leq 3.6$:

W = Vent Stream flowrate

(scm/min)	a	b	c	d	e	f
W < 13.5	15.24	0	0.033	0	0	0
13.5 < W ≤ 1190	13.63	0.157	0.033	0	0	0.0245
1190 < W ≤ 2380	26.95	0.171	0.033	0	0	0.0346
2380 < W ≤ 3570	40.27	0.179	0.033	0	0	0.0424

E. For Nonchlorinated Process Vent Streams, If $3.6 < \text{Net Heating Value (MJ/scm)}$:

W = Vent Stream flowrate

(scm/min)	a	b	c	d	e	f
W < 13.5	15.24	0	0	0.0090	0	0
13.5 < W ≤ 1190	16.63	0	0	0.0090	0.0503	0.0245
1190 < W ≤ 2380	26.95	0	0	0.0090	0.0546	0.0346
2380 < W ≤ 3570	40.27	0	0	0.0090	0.0573	0.0424

REGULATION 6.39 Standard of Performance for Equipment Leaks of Volatile Organic Compounds in Existing Synthetic Organic Chemical and Polymer Manufacturing 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 leaks from synthetic organic chemical and polymer manufacturing equipment.

SECTION 1 Federal References

The federal regulation for new synthetic organic chemical manufacturing industry equipment leaks contained in 40 CFR Part 60 Subpart VV is hereby incorporated by reference, except this regulation shall only apply to affected facilities that commenced construction on or before January 5, 1981.

SECTION 2 Exemptions

This regulation shall not apply to affected facilities that are also subject to 40 CFR Part 63 Subpart H where such standards are applicable to the affected facility either directly or through incorporation by reference into another standard promulgated under 40 CFR Part 63.

SECTION 3 Summary

The federal regulation incorporated by reference, 40 CFR Part 60 Subpart VV, limits emissions of volatile organic compounds from equipment leaks in the synthetic organic chemical manufacturing industry. The synthetic organic chemical manufacturing industry is defined to be the industry that produces, as intermediates or final products, one or more of the chemicals listed in 40 CFR Part 60 Subpart VV Section 60.489. For this regulation, methyl tert-butyl ether, polyethylene, polypropylene, and polystyrene shall be added to this list.

SECTION 4 General Definition

In the federal regulation incorporated by reference, "Administrator", "EPA", and "Agency" shall be read as "District", and "this subpart" shall be read as "this regulation". However, such readings shall not be construed so as to abrogate EPA's authority; "District" is not hereby substituted for "EPA" insofar as equivalency determinations are concerned as defined under the Act Section 111(h)(3).

SECTION 5 Availability

Copies of the Code of Federal Regulations are available for sale from:

U. S. Government Printing Office

Superintendent of Documents

Mail Stop SSOP

Washington DC 20402-9328

Adopted v1/12-17-86; effective 12-17-86; amended v2/7-17-96.

**REGULATION 6.40 Standards of Performance for Gasoline Transfer to Motor Vehicles
(Stage II Vapor Recovery and Control Systems)**

**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 motor vehicle refueling at gasoline dispensing facilities.

SECTION 1 Definitions

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

- 1.1 "Air-to-Liquid Ratio Test" means a test used to determine the collection efficiency of a vacuum assist system as measured by the air-to-liquid ratio. The test procedure is found in TP-201.5 in the Guidance.
- 1.2 "Aspirator assist system" means a vapor recovery system that uses a vacuum created by a jet pump by which liquid gasoline is sprayed into the vapor return line in order to draw vapor from the fuel tank of the motor vehicle being refueled.
- 1.3 "Assist system" means a vapor recovery system that uses a vacuum to draw vapor from the fuel tank of the motor vehicle being refueled into the recovery system. An aspirator assist system and a vacuum assist system are both assist systems.
- 1.4 "Balanced assist system" means a group of interacting components using a vacuum-creating device at a gasoline dispenser to assist in the capture of vapor from a motor vehicle fuel tank during refueling, and a balance system for the return of vapor to a storage tank.
- 1.5 "Balance system" means a group of interacting components using the pressure created in a motor vehicle fuel tank to force vapor through a sealed vapor return line connected to a storage tank.
- 1.6 "Boot" means an accordion-like tubular cover used over the spout of a gasoline nozzle to provide a return path for vapor displaced during refueling.
- 1.7 "CARB" means California Air Resources Board.
- 1.8 "Centralized assist system" means a group of interacting components using a single, remote vacuum-generating device to create a vacuum at a gasoline dispenser for drawing vapor from a motor vehicle fuel tank to a storage tank.
- 1.9 "Check valve" means a valve in the nozzle or in the vapor recovery line between the nozzle and the storage tank that prevents vapor back-flow.
- 1.10 "Construction" means fabrication, erection, installation, or modification of a gasoline dispensing facility. Construction shall include installation of vapor recovery and control equipment, laying of underground pipe and dispenser pipe work, building of permanent storage structures, and other construction activities related to the gasoline dispensing facility.

- 1.11 "Certified Stage II system" or "CARB-certified system" means a Stage II system certified by CARB. To be CARB-certified, a system shall have been:
 - 1.11.1 Previously tested and approved by CARB,
 - 1.11.2 Assigned an executive order, and
 - 1.11.3 Found to have achieved a vapor recovery or removal efficiency of at least 95% by weight of vapor displaced during the dispensing of gasoline.
- 1.12 "Dynamic Back Pressure Test" means a test used to determine the pressure drop (flow resistance) through vapor balance recovery and Hirt vacuum assist systems (including nozzles, vapor hoses, swivels, dispenser piping, and underground piping) at prescribed flow rates, during which all nozzles that may operate simultaneously on one dispenser are tested simultaneously to determine whether the under-dispenser plumbing and the vapor recovery kit were installed correctly. The test procedure is found in Bay Area Source Test Procedure ST-27 in the Guidance.
- 1.13 "Executive order" means an order established by CARB consisting of a list of equipment, special conditions, and configurations identifying the specific balance or assist system that has been tested and demonstrated to be at least 95% efficient by weight.
- 1.14 "Faceplate" means a soft, donut-shaped device attached to the boot of a nozzle that forms a tight seal with a motor vehicle fill pipe during refueling.
- 1.15 "Gasoline" means any petroleum distillate having a Reid Vapor Pressure of four pounds per square inch or greater. Gasoline shall also include gasoline oxygenate blends (gasoline blended with minor amounts of alcohols such as methanol, ethanol, and tertiary butanol or ethers such as methyl-tertiary butyl ether), but shall exclude E85.
- 1.16 "Gasoline dispensing facility" means a stationary source where gasoline is dispensed into motor vehicle fuel tanks or portable containers from a storage tank with a capacity greater than 250 gallons, and shall include storage tanks and associated piping (including co-vault above-ground systems), dispensers (including vapor hoses, swivel nozzles, and piping), and all on-site equipment connecting them.
- 1.17 "Guidance" means EPA 450/3-91-022b *Technical Guidance - Stage II Vapor Recovery Systems for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities* (11-91).
- 1.18 "Independent small business marketer of gasoline" means a person engaged in the marketing of gasoline who:
 - 1.18.1 Is not a refiner, or a person who controls, is controlled by, or is under common control with, a refiner, or otherwise directly or indirectly affiliated with a refiner or with a person who controls, is controlled by, or is under a common control with a refiner (unless the sole affiliation is by means of a supply contract or an agreement or contract to use a trademark, trade name, service mark, or other identifying symbol or name owned by such refiner or any such person),
 - 1.18.2 Owns only one gasoline dispensing facility, and
 - 1.18.3 Has annually averaged non-gasoline business sales (Consumer Price Index-adjusted 1993 dollars) of less than \$25,000 dollars per month.
- 1.19 "Leak Test" means a test used to quantify the vapor tightness of a Stage II system, conducted once all equipment has been connected. The test procedure is found in the Bay Area Source Test Procedure ST-30 in the Guidance.

- 1.20 "Liquid Blockage Test" means a test used to determine if the piping configuration is correct and to detect low points in the piping where the accumulation of liquid condensate may cause a blockage that may restrict the flow of vapor and decrease a Stage II system's vapor collection efficiency. The test procedure is found in San Diego Air Pollution Control District Test Procedure TP-91-2 in the Guidance.
- 1.21 "Liquid Removal Device Test" means a test used to quantify the removal of liquid gasoline from the vapor passage of coaxial hoses and underground piping equipped with a liquid removal device. The test procedure is found in the Bay Area Source Test Procedure ST-37 in the Guidance.
- 1.22 "Modification" or "modify" means a physical change to a Stage II system, including replacement or correction of underground piping between a gasoline dispenser and a storage tank, but excludes:
- 1.22.1 Replacement of a hose, breakaway, or nozzle,
 - 1.22.2 Replacement of up to 25% of the total number of gasoline dispensers if the underground piping is not modified,
 - 1.22.3 Extension of a drop fill tube or replacement of a float valve,
 - 1.22.4 Replacement of an underground storage tank cap, collar, seal, adapter, or pressure/vacuum valve,
 - 1.22.5 Replacement of plumbing or components inside a gasoline dispenser,
 - 1.22.6 Replacement of manhole or access port components,
 - 1.22.7 Replacement of a fillport adapter, or
 - 1.22.8 Installation or replacement of an isolation valve or check valve.
- 1.23 "Motor vehicle" means a vehicle, machine, or mechanical contrivance propelled by an internal combustion engine and operated upon the public highways, and any trailer or semi-trailer attached to or having its front end supported by a motor vehicle.
- 1.24 "Onboard refueling vapor recovery equipment" means a system on a motor vehicle that captures vapor from the vehicle's fuel tank during refueling.
- 1.25 "Owner or operator" means a person who owns, leases, operates, manages, supervises, or controls (directly or indirectly) a gasoline dispensing facility.
- 1.26 "Processor" or "vapor processor" means a thermal oxidizer system that transports hydrocarbon vapor from an underground storage tank to a destruction device or afterburner.
- 1.27 "Refiner" means a person engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through the redistillation, cracking, or reforming of unfinished petroleum derivatives, and whose total refinery capacity is 65,000 barrels per day or greater. In determining the total refinery capacity, the capacity of the refineries of any persons who control, are controlled by, or are under common control with the refiner shall be included with the capacity of the refiner.
- 1.28 "Representative" or "facility representative" means a person who has been trained to serve at a gasoline dispensing facility as prescribed in Section 3.
- 1.29 "Stage II vapor recovery and control system" or "Stage II system" means a vapor-gathering system equipped to be capable of collecting at least 95% of the hydrocarbon vapor discharged during motor vehicle refueling and a vapor disposal system capable of processing the hydrocarbon vapor so as to prevent emissions into the atmosphere.
- 1.30 "Vacuum assist system" means a balanced assist system or centralized assist system.

- 1.31 "Vapor Space Tie Test" means a test used to determine whether a storage tank is properly manifolded into a Stage II system. The test procedure is found in San Diego Air Pollution Control District Procedure TP-91-2 in the Guidance.

SECTION 2 Applicability

2.1 Applicability:

- 2.1.1 This regulation applies to the refueling of motor vehicles at a gasoline dispensing facility. Unless exempted, a gasoline dispensing facility is an affected facility. A gasoline dispensing facility that has ever been subject to this regulation shall remain subject to it as long as the facility is a gasoline dispensing facility, unless exempted by Section 2.2.3.
- 2.1.2 This regulation does not apply to the initial fueling of new motor vehicles at a motor vehicle assembly facility.

2.2 Exemptions:

- 2.2.1 Except as provided in Section 2.1.1, a gasoline dispensing facility whose average monthly throughput does not exceed 10,000 gallons of gasoline is exempted from Sections 3 to 6. The owner or operator of the facility shall submit records to the District by April 15 of each year, demonstrating that it met those conditions during the previous calendar year. For a facility operating less than twelve months during the previous calendar year, the throughput shall be averaged over those months during which the facility dispensed gasoline.
- 2.2.2 Except as provided in Section 2.1.1, a gasoline dispensing facility owned or operated by an independent small business marketer whose average monthly throughput does not exceed 25,000 gallons of gasoline is exempted from Sections 3 to 6. The owner or operator of the facility shall submit records to the District by April 15 of each year, demonstrating that it met those conditions during the previous calendar year. For a facility operating less than twelve months during the previous calendar year, the throughput shall be averaged over those months during which the facility dispensed gasoline.
- 2.2.3 A motor vehicle rental facility or motor vehicle assembly facility that refuels only motor vehicles in its fleet, at least 95% of which are equipped with onboard refueling vapor recovery equipment, is exempted from Sections 3 to 6, if the owner or operator of the facility:
- 2.2.3.1 Submits a statement to the District identifying the number of vehicles in the fleet at the time of the statement and certifying that the percentage of those vehicles equipped with onboard refueling vapor recovery equipment is at least 95%,
- 2.2.3.2 Updates the statement required by Section 2.2.3.1 annually, and
- 2.2.3.3 Decommissions any existing Stage II system by:
- 2.2.3.3.1 Preparing a decommissioning plan on a form to be provided by the District, with the plan to include a diagram of the installed Stage II system, a description of how the Stage II system will be disconnected, a diagram of the gasoline delivery system after disconnection of the Stage II system, and a scheduled date for disconnecting the Stage II system,
- 2.2.3.3.2 Submitting the decommissioning plan to the District at least 30 days before the

- 2.2.3.3.3 scheduled date for disconnecting the Stage II system, and
Disconnecting the Stage II system at a date and time to be approved by the District.

SECTION 3 Standards for Gasoline Dispensing Facilities

- 3.1 No owner or operator of a gasoline dispensing facility shall install, permit the use of, or allow the transfer of gasoline from a gasoline dispensing unit to a motor vehicle fuel tank or container, unless the facility is equipped with a CARB-certified system complying with this regulation.
- 3.2 A Stage II system shall be maintained in good working order in accordance with the manufacturer's plans, specifications, maintenance requirements, and CARB certification.
- 3.3 No elements or components of a Stage II system shall be modified, removed, replaced, or otherwise rendered inoperative in a manner that would prevent the system from performing in accordance with the requirements of the applicable CARB executive order, unless approved by the District. The District may approve a change to a Stage II system if a needed component is not obtainable and the component will be replaced with one providing equivalent emission reductions.
- 3.4 Equipment used in a Stage II system shall:
- 3.4.1 Be manufactured by the original manufacturer or rebuilt by a rebuilder certified by CARB,
- 3.4.2 Have the name of the certified manufacturer or certified rebuilder permanently affixed to it,
- 3.4.3 Have only coaxial nozzles and hoses on balance systems used to dispense gasoline and recover vapor,
- 3.4.4 Have vapor risers, for balance systems and balanced assist systems, of one inch inside diameter galvanized pipe or larger if two or more nozzles feed into them,
- 3.4.5 If equipped with rubber hosed vapor connectors (riser-to-dispenser), have UL approval for gasoline transmission,
- 3.4.6 Have an assist system using a processing unit that is located in a safe and accessible location for compliance inspections,
- 3.4.7 Not have a remote vapor check valve or associated equipment for operating equipment on any vapor balance recovery or Hirt vacuum assist system,
- 3.4.8 Be operated and maintained so as to be leak-free, vapor tight, and in good working order,
- 3.4.9 Be free of the following defects:
- 3.4.9.1 Absence or disconnection of a component required by the CARB certification,
- 3.4.9.2 A vapor hose:
- 3.4.9.2.1 Crimped or flattened in a manner that will constrict the flow of vapor in the vapor return line,
- 3.4.9.2.2 With a cut, tear, leak, kink, more than six inches of hose resting on the dispenser island or ground when in the hang-up position, or disconnection of an inner spring from a hose end fitting, or
- 3.4.9.2.3 With a pressure drop through the hose exceeding by a factor of two or more the value specified for that certified system,
- 3.4.9.3 A nozzle:

- 3.4.9.3.1 With a boot that is cut, torn, or damaged,
- 3.4.9.3.2 With a boot or faceplate that cannot achieve a seal,
- 3.4.9.3.3 With a malfunctioning nozzle shut-off mechanism, or
- 3.4.9.3.4 With a leak, a bent or loose spout, or a clogged vapor port on the spout,
- 3.4.9.4 A vapor return line, including components such as swivels, anti-recirculation valves and underground piping, that malfunctions or is blocked, cracked, crimped, trapped, or restricted,
- 3.4.9.5 An inoperative or malfunctioning vapor-processing device,
- 3.4.9.6 An inoperative or malfunctioning vacuum-producing device,
- 3.4.9.7 An inoperative or malfunctioning pressure/vacuum relief valve, vapor check valve, or dry break, or
- 3.4.9.8 A defect substantially impairing the effectiveness of the system in reducing the emission of air contaminants.
- 3.5 Tagged equipment:
 - 3.5.1 Upon identification of a defect described in Section 3.4.9, the owner or operator of a gasoline dispensing facility shall ensure that all gasoline dispensing equipment for which vapor recovery has been impaired is tagged "Out of Service." The tagged equipment shall be rendered inoperable and the tags shall not be removed until the defective equipment has been repaired, replaced, or adjusted to permit proper operation.
 - 3.5.2 In the case of a defect identified by the District, tagged equipment shall be rendered inoperable and the tags shall not be removed until:
 - 3.5.2.1 The District has been notified of the repairs, and
 - 3.5.2.2 The tagged equipment either has been reinspected, or the District has authorized its use pending reinspection.
 - 3.5.3 If a District inspector determines that a component is not in good working order, but does not contain a defect listed in Section 3.4.9, the District shall provide the owner or operator with a notice specifying the basis on which the component is not in good working order. If within 15 days the owner or operator provides the District with adequate evidence that the component is in good working order, the owner or operator shall not be considered in violation of Section 3.
- 3.6 Facility representative:
 - 3.6.1 The owner or operator of a gasoline dispensing facility shall ensure that at least one person, designated as facility representative, receives adequate training and instruction on the operation and maintenance of the Stage II system, including how to comply with this regulation. Training and instruction shall include:
 - 3.6.1.1 How the installed system operates and what it is designed to do,
 - 3.6.1.2 How to conduct daily start-up and shut-down of the system, including how to conduct daily inspections of the system equipment,
 - 3.6.1.3 How to avoid causing the defects described in Section 3.4.9,
 - 3.6.1.4 How to recognize when faulty equipment should be repaired or replaced, including the need to prevent voiding an equipment warranty, and
 - 3.6.1.5 When equipment must be tagged as required by Section 3.5.
 - 3.6.2 The owner or operator of a gasoline dispensing facility shall post the name of the current

- facility representative on a sign where it is clearly visible, readily accessible to the facility's employees, and kept in good repair.
- 3.6.3 The owner or operator of a gasoline dispensing facility shall prepare a training certificate for each person trained as a facility representative.
- 3.7 Daily inspections: An owner or operator of a gasoline dispensing facility shall ensure that at least once during every 24 hour period for which the system was in operation during that day a facility representative visually inspects the equipment for defects. An inspection report shall be made every 24 hours recording deficiencies, repairs, or maintenance on the system. The inspection reports shall be recorded in a nonfalsifiable format that can be verified by the District.
- 3.8 Operating instructions and contact information:
- 3.8.1 The owner or operator of a gasoline dispensing facility shall post operating instructions on the front of each gasoline dispenser connected to the system. The instructions shall be clearly visible to the public at any normal refueling position and kept in good repair. The instructions shall describe clearly how to refuel vehicles correctly with the vapor recovery nozzles and include a warning not to attempt continued refueling after automatic shut-off of the nozzle (an indication that the vehicle fuel tank is full).
- 3.8.2 The owner or operator of a gasoline dispensing facility shall post a toll-free telephone number for the facility, so that the public may report any problems experienced with the Stage II system.

SECTION 4 Testing Requirements

- 4.1 The owner or operator of a gasoline dispensing facility shall test the Stage II system as required by this section in order to demonstrate compliance with this regulation.
- 4.2 The owner or operator of a gasoline dispensing facility shall notify the District in writing of a scheduled test at least 5 business days before the testing date, identifying each test to be conducted, the date and time of each test, and the name of the company that will conduct each test. The District may require a test to be rescheduled if a District representative cannot be available for the scheduled date or time.
- 4.3 The District may require a test to be aborted if the duration of the test is greater than 2 hours, improper test procedures are used, or sufficient tools, reference materials, test equipment, or repair parts or equipment are not available at the facility.
- 4.4 If the Stage II system or any of its components fails the test, the system shall be tagged as provided by Section 3.5 and shall not be used for refueling until it is repaired or replaced and passes the test.
- 4.5 No later than 15 days after passing a test, the person conducting the test shall certify the results to the District in a written record that includes the date of the test and the results.
- 4.6 Preliminary test:
- 4.6.1 The owner or operator of a gasoline dispensing facility constructing or modifying a Stage II system shall arrange for a Leak Test to be conducted after installing all underground piping but before installing any above-ground components.
- 4.6.2 If the underground components of the Stage II system pass the Leak Test, then the underground components may be covered and sealed.
- 4.7 Initial compliance test:

- 4.7.1 The owner or operator of a gasoline dispensing facility shall arrange for an initial compliance test to be conducted no later than 30 days after the first date gasoline is delivered to the facility after a Stage II system has been installed (including all underground and above-ground components and associated piping).
- 4.7.2 The tests to be conducted during the initial compliance test shall be based on the type of Stage II system installed. Unless the District approves eliminating a test, the initial compliance test shall include a Leak Test of the entire Stage II system, an Air-to-Liquid Ratio Test (including the 10-Gallon per Minute Limitation Procedure), a Dynamic Back Pressure Test, a Vapor Space Tie Test, a Liquid Removal Device Test, and a Liquid Blockage Test.
- 4.8 Annual CARB test:
 - 4.8.1 The owner or operator of a gasoline dispensing facility shall arrange for a CARB test to be conducted every twelve months.
 - 4.8.2 The tests to be conducted during the annual CARB test shall be based on the type of Stage II system installed. Unless the District approves eliminating a test, the annual CARB test shall include a Leak Test, an Air-to-Liquid Ratio Test (including the 10-Gallon per Minute Limitation Procedure), and a Liquid Removal Device Test. The District may also require a Dynamic Back Pressure Test, a Vapor Space Tie Test, and a Liquid Blockage Test.
- 4.9 Recertification test:
 - 4.9.1 The owner or operator of a gasoline dispensing facility shall arrange for a recertification test to be conducted every 5 years.
 - 4.9.2 The tests to be conducted during the recertification test shall be based on the type of Stage II system installed. Unless the District approves eliminating a test, the recertification test shall include the same tests conducted during the initial compliance test.

SECTION 5 Permitting of Gasoline Dispensing Facilities

- 5.1 Construction permits:
 - 5.1.1 The owner or operator of a gasoline dispensing facility shall obtain a construction permit from the District before constructing or modifying the facility. A construction permit issued by the District shall remain in effect until it expires, or until an operating permit is issued or denied.
 - 5.1.2 The owner or operator of the facility shall notify the District no later than 30 days prior to the construction or modification of a Stage II system, by submitting a construction permit application on a form provided by the District. The application shall include:
 - 5.1.2.1 The name, address, and phone number of the facility and the contractor installing or modifying the Stage II system,
 - 5.1.2.2 The CARB executive order number and exhibit for the Stage II system to be installed, along with a construction blueprint (consisting of underground vapor recovery piping size, manifolding pipes between dispenser banks, and underground storage tanks) and a copy of the system's operating instructions,
 - 5.1.2.3 The number of nozzles (excluding diesel and kerosene), the nozzle model number and manufacturer, and the dispenser model and manufacturer,

- 5.1.2.4 The average monthly throughput of gasoline, and
- 5.1.2.5 The scheduled dates of installation and completion of the Stage II system. Completion of installation includes successfully passing the preliminary test and the initial compliance test.
- 5.2 Operating permits:
 - 5.2.1 The owner or operator of a gasoline dispensing facility shall demonstrate compliance with this regulation before the District issues an operating permit for the facility. A compliance demonstration shall include:
 - 5.2.1.1 Passing the preliminary test and the initial compliance test, and
 - 5.2.1.2 Passing the District's initial inspection.
 - 5.2.2 An operating permit will be renewed if the gasoline dispensing facility is operating in compliance with this regulation.

SECTION 6 Recordkeeping

- 6.1 The owner or operator of a gasoline dispensing facility shall maintain the following records at the facility, and provide them to the District at the time of the District's request:
 - 6.1.1 All executive orders for the Stage II system,
 - 6.1.2 Training certificates for all facility representatives,
 - 6.1.3 Maintenance and repair records for the Stage II system for the last 2 years, including type and duration of any system failures, dates of repairs and replacements, identity of parts repaired or replaced, and locations of parts repaired or replaced, and
 - 6.1.4 Daily inspection reports for the last 2 years.
- 6.2 The owner or operator of a gasoline dispensing facility shall maintain the following records at the facility or off-site, and provide them to the District within three business days of the District's request:
 - 6.2.1 Names, addresses, and telephone numbers of companies installing Stage II system equipment, the identity of the equipment installed, and the dates of installation,
 - 6.2.2 Results of preliminary tests and compliance tests, including test dates and the names, addresses, and telephone numbers of the persons conducting the tests,
 - 6.2.3 Maintenance and repair records for the Stage II system for the last 3-5 years, including type and duration of any system failures, dates of repairs and replacements, identity of parts repaired or replaced, and locations of parts repaired or replaced,
 - 6.2.4 Daily inspection reports for the last 3-5 years, and
 - 6.2.5 Monthly throughput reports.

Adopted v1/12-16-92; effective 12-16-92; amended v2/8-18-93, v3/10-15-08.

REGULATION 6.41 Standards of Performance for Existing 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 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 existing 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 commenced before the effective date of this regulation. Affected facilities which combine and combust MSW, solid waste, or hazardous waste with medical waste shall be subject to this regulation. Affected facilities which combust only MSW shall be subject to Regulation 7.76.
- 1.2 Physical or operational changes made to an existing unit to comply with this regulation shall be considered a modification or reconstruction and shall not subject an existing unit to Regulation 7.78.

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 device for which construction, modification, or reconstruction commenced before the effective date of this regulation, that combusts material which, included in the waste stream, would be medical waste.
- 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 "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 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.
- 2.18 "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 a 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 one 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, 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 condensable metals emitted from units For purposes of this regulation, particulate matter shall serve as a surrogate for the measurement and control 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" (MSW) means household solid waste and commercial solid waste. Medical waste shall not be considered to be MSW and is regulated by Regulation 6.42 or 7.77.
- 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. 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" (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 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 and 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 Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (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 hydrogen chloride emission rate that would occur from the combustion of medical waste in the absence of hydrogen chloride emissions control.
- 2.51 "Uncontrolled sulfur dioxide emission rate" means the sulfur dioxide emission rate that would occur from the combustion of medical waste in the absence of sulfur dioxide 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 229 milligrams per dry standard cubic meter (0.1 grains per dry standard cubic foot) of exhaust gas, corrected to 7% oxygen (dry basis); or
 - 3.1.2 Carbon monoxide in excess of 100 parts per million by volume corrected to 7% oxygen (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 183 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) of exhaust gas, corrected to 7% oxygen (dry basis);
 - 3.2.2 Carbon monoxide emissions in excess of 100 parts per million by volume corrected to 7% oxygen (dry basis);
 - 3.2.3 Hydrochloric acid (HCl) emissions in excess of the calculated adjusted significance level in Regulation 5.12;
 - 3.2.4 Sulfur dioxide (SO₂) 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% oxygen (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities which 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 183 milligrams per dry standard cubic meter (0.08 grains per dry standard cubic foot) of exhaust gas corrected to 7% oxygen (dry basis);
 - 3.3.2 Carbon monoxide emissions in excess of 100 parts per million by volume corrected to 7% oxygen (dry basis);
 - 3.3.3 Hydrochloric acid (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% oxygen (dry basis), whichever is less stringent;
 - 3.3.4 Sulfur dioxide (SO₂) 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% oxygen (dry basis), whichever is less stringent. Excluded from this provision are emissions from affected facilities which combust only medical waste; or
 - 3.3.5 Visible air contaminants in excess of 10% opacity.

SECTION 4 Standards for Operating Practices

The requirements for unit operating practices 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 1.0 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 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, 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 which has not been combined with medical waste in a unit, and shall comply with Regulation 6.41 or 7.78.
- 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 which is determined to be hazardous waste shall be disposed of according to the regulations of the Division of Waste Management. Ash which 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 same from waste stream; and
 - 4.8.6 Employee safety, health, training and equipment to be used in inspections.
 - 4.8.7 The owner or operator shall have a program to inspect all waste entering the source for combustion that is approved by the Kentucky Division of Waste Management. This program to exclude hazardous waste shall include:
 - 4.8.7.1 Random inspections in time, but uniformly distributed to all contributing waste sources based on 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 per section 4.8.5; and
 - 4.8.7.3 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.
- 4.9 Owners or operators of affected facilities which have an incinerator without a secondary

chamber but are equipped with an afterburner operated at a temperature of $982 + 93^{\circ}\text{C}$ ($1800 \pm 200^{\circ}\text{F}$) may choose to meet a more restrictive opacity standard of 0% in lieu of meeting the secondary chamber requirement while the affected facility is combusting medical waste. All other emission standards listed in section 3 and the operating practices listed in this section shall apply.

SECTION 5 Operator Training

The requirements for operator training apply to all units.

- 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 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 and update on an annual basis, and provide the District with one copy of a site specific operations 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

- 6.1 On or before the completion of the compliance timetable in section 8 for an 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 and this section and shall furnish the District a written report of the results of the performance tests. For standards listed in sections 3 and 4, the corresponding compliance and test methods listed in 40 CFR Part 60 Appendix A shall apply except that the length of time allowed for start-ups and shutdowns shall be three hours.
- 6.2 The owner or operator of an affected facility with a unit capacity of 500 pounds per hour or more shall install and maintain CEMS for oxygen and carbon monoxide. The owner or operator shall also install, calibrate, operate, and maintain an electronic data acquisition system that shall monitor the following parameters of proper unit functioning: 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 four hour block averages.
- 6.3 Additional CEMS requirements.
- 6.3.1 CEMS data, if required, shall be used to determine compliance with emission standards and operating practice standards.
- 6.3.2 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.
- 6.3.3 All valid CEMS data, if required, shall be used in calculating emission rates and percent reductions even if the minimum CEMS data requirements in this regulation are not met.
- 6.3.4 The procedures under 40 CFR Section 60.13 shall be followed for installation, evaluation, and operation of the CEMS.
- 6.3.5 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 40 CFR 60 Appendix A 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.
- 6.3.6 CEMS shall conform to the applicable performance specifications in 40 CFR Part 60 Appendix B.
- 6.3.7 The requirements of 40 CFR Part 60 Appendix F shall be met in the operation of CEMS.
- 6.3.8 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:
- 6.3.8.1 Waste feed rate,
- 6.3.8.2 Ph values in the packed scrubber solution, if applicable, and
- 6.3.8.3 Time and duration of emergency by-pass of any emission control device.
- 6.3.9 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 own expense, a dedicated telephone access to the data logger.

SECTION 7 Reporting and Recordkeeping Requirements

For standards listed in sections 3 and 4, the corresponding reporting and recordkeeping requirements shall apply.

- 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 sulfur dioxide, nitrogen oxides, or carbon monoxide 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 sulfur dioxide, nitrogen oxides, or carbon monoxide 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 sulfur dioxide, nitrogen oxides, and carbon monoxide CEMs drift tests and accuracy assessments 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 401 KAR 59:021 Section 11 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.
- 7.4 The owner or operator of an affected facility shall submit quarterly compliance reports to the District containing the information recorded under 401 KAR 59:023 Section 1 and 401 KAR 59:005 Section 3.(3) for all records required by this regulation which are applicable to the facility. Both a printed report and computer disks shall be formatted to the District's specifications. The reports shall be postmarked by the 30th day following the end of each calendar quarter.
- 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 401 KAR 59:023 Section 4.(7) and has been submitted to the Division of Waste Management in a frequency required by the Division of Waste Management.

SECTION 8 Compliance Timetable

- 8.1 Except as provided in section 8.2, planning, awarding of contracts and installation of equipment capable of attaining the level of emission standards on operating standards established in this regulation shall be completed within two years after the effective date of this regulation. Final compliance with this regulation, except as provided in section 8.2, should have been demonstrated by December 31, 1994.
- 8.2 Planning, awarding of contracts and installation of equipment and procedures capable of attaining the level of materials separation specified in section 4 were to have been completed by December 31, 1992. The initial demonstration of compliance with materials separation provisions (percent reduction) specified in Regulation 7.76 shall be completed by December 31, 1994. The training requirements in section 5.1 were to have been completed by February 7, 1992.

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

REGULATION 6.42 Reasonably Available Control Technology Requirements for Major Volatile Organic Compound- and Nitrogen Oxides-Emitting 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 orders, rules, and regulations necessary or proper to accomplish the purposes of KRS Chapter 77. This regulation establishes the requirements for Reasonably Available Control Technology (RACT) determination, demonstration, and compliance for Volatile Organic Compound (VOC) and Nitrogen Oxides (NO_x) emitting facilities for new or renewed operating permit applications.

SECTION 1 Applicability

1.1 This regulation applies to the VOC emissions from all VOC-emitting facilities located at all major VOC-emitting stationary sources except those facilities whose VOC emissions are specifically and separately regulated by any of the following:

1.1.1 The following Regulation 6 regulations:

Regulation 6.12 - *Standard of Performance for Existing Asphalt Paving Operations*

Regulation 6.13 - *Standard of Performance for Existing Storage Vessels for Volatile Organic Compounds*

Regulation 6.15 - *Standards of Performance for Gasoline Transfer to Existing Service Station Storage Tanks (Stage I Vapor Recovery)*

Regulation 6.16 - *Standard of Performance for Existing Large Appliance Surface Coating Operations*

Regulation 6.17 - *Standard of Performance for Existing Automobile and Light Duty Truck Surface Coating Operations*

Regulation 6.18 - *Standards of Performance for Existing Solvent Metal Cleaning Equipment*

Regulation 6.19 - *Standard of Performance for Existing Metal Furniture Surface Coating Operations*

Regulation 6.20 - *Standard of Performance for Existing Bulk Gasoline Plants*

Regulation 6.21 - *Standard of Performance for Existing Gasoline Loading Facilities at Bulk Terminals*

Regulation 6.22 - *Standard of Performance for Existing Volatile Organic Materials Loading Facilities*

Regulation 6.24 - *Standard of Performance for Existing Sources Using Organic Materials*

Regulation 6.26 - *Standard of Performance for Existing Volatile Organic Compound Water Separators*

Regulation 6.29 - *Standard of Performance for Existing Graphic Arts Facilities Using Rotogravure and Flexography*

- Regulation 6.30 - *Standard of Performance for Existing Factory Surface Coating Operations of Flat Wood Paneling*
- Regulation 6.31 - *Standard of Performance for Existing Miscellaneous Metal Parts and Products Surface Coating Operations*
- Regulation 6.35 - *Standard of Performance for Existing Fabric, Vinyl, and Paper Surface Coating Operations*
- Regulation 6.38 - *Standard of Performance for Existing Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industries*
- Regulation 6.39 - *Standard of Performance for Equipment Leaks of Volatile Organic Compounds in Existing Synthetic Organic Chemical and Polymer Manufacturing Plants*
- Regulation 6.40 - *Standards of Performance for Gasoline Transfer to Motor Vehicles (Stage II Vapor Recovery and Control)*
- Regulation 6.43 - *Volatile Organic Compound Emission Reduction Requirements*
- Regulation 6.44 - *Standards of Performance for Existing Commercial Motor Vehicle and Mobile Equipment Refinishing Operations*
- Regulation 6.45 - *Standards of Performance for Existing Solid Waste Landfills*
- Regulation 6.48 - *Standard of Performance for Existing Bakery Oven Operations,*

1.1.2 The following Regulation 7 regulations:

- Regulation 7.11 - *Standard of Performance for New Asphalt Paving Operations*
- Regulation 7.12 - *Standard of Performance for New Storage Vessels for Volatile Organic Compounds*
- Regulation 7.14 - *Standard of Performance for Selected New Petroleum Refining Processes and Equipment*
- Regulation 7.15 - *Standards of Performance for Gasoline Transfer to New Service Station Storage Tanks (Stage I Vapor Recovery)*
- Regulation 7.18 - *Standards of Performance for New Solvent Metal Cleaning Equipment*
- Regulation 7.20 - *Standard of Performance for New Gasoline Loading Facilities at Bulk Plants*
- Regulation 7.22 - *Standard of Performance for New Volatile Organic Materials Loading Facilities*
- Regulation 7.25 - *Standard of Performance for New Sources Using Volatile Organic Compounds*
- Regulation 7.35 - *Standard of Performance for New Ethylene Producing Plants*
- Regulation 7.36 - *Standard of Performance for New Volatile Organic Compound Water Separators*
- Regulation 7.51 - *Standard of Performance for New Liquid Waste Incinerators*
- Regulation 7.52 - *Standard of Performance for New Fabric, Vinyl, and Paper Surface Coating Operations*
- Regulation 7.55 - *Standard of Performance for New Insulation of Magnet Wire*
- Regulation 7.56 - *Standard of Performance for Leaks from New Petroleum Refinery Equipment*
- Regulation 7.57 - *Standard of Performance for New Graphic Arts Facilities Using Rotogravure and Flexography*

- Regulation 7.58 - *Standard of Performance for New Factory Surface Coating Operations of Flat Wood Paneling*
- Regulation 7.59 - *Standard of Performance for New Miscellaneous Metal Parts and Products Surface Coating Operations*
- Regulation 7.60 - *Standard of Performance for New Synthesized Pharmaceutical Product Manufacturing Operations*
- Regulation 7.79 - *Standards of Performance for New Commercial Motor Vehicle and Mobile Equipment Refinishing Operations*
- Regulation 7.81 - *Standard of Performance for New or Modified Bakery Oven Operations, and*

1.1.3 The following subparts of 40 CFR Part 60 as specified in Regulation 7.02 *Federal New Source Performance Standards Incorporated By Reference*:

- K - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978
- Ka - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification commenced After May 18, 1978, and Prior to July 23, 1984
- Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification commenced after July 23, 1984
- EE - Standards of Performance for Surface Coating of Metal Furniture
- MM - Standards of Performance for Automobile and Light-Duty Truck Surface Coating Operations
- QQ - Standards of Performance for The Graphic Arts Industry: Publication Rotogravure Printing
- RR - Standards of Performance for Pressure Sensitive Tape and Label Surfaces Coating Operations
- SS - Standards of Performance for Industrial Surface Coating: Large Appliances
- TT - Standards of Performance for Metal Coil Surface Coating
- VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry
- WW - Standards of Performance for the Beverage Can Surface Coating Industry
- XX - Standards of Performance for Bulk Gasoline Terminals
- BBB - Standards of Performance for the Rubber Tire Manufacturing Industry
- DDD - Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Polymer Manufacturing Industry
- FFF - Standards of Performance for Flexible Vinyl and Urethane Coating and Printing
- GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries
- HHH - Standards of Performance for Synthetic Fiber Production Facilities
- III - Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes
- JJJ - Standards of Performance for Petroleum Dry Cleaners

- KKK - Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants
- NNN - Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations
- QQQ - Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems
- RRR - Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes
- SSS - Standards of Performance for Magnetic Tape Coating Facilities
- TTT - Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines
- VVV - Standards of Performance for Polymeric Coating of Supporting Substrates Facilities
- WWW - Standards of Performance for Municipal Solid Waste Landfills.

- 1.2 This regulation applies to the NO_x emissions from all NO_x-emitting facilities located at all major NO_x-emitting sources except for those NO_x-emitting facilities that have been or would be subject to NO_x review pursuant to 40 CFR Section 52.21 and Regulation 2.05 *Prevention of Significant Deterioration of Air Quality* after November 15, 1990, or to review under 40 CFR Part 51 Appendix S and Regulation 2.04 *Construction or Modification of Major Sources In or Impacting Upon Non-Attainment Areas (Emission Offset Requirements)* after November 15, 1992.
- 1.3 The requirements of Sections 3, 4, and 5 do not apply to:
- 1.3.1 Facilities that are exempt from the air permitting requirements of Regulation 2.02 *Air Pollution Regulation Requirements and Exemptions*,
 - 1.3.2 Facilities that are used for emergency purposes only, as referenced in Regulation 1.07 *Emissions During Startups, Shutdowns, Malfunctions, and Emergencies*. Peaking units used for routine peaking purposes do not qualify for this exemption, or
 - 1.3.3 NO_x-emitting facilities (to the extent necessary to avoid excess reductions) for which EPA determines (when EPA approves a plan or plan revision) that either of the following occurs:
 - 1.3.3.1 Net air quality benefits are greater in the absence of reductions of NO_x from the facilities, or
 - 1.3.3.2 Additional reductions of NO_x would not contribute to attainment of the national ambient air quality standard for ozone in the area.

SECTION 2 Compliance Requirements

Facilities subject to this regulation shall comply with Section 3 and the RACT emission-limiting standards and any RACT emission technology determined pursuant to the procedures of Section 4.

SECTION 3 Operating Permit Requirements

- 3.1 The owner or operator of any facility subject to this regulation shall apply for a new or revised permit to operate in accordance with this section by October 1, 1994, unless a later filing date is specified by the District in writing.
- 3.2 If the existing operating permit for any facility subject to this regulation would expire between

the effective date of this regulation and October 1, 1995, or any later filing date specified by the District, then the expiration date of that permit is extended until October 1, 1995, or that later date. This provision shall not apply in a revocation or suspension of a permit pursuant to Regulation 2.09 *Causes for Permit Suspension*.

SECTION 4 RACT Determination Procedure

4.1 VOC-emitting facilities covered by a Control Techniques Guidelines (CTG) or an Alternative Control Techniques (ACT) Document

4.1.1 Each applicant for a new or revised operating permit for a facility for which EPA has published a CTG or ACT document as of the filing deadline for the permit shall be required to propose RACT emission-limiting standards and RACT emission control technology to be imposed by the new or revised operating permit, taking into account the recommendations set forth in the applicable CTG or ACT for the facility. The operating permit application shall include a schedule for implementing the recommended RACT measures as expeditiously as practicable but no later than May 31, 1995.

4.1.2 The District shall make a case-by-case determination of RACT based on the applicant's proposal and the following:

4.1.2.1 The information contained in any applicable CTG or ACT document published by EPA,

4.1.2.2 Emission-limiting standards and emission control technology established as RACT in the implementation plan of any state for that class or category of facility,

4.1.2.3 The technological feasibility of various emission-limiting standards or emission control technology alternatives, taking into account design features of the facility and engineering considerations relevant to retrofitting emission controls to the facility,

4.1.2.4 The economic feasibility of various emission-limiting standards or emission control technology alternatives, including consideration of the cost-effectiveness of available technologies in reducing emissions of VOC from the facility, and

4.1.2.5 All scientific, engineering, economic, and technical material or other relevant information, including compliance test results from the affected facility or substantially similar facilities, that may be available to the District.

4.2 VOC-emitting facilities not covered by a CTG or an ACT Document

4.2.1 Each applicant for a new or revised operating permit under Section 3 for a facility for which EPA has not published a CTG or ACT document as of the filing deadline for the permit may propose RACT emission-limiting standards and RACT emission control technology to be imposed by the new or revised operating permit. Any RACT proposal shall recommend a determination of RACT, setting forth the basis for this determination consistent with the definition of RACT. The operating permit application for any RACT proposal shall include a schedule for implementing the recommended RACT measures as expeditiously as practicable but no later than May 31, 1995.

4.2.2 The District shall make a case-by-case determination of RACT based on the applicant's proposal, if any, and the following:

4.2.2.1 Emission-limiting standards and emission control technology established as RACT in the implementation plan of any state for that class or category of

- 4.2.2.2 facility,
The information contained in any applicable guidance published by EPA,
- 4.2.2.3 The technological feasibility of various emission-limiting standards or emission control technology alternatives, taking into account design features of the facility and engineering considerations relevant to retrofitting emission controls to the facility,
- 4.2.2.4 The economic feasibility of various emission-limiting standards and emission control technology alternatives, including consideration of the cost-effectiveness of available technologies in reducing emissions of VOC from the facility, and
- 4.2.2.5 All scientific, engineering, economic, and technical material or other relevant information, including compliance test results from the affected facility or substantially similar facilities, that may be available to the District.
- 4.2.3 Any applicant for a new or revised operating permit for a non-CTG or non-ACT facility who elects not to propose RACT emission-limiting standards or RACT emission control technology to be imposed by the revised operating permit shall be subject to a RACT determination by the District. Such determination of RACT shall be based on consideration of the criteria listed in section 4.2.2.
- 4.3 NO_x-emitting facilities
 - 4.3.1 Each applicant for a new or revised operating permit shall be required to propose RACT emission-limiting standards and RACT emission control technology to be imposed by the new or revised operating permit, taking into account the recommendations set forth in any applicable CTG, ACT, or other EPA guidance for the facility. The operating permit application shall include a schedule for implementing the recommended RACT measures as expeditiously as practicable but no later than May 31, 1995.
 - 4.3.2 The District shall make a case-by-case determination of RACT based on the applicant's proposal and the following:
 - 4.3.2.1 The information contained in any applicable CTG, ACT, or other guidance document published by EPA,
 - 4.3.2.2 Emission-limiting standards and emission control technology established as RACT in the implementation plan of any state for that class or category of facility,
 - 4.3.2.3 The technological feasibility of various emission-limiting standards or emission control technology alternatives, taking into account design features of the facility and engineering considerations relevant to retrofitting emission controls to the facility,
 - 4.3.2.4 The economic feasibility of various emission-limiting standards or emission control technology alternatives, including consideration of the cost-effectiveness of available technologies in reducing emissions of NO_x from the facility,
 - 4.3.2.5 All scientific, engineering, economic, and technical material or other relevant information, including compliance test results from the affected facility or substantially similar facilities, that may be available to the District, and
 - 4.3.2.6 Source-specific SIP emission standards.
- 4.4 Each determination of RACT pursuant to this Section shall be submitted to EPA as a site-

specific SIP revision.

SECTION 5 Performance Testing

Owners or operators subject to Section 4 shall conduct performance tests or conduct continuous emission monitoring to verify compliance.

- 5.1 For sources that opt for performance testing, a performance test shall be required annually for the first 2 years. If the facility is found to be in compliance during both of these tests, then the performance tests shall be conducted every two years after the second test, unless the facility fails to demonstrate compliance with its VOC or NO_x emission standard. In this case, the facility shall return to the annual performance test schedule for that pollutant until the District determines that compliance has been shown for a duration adequate to demonstrate that emissions are not likely to exceed the standards in the future.
- 5.2 The District shall be notified and the test results shall be submitted to the District pursuant to Regulation 1.04 *Performance Tests*.
- 5.3 All testing or CEM installation, calibration, and certification shall be performed pursuant to 40 CFR Parts 60 and 75 and appropriate appendices.
- 5.4 All exceedances and malfunctions shall be reported pursuant to Regulation 1.07 *Emissions During Startups, Shutdowns, Malfunctions, and Emergencies*.

Adopted v1/2-2-94; effective 2-2-94; amended v2/3-17-99.

REGULATION 6.43 Volatile Organic Compound Emission Reduction Requirements

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. Pursuant to the Act section 182(b)(1) requiring a 15% reduction in volatile organic compound (VOC) emissions from the 1990 baseline emissions level to be achieved by November 15, 1996, this regulation establishes emissions, equipment, and operational requirements for the listed stationary sources, each of which voluntarily agreed to these requirements.

SECTION 1 Applicability

This regulation applies to each stationary source identified in this regulation.

SECTION 2 Emission Requirements

Each stationary source identified in this regulation shall comply with the emission, equipment, and operational requirements shown for that stationary source.

SECTION 3 Compliance with Emission Requirements

- 3.1 All stationary sources identified in this regulation shall maintain records and demonstrate compliance with the requirements according to the provisions of this regulation and Regulation 1.05 *Compliance with Emission Standards and Maintenance Requirements* regardless of the stationary source size categories in Regulation 1.05.
- 3.2 Specific requirements in this regulation do not invalidate the applicability of the requirements of Regulation 1.05 except those that are redundant and clearly addressed in Regulation 6.43, in which case the requirements of Regulation 6.43 shall take precedence.

SECTION 4 Self-Monitoring and Reporting

- 4.1 All stationary sources identified in this regulation shall monitor the operational parameters specified in this regulation, determine emissions, and report those emissions according to the provisions of this regulation and of Regulation 1.06 *Source Self-Monitoring and Reporting*.
- 4.2 All stationary sources identified in this regulation shall record emissions or the operational parameters specified in this regulation. This record shall be made readily available to the District upon request. Emissions or operational parameters not in compliance with the requirements of this regulation shall be clearly identified.
- 4.3 Specific requirements in this regulation do not invalidate the applicability of the requirements of Regulation 1.06 except those that are redundant and clearly addressed in Regulation 6.43, in which case the requirements of Regulation 6.43 shall take precedence.

SECTION 5 Akzo Nobel Resins (EIS# 185)

- 5.1 On and after January 1, 1996, the combined VOC emissions from the coating manufacturing processes at Akzo PD II Building shall not exceed 9.10 tons per month.
- 5.2 The records and compliance demonstration required by Section 3 and the monitoring

required by Section 4 shall include the following:

- 5.2.1 Product name or number for each product manufactured during each day,
- 5.2.2 Density for each product, in pounds per gallon.
- 5.2.3 Daily production rate for each product, in gallons, and
- 5.2.4 Total daily VOC emissions.
- 5.3 The emissions calculations required by section 5.2.4 shall be made using the following emission factors:
 - 5.3.1 30 pounds VOC per ton of product for solvent-based products, unless a different emission factor is approved by the District, and
 - 5.3.2 0.00191 pound per gallon of product for water-based products, unless a different emission factor is approved by the District.

SECTION 6 Alcan Rolled Products Company, Louisville Plant (EIS# 14)

- 6.1 On and after April 1, 1995, Alcan Rolled Products shall use a saturated hydrocarbon-based rolling coolant, meeting the following specifications, in all rolling processes:
 - 6.1.1 Maximum aromatic content of 2% and
 - 6.1.2 Minimum carbon chain length of C₁₂.
- 6.2 The use of alternate rolling coolants not meeting the specifications in section 6.1 must receive prior, written approval by the District. Approval shall be conditioned upon a demonstration that the use of an alternate rolling coolant will result in VOC emissions no greater than a rolling coolant meeting these specifications.
- 6.3 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the following:
 - 6.3.1 Number of working days per month,
 - 6.3.2 Pounds of rolling coolant used per month,
 - 6.3.3 Pounds of rolling coolant purchased per month,
 - 6.3.4 Pounds of rolling coolant reclaimed each month,
 - 6.3.5 Total monthly VOC emissions,
 - 6.3.6 Calculated daily average VOC emissions, and
 - 6.3.7 For each rolling coolant used, the aromatic content and the minimum saturated hydrocarbon compound carbon chain length.

SECTION 7 American Synthetic Rubber Company LLC (EIS# 11)

- 7.1 On and after January 1, 1993, the exhaust gases from the finishing building at American Synthetic Rubber Company LLC shall be ducted to one or both of the two operating coal-fired boilers or to the regenerative thermal oxidizer (RTO-1).
- 7.2 The overall control efficiency (capture and control) of the VOCs from the finishing building processes shall be at least 80%.
- 7.3 On and after June 1, 2003, the records required by Section 3 shall include, for all periods of operation of the finishing building, the following:
 - 7.3.1 An identification of the control device, i.e., the specific coal-fired boiler or RTO-1, to which the exhaust gases from the finishing building were ducted, and
 - 7.3.2 An indicator, approved in writing by the District, of proper operation of the control device.

SECTION 8 Marathon Ashland Petroleum LLC, Aetna Terminal (EIS# 741)

- 8.1 On and after April 1, 1995, all gasoline storage tanks greater than 39,000 gallons at Marathon Ashland Petroleum LLC, Aetna Terminal shall be equipped with internal floating roofs.
- 8.2 All gasoline storage tanks at Marathon Ashland Petroleum LLC, Aetna Terminal shall meet the floating roof seal requirements of 40 CFR Part 60 Subpart Kb.

SECTION 9 Carbide Industries LLC (EIS# 1)

- 9.1 The combined VOC emissions from Carbide Industries LLC (Carbide) shall not exceed the following:
 - 9.1.1 From September 15, 2004, to May 31, 2006, 6701 pounds per day,
 - 9.1.2 From June 1, 2006, to May 31, 2007, 6550 pounds per day, and
 - 9.1.3 On and after June 1, 2007, 6400 pounds per day.
- 9.2 Carbide shall perform the records and compliance demonstration required by Section 3 and the monitoring required by Section 4 on a daily basis, using process throughputs and established emission factors.

SECTION 10 PPG Architectural Finishes (EIS# 175)

- 10.1 On and after November 1, 1996, the combined VOC emissions from PPG Architectural Finishes shall not exceed 9.80 tons per month.
- 10.2 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the following:
 - 10.2.1 Product name and type for each product manufactured during the month,
 - 10.2.2 Daily production rate for each product or product line, in gallons,
 - 10.2.3 VOC content for each product or product line, in pounds per gallon, and
 - 10.2.4 Total monthly VOC emissions.

SECTION 11 DuPont Dow Elastomers L.L.C. (EIS# 1259)

- 11.1 On and after August 1, 1996, DuPont Dow Elastomers L.L.C. (DuPont Dow) shall meet the following requirements for the six large polymerization kettles, identified as numbers 3, 4, 5, 6, 9, and 10, located on the fourth floor of the East Neoprene Manufacturing Building:
 - 11.1.1 The emissions from each large polymerization kettle shall be controlled by a brine-cooled vent condenser,
 - 11.1.2 DuPont Dow shall not begin charging a large polymerization kettle with unpolymerized emulsion if the inlet brine temperature to the kettle's vent condenser is above 2°C, and
 - 11.1.3 The total VOC emitted from a large polymerization kettle shall not exceed 15.8 pounds per batch.
- 11.2 On and after October 1, 1996, DuPont Dow shall implement a fugitive leak detection and repair (LDAR) program, meeting the equipment leak provisions of 40 CFR Part 63 Subpart H *National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks*, for all production facilities.
- 11.3 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the following:
 - 11.3.1 The following parameters shall be monitored on a continuous basis during periods when exhaust gases from a large polymerization kettle go to the vent condenser:
 - 11.3.1.1 The vent condenser brine inlet temperature at the discharge of the cold brine pump, and

- 11.3.1.2 The vent condenser brine outlet temperature at a point on each vent condenser's outlet brine connection to the return brine header,
- 11.3.2 The operating data showing compliance with the DuPont Dow standard operating procedures and standard operating conditions for each batch processed in a large polymerization kettle shall be recorded and maintained on site at DuPont Dow. These data shall include vent condenser brine inlet temperature, vent condenser brine outlet temperature, and times of vent condenser operation for each batch,
- 11.3.3 Report quarterly any instance when a large polymerization kettle was charged with unpolymerized emulsion when the vent condenser inlet brine temperature was greater than 2°C at the time that the charging began, and
- 11.3.4 The monitoring, recordkeeping, and reporting requirements under 40 CFR Part 63 Subpart H.
- 11.4 An initial stack test shall be performed by no later than October 1, 1996, on one of the brine-cooled vent condensers on polymerization kettles numbered 3, 4, 5, 6, 9, or 10 to determine VOC emissions in pounds per batch. The stack tests shall be performed immediately preceding cleaning of the vent condenser and immediately following cleaning of the vent condenser.
- 11.5 Within 60 days of the initial stack test, DuPont Dow shall submit a maintenance plan and schedule for the vent condensers.

SECTION 12 [Reserved]

SECTION 13 Ford Motor Company - Louisville Assembly Plant (EIS# 72)

- 13.1 On and after April 1, 1995, the combined VOC emissions from Ford Motor Company - Louisville Assembly Plant shall not exceed 19,001.8 pounds per day.
- 13.2 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall be done on a daily basis consistent with the requirements specified in Regulation 6.17 *Standard of Performance for Existing Automobile and Truck Surface Coating Operations*.

SECTION 14 Gateway Press, Inc. (EIS# 617)

On and after July 1, 1995, Gateway Press, Inc. shall meet all of the following requirements:

- 14.1 The following presses shall be equipped and maintained with automated blanket washers:
 - 14.1.1 Harris Graphics M300 heatset web offset press for lithographic printing,
 - 14.1.2 Hantscho Mark 16 six-color heatset web offset press for lithographic printing, and
 - 14.1.3 Harris Cottrell M200 heatset web offset press for lithographic printing.
- 14.2 The blanket wash solvent used on the presses identified in section 14.1 shall contain no more than 2.2 pounds of VOC per gallon less water, as applied.
- 14.3 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the following:
 - 14.3.1 Material name of each blanket wash solvent used on the presses identified in section 14.1,
 - 14.3.2 Pounds or Gallons of each blanket wash material used on these presses per month,
 - 14.3.3 VOC content, less water, as applied, for each blanket wash material used on these presses (in weight percent or pounds per gallon consistent with the units in section 14.3.2), and
 - 14.3.4 Total monthly VOC emissions from the use of blanket wash from these presses.

SECTION 15 Marathon Ashland Petroleum LLC, Kramers Lane (EIS# 143)

- 15.1 On and after January 1, 1995, all loading racks at Marathon Ashland Petroleum LLC, Kramers Lane shall comply with 40 CFR Part 60 Subpart XX - *Standards of Performance for Bulk Gasoline Terminals*.
- 15.2 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the following:
 - 15.2.1 Daily loading rack throughput and
 - 15.2.1 Total daily VOC emissions from the loading racks.

SECTION 16 [Reserved]

SECTION 17 Reynolds Metals Company, Plant #1 (EIS# 186)

- 17.1 On and after January 1, 1996, Reynolds Metals Company, Plant #1 shall use a saturated hydrocarbon-based rolling coolant meeting the following specifications in all rolling processes:
 - 17.1.1 Maximum aromatic content of 2% and
 - 17.1.2 Minimum of 88% comprised of C₁₂ or higher carbon chains.
- 17.2 The use of alternate rolling coolants not meeting the specifications in section 17.1 must receive prior, written approval by the District. Approval shall be conditioned upon a demonstration that the use of an alternate rolling coolant will result in VOC emissions no greater than a rolling coolant meeting these specifications.
- 17.3 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the following:
 - 17.3.1 Number of working days per month,
 - 17.3.2 Pounds of rolling coolant used per month,
 - 17.3.3 Pounds of rolling coolant purchased per month,
 - 17.3.4 Pounds of rolling coolant reclaimed quarterly, prorated to a monthly basis,
 - 17.3.5 Calculated total monthly VOC emissions,
 - 17.3.6 Calculated daily average VOC emissions, and
 - 17.3.7 For each rolling coolant used, the aromatic content and the percentage of C₁₂ or higher saturated hydrocarbon compounds.

SECTION 18 Rohm & Haas Kentucky Inc. (EIS# 189)

- 18.1 On and after September 1, 1996, storage tanks 58109 and 58140 containing crude methyl methacrylate and storage tank 58108 containing distilled methyl methacrylate at Rohm & Haas Kentucky Inc. shall be equipped with internal floating roofs.
- 18.2 Tanks 58109, 58140, and 58108 shall comply with the requirements of 40 CFR §60.112b(a)(1).
- 18.3 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the total pounds filled per tank each month.
- 18.4 On and after September 15, 1996, the plant chemical sewer oil/water separator weir overflow at coordinates W-3600 and S-600 shall be a “gutter and downspout” type of overflow.

SECTION 19 United Defense Louisville Plant (EIS# 1216)

- 19.1 On and after November 14, 1996, the combined VOC emissions from United Defense Louisville Plant shall not exceed 255 pounds per day.
- 19.2 Compliance with this section shall be during the established ozone season of April 1 through

October 31.

- 19.3 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall include the following:
 - 19.3.1 Product name for each coating, solvent, and cleaner used during the day,
 - 19.3.2 Total daily gallons of each product used,
 - 19.3.3 VOC content of each product, in pounds per gallon, and
 - 19.3.4 Total daily VOC emissions.

SECTION 20 Zeon Chemicals KY, Inc. (EIS# 283)

- 20.1 On and after April 1, 1995, the combined VOC emissions from Zeon Chemicals, Inc. shall not exceed 4,133 pounds per day.
- 20.2 The records and compliance demonstration required by Section 3 and the monitoring required by Section 4 shall be done on a daily basis.

Adopted v1/3-16-94; effective 3-16-94; amended v2/9-21-94, v3/5-21-97, v4/4-16-03, v5/2-15-06.

REGULATION 6.44 Standards of Performance for Existing 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 existing commercial motor vehicle and mobile equipment refinishing operations.

SECTION 1 Applicability

This regulation applies to those 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 in operation or under construction prior to 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 VOC 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, motorcycles, camper shells, pick-up truck toppers, and light and medium duty trailers that require special color-matched coatings.
- 2.17 "Group II vehicles" means buses and mobile equipment.
- 2.18 "High-volume, low pressure (HVL) 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 "Large-sized truck" means a truck having a manufacturer's gross vehicle weight rating of more than 8500 pounds.
- 2.20 "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.
- 2.21 "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.
- 2.22 "Midcoat" means a semi-transparent topcoat which is a middle topcoat applied as part of a multiple topcoat system.
- 2.23 "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, 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).
- 2.24 "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.
- 2.25 "Panel" means a complete section (e.g., hood, door), which typically is approximately nine square feet.
- 2.26 "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.
- 2.27 "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.
- 2.28 "Primer" means any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and adhesion of the topcoat.

- 2.29 "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.
- 2.30 "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.
- 2.31 "Reducer" means the solvent used to thin enamel.
- 2.32 "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.
- 2.33 "Small-sized truck" means any motor vehicle having a manufacturer's gross vehicle weight rating of 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.
- 2.34 "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.
- 2.35 "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.
- 2.36 "Three-stage coating system" means a topcoat system composed of a pigmented basecoat portion, a semi-transparent midcoat portion, and a transparent clearcoat portion.
- 2.37 "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.
- 2.38 "Touch-up operation" means the application of any coating by brush, air brush or aerosol spray to repair minor surface damage or imperfections.
- 2.39 "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.
- 2.40 "Truck" means a motor vehicle designed, used, or maintained primarily for the transportation of property.
- 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

- 3.1 The following activities are exempted from all requirements of this regulation:
 - 3.1.1 Application of aerosol coating products,
 - 3.1.2 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,

- 3.1.3 Original Equipment Manufacturer (OEM) coatings applied at manufacturing or assembly plants that are subject to Regulation 6.36 or 7.02, or 40 CFR Part 60 Subpart MM,
- 3.1.4 Touch-up operations,
- 3.1.5 Application of waterborne coatings only that contain less than 2.0 lbs/gal of VOC, as applied,
- 3.1.6 Activities that are for personal use, hobbyist, or other non-commercial operation, and
- 3.1.7 Operations that use less than 25 gallons of coatings per year.
- 3.2 Small facilities that perform minimal coating operations are exempt from Section 8 only. These facilities must meet all of the following limitations:
 - 3.2.1 On a weekly average basis, the combined refinishing operations shall not exceed the equivalent of the following:
 - 3.2.1.1 One complete Group I motor vehicle refinished, or
 - 3.2.1.2 Four Group I panel or spot repair jobs performed,
 - 3.2.2 On a weekly average basis, not more than four gallons of all Group I coatings combined shall be applied, and
 - 3.2.3 No visible emissions shall leave the applicator's property.
- 3.3 An exemption under Section 3 does not constitute an exemption from any other District regulation.

SECTION 4 Standards for VOC

Effective on the dates specified, a 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 surface that is being coated. 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 Effective May 1, 1994, no coatings shall be used which have a VOC content in excess of 6.5 pounds of VOC per gallon of coating as applied, less water and excluded VOC solvents and reducers, unless the conditions of section 4.3 are met.
 - 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
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, or 4.2.2.

4.2.1 Effective May 1, 1994, no coatings shall be used which have a VOC content in excess of 6.5 pounds of VOC per gallon of coating as applied, less water and excluded VOC solvents and reducers, unless the conditions of section 4.3 are met.

4.2.2 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
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 7.0 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.

- 4.5 Surface cleaners, consisting of general wiping cleaners, solvents, wax removers, grease removers, road-tar removers, mold-release agent removers, and other similar materials, must meet the following requirements:
 - 4.5.1 General purpose surface cleaners shall have a VOC content that does not exceed:
 - 4.5.1.1 6.5 pounds per gallon prior to May 1, 1995, and
 - 4.5.1.2 1.7 pounds per gallon on and after May 1, 1995, and
 - 4.5.2 Any cleaner, solvent, or remover material may be used for specific, hard to clean surfaces provided that:
 - 4.5.2.1 Material is dispensed from a hand-held spray bottle, and
 - 4.5.2.2 Usage of the solvent or cleaner does not exceed 35% of the total monthly usage of all surface cleaners.

SECTION 5 Equipment Standards

All coating operators that use more than 25 gallons of coatings per year shall perform those operations using the following equipment:

- 5.1 Spraying operations shall be performed in an enclosed spray booth or an 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 Spray coating operations involving small surface areas, typically called priming, prepping, burn-in and cut-in activities, may be performed in a dedicated spray area other than the spray booth pursuant to section 5.1. These dedicated areas must meet the following requirements:
 - 5.2.1 The preparation area must be ventilated with sufficient airflow and reasonable capture of overspray to assure that the overspray is exhausted through a dedicated ventilation system.
 - 5.2.2 The ventilation system shall capture and remove overspray from the area through a filtered exhaust as in section 5.1.
 - 5.2.3 Dedicated areas may be site-constructed facilities, purchased units or portable units provided that the intent of a controlled and filtered exhaust system is accomplished.
 - 5.2.4 If the preparation area is equipped with a recirculation system rather than direct exhaust, the system must include a carbon adsorption system prior to recirculating the air back into the area. The carbon shall be changed at the manufacturer's recommended intervals to minimize solvent emissions.
- 5.3 All non-spray applied-coating operations shall be performed in a dedicated and ventilated area pursuant to section 5.1 or 5.2.
- 5.4 Effective May 1, 1995, spraying equipment shall have a minimum transfer efficiency of 65% at eight inches from the surface that is being coated. Compliance may be achieved by any of the following:
 - 5.4.1 Electrostatic application equipment operated and maintained in accordance with the manufacturer's recommendations,
 - 5.4.2 HVLP spray equipment operated and maintained in accordance with the manufacturer's recommendations, or
 - 5.4.3 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.

- 5.5 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%.
- 5.6 Effective May 1, 1995, spray and other equipment cleanup shall be accomplished in an 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, Kentucky. This prohibition shall not apply if the coating is to be utilized at surface coating facilities where control equipment has been installed to meet the requirements of section 5.5.
- 6.2 No person shall sell within Jefferson County, Kentucky 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 unless the coating is to be used for an activity that is exempt under section 3.1. This prohibition shall not apply if the coating is to be utilized at surface coating facilities where control equipment has been installed to meet the requirements of section 5.5.
- 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 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 Refinishers shall maintain:

8.1.1 A current list of all coatings, solvents, reducers, additives, and any other VOC containing material in use at the facility. This list shall include, but is not limited to, the following information:

8.1.1.1 Name and appropriate identification of coating, catalyst, hardener, reducer, etc. used;

8.1.1.2 Mix ratio of components used, and

8.1.1.3 VOC content of coating, as applied, less water and excluded solvents, in pounds per gallon.

8.1.2 Daily records that shall include:

8.1.2.1 Identification of applied coatings pursuant to section 8.1.1.1, and

8.1.2.2 Quantity of each coating applied.

8.1.3 Monthly records that shall include:

8.1.3.1 Type of solvent used for cleanup or surface preparation, and

8.1.3.2 Quantity of each solvent, cleaner, etc. used.

8.1.4 MSDS or other data sheets provided by the material manufacturer or its agent for each item listed pursuant to section 8.1.1 and shall include as a minimum:

8.1.4.1 Designation of VOC content as supplied, expressed in lbs/gal, less water and excluded solvents,

8.1.4.2 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

8.1.4.3 Other pertinent physical and chemical data necessary to determine compliance with District regulations.

8.2 Suppliers or jobbers of coatings, solvents and related materials containing VOC shall:

8.2.1 Make and maintain appropriate records of all sales to refinishing operations having District permits, and

8.2.2 Make and maintain records of all sales to exempt or hobbyist refinishing operations including:

8.2.2.1 Date of sale,

8.2.2.2 Customer's name,

8.2.2.3 Customer's business name, if applicable,

8.2.2.4 Customer's business address, address of residence if same as business, and

8.2.2.5 Identification of products and quantities sold.

8.3 Records specified in this section shall be retained for five years and readily available for inspection by EPA, the Cabinet, the District, and other responsible parties commencing upon adoption of this regulation.

Adopted v1/2-2-94; effective 2-2-94, v2/9-20-95.

Appendix A To Regulation 6.44

Standards of Performance for Existing 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 6.45 Standards of Performance for Existing Solid Waste Landfills

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 existing solid waste landfills.

SECTION 1 Applicability

This regulation applies to each existing solid waste landfill located in Jefferson County, Kentucky that commenced operation before the effective date of this regulation and is still in operation.

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 solid waste landfill for which construction, modification, or reconstruction commenced before the effective date of this regulation.
- 2.2 "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.
- 2.3 "Contained landfill" means a solid waste site or facility which accepts for disposal solid waste including residential, commercial, institutional, industrial, municipal solid waste, shredded tires, household hazardous waste, limited quantity generator hazardous waste and spill cleanup residues that are not hazardous waste.
- 2.4 "Controlled landfill" means any landfill at which collection and control systems are required as a result of the nonmethane organic compound emission rate. The landfill is considered controlled at the time a collection and control system is installed, tested, and operated in compliance with Section 3.
- 2.5 "Design capacity" means the maximum amount of waste landfill can accept, as specified in the Division of Waste Management permit.
- 2.6 "Hazardous waste" means any discarded material or material intended to be discarded or substance or combination of such substance 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.
- 2.7 "Household solid waste" means any solid waste including garbage and trash generated by single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, and recreational areas such as picnic areas, parks, and campgrounds.
- 2.8 "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.

- 2.9 "Landfill" means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.
- 2.10 "NMOC" means nonmethane organic compound.
- 2.11 "Sludge" means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.
- 2.12 "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, but not limited to the following materials, 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 Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).
- 2.13 "Solid waste landfill" (SWL) means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A SWL may also receive commercial waste, sludges, and industrial solid waste. Portions of any SWL may be separated by access roads. A SWL may be publicly or privately owned.
- 2.14 "Solid waste landfill emissions" means any gas derived through a natural process from the decomposition of organic waste deposited in a SWL site or from the evolution of volatile organics species in the waste.

SECTION 3 Standards for Air Emissions

- 3.1 Each owner or operator subject to this regulation shall calculate a NMOC emission rate for the landfill using the procedures in Appendix A or B.
 - 3.1.1 If the calculated NMOC emission rate is less than 150 Mg/yr (167 tpy), the owner or operator shall:
 - 3.1.1.1 Submit an annual emission report to the District, and
 - 3.1.1.2 Recalculate the NMOC emission rate semi-annually until such time as the NMOC emission rate is equal to or greater than 150 Mg/yr (167 tpy) and a collection and control system is installed, or the landfill is closed.
 - 3.1.2 If the calculated NMOC emission rate is equal to or greater than 150 Mg/yr (167 tpy), the owner or operator shall install a collection and control system in compliance with the following:
 - 3.1.2.1 The owner/operator shall submit to the District, within 180 days, a permit application to install a collection and control system containing the following:
 - 3.1.2.1.1 A collection and control system design plan,
 - 3.1.2.1.2 A compliance plan to install a collection and control system by no later than

May 1, 1996, and

- 3.1.2.1.3 A design for a collection system that shall effectively capture the gas that is generated within the landfill. The collection system shall:
 - 3.1.2.1.3.1 Be designed to handle the maximum expected gas flowrate over the lifetime of the gas control or treatment system from the entire area of the landfill that warrants control over the lifetime of the system,
 - 3.1.2.1.3.2 Collect gas from each area, cell, or group of cells in the landfill in which refuse has been placed for a period of two years or more, and
 - 3.1.2.1.3.3 Collects gas at a sufficient extraction rate that when controlled pursuant to section 3.1.2.2 the NMOC emission rate shall not exceed 150 Mg/yr (167 tpy) for the landfill.
- 3.1.2.2 The collected gas shall be routed to:
 - 3.1.2.2.1 An open flare designed and operated in accordance with 40 CFR Section 60.18,
 - 3.1.2.2.2 A control system designed and operated within the parameters demonstrated in the performance test to reduce NMOCs by 98% by weight,
 - 3.1.2.2.3 An enclosed combustor. Reduction of the outlet NMOC concentration to 20 ppmvd as hexane at 3% oxygen is required. The ppmvd shall be established by Method 25, or
 - 3.1.2.2.4 A treatment system that processes the collected gas for subsequent sale or use.
- 3.1.2.3 The collection and control device may be capped or removed provided the following conditions are met:
 - 3.1.2.3.1 The landfill must no longer be accepting waste and be permanently closed. A copy of the closure report submitted to the Division of WasteManagement must be submitted to the District, and
 - 3.1.2.3.2 The collection and control system must have been in continuous operation a minimum of 15 years, and the calculated NMOC emission rate must be less than 150 Mg/yr (167 tpy) on three successive test dates. The test dates must be no closer than three months apart, and no longer than six months apart.
- 3.1.3 The following methods shall be used to determine whether or not the gas collection system is in compliance:
 - 3.1.3.1 Calculate the maximum expected gas generation flowrate from the landfill using the procedures in Appendix C, and
 - 3.1.3.2 Determine whether the control device is operating according to the parameters established in 40 CFR Section 60.18 (for open flares), or for other control devices the parameters established in the performance test, to reduce NMOCs by 98% by weight (see Section 4), or
 - 3.1.3.3 The owner or operator seeking to demonstrate compliance with a device other than open or enclosed flare, boiler, gas turbine, incinerator or internal combustion engine shall provide the District information proving continuous achievement of these standards.

SECTION 4 Monitoring and Reporting Requirements

- 4.1 The owner or operator shall install a sampling port at, each well and measure and record the gauge pressure in the gas collection header on a monthly basis.
- 4.2 The owner or operator using an enclosed combustion device shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

- 4.2.1 A temperature monitoring device equipped with a continuous recorder having an accuracy of $\pm 1\%$ of the temperature being measured expressed in degrees Celsius or $\pm 0.5^{\circ}\text{C}$, whichever is greater, and
- 4.2.2 A flow indicator and recorder that records at 15 minute intervals the gas flow to the control device.
- 4.3 The owner or operator using an open flare shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:
 - 4.3.1 A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame, and
 - 4.3.2 A flow indicator and recorder that records at 15 minute intervals the gas flow to the flare.
- 4.4 The owner or operator using a device other an open flare or a closed combustion device shall provide to the District information describing the operation of the control device and its parameters that indicate proper performance.

SECTION 5 Compliance Timetable

All existing landfills shall be in compliance with this regulation no later than May 1, 1996.

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

APPENDIX A to REGULATION 6.45

NMOC Emission Rate Calculations

The owner or operator shall estimate the NMOC emission rate using the following equations:

1. If the actual year-to-year acceptance rate is known:

$$Q_t = \sum_{i=1}^n 2 k L_g M_i e^{-kt_i} C_{NMOC} (3.595 \cdot 10^{-9})$$

where:

- Q_t = Total NMOC emission rate from the landfill, Mg/yr.
- k = landfill gas generation constant, 1/yr.
- L_g = methane generation potential, m^3/Mg .
- M_i = mass of refuse in the i^{th} section, Mg.
- t_i = age of the i^{th} section, yrs.
- C_{NMOC} = concentration of NMOC, ppmv as hexane.
- $3.595 \cdot 10^{-9}$ = conversion factor.

The total NMOC emission rate is the sum of each NMOC emission rate for each yearly mass.

2. If the actual year-by-year refuse acceptance rate is unknown:

$$M_{NMOC} = 2 L_g R (1 - e^{-kt}) C_{NMOC} (3.595 \cdot 10^{-9})$$

where:

- M_{NMOC} = mass emission rate of NMOC, Mg/yr.
- L_g = refuse methane generation potential, m^3/Mg .
- R = average annual acceptance rate, Mg/yr.
- k = methane generation rate constant, 1/yr.
- t = age of landfill, yrs.
- C_{NMOC} = concentration of NMOC, ppmv as hexane.
- $3.595 \cdot 10^{-9}$ = conversion factor.

In the absence of site-specific data, the values for k , L_g , and C_{NMOC} are 0.02/yr, 230 m^3/Mg , and 8000 ppmv as hexane, respectively.

3. Once the NMOC calculation is done, compare the calculated NMOC mass emission rate to the standard of 150 Mg/yr (167 tpy).
 - 3.1 If the calculated NMOC emission rate is less than the standard, then the owner or operator shall submit an emission rate report, and shall recalculate the NMOC mass emission rate quarterly.
 - 3.2 If the calculated NMOC emission rate is greater than or equal to the standard, then the owner or operator shall either install controls, or determine a site-specific NMOC concentration

using the following sampling procedure:

- 3.2.1 The owner or operator shall install a minimum of five sample probes. The owner or operator shall collect and analyze landfill gas from each sample probe for NMOC concentration using EPA Method 25C. The owner or operator shall recalculate the NMOC mass emission rate using the average NMOC concentration from the collected samples.
 - 3.2.1.1 If the mass emission rate is equal to or greater than the standard, then the owner or operator shall install controls.
 - 3.2.1.2 If the mass emission rate is less than the standard, then the owner or operator shall demonstrate that the NMOC mass emission rate is below the standard with 80% confidence.

80% confidence shall be determined by the following equation:

$$n = \frac{(t_{.20})^2 s^2}{D^2}$$

where:

- n = number of samples required to demonstrate 80% confidence.
- t_{.20} = student-t value for a two-tailed confidence interval with a 20% probability and for a degree of freedom equal to the initial number of samples less than one. (for a minimum of five initial samples, the degree of freedom is four, and the corresponding t value is 1.533).
- s = standard deviation of the initial set of samples, ppmv.

$$D = \frac{NMOC \text{ mass emission rate cutoff} - M_{NMOC}}{2 L_g R (e^{-kc} - e^{-kt})(3.595 \cdot 10^{-9})}$$

where:

- c = years since closure (0 for active landfills)
- The other variables are as defined previously.

- 4. The owner or operator shall then recalculate the mass emission rate using Method 1 or 2 with the "n" number of samples from 3.2.1 to determine new average NMOC concentration.
 - 4.1 If the new mass emission rate is equal to or greater than the standard, then the owner or operator shall install controls.
 - 4.2 If the new mass emission rate is less than the standard, then the owner or operator shall submit an annual or 5-year estimate of the emission rate, and shall update site-specific NMOC concentration using Method 25C procedures every 5 years.
 - 4.3 The owner or operator shall estimate the NMOC mass emission rate using a site-specific landfill gas generation rate constant - k. The gas generation constant and the mass emission rate shall be determined using the procedures in EPA Method 2E.
- 5. Next, compare the new mass emission rate to the standard.
 - 5.1 If the NMOC emission rate is equal to or greater than the standard, then the owner or

operator shall install controls.

- 5.2 If the NMOC emission rate is less than the standard, then the owner or operator shall submit an annual emission rate report and shall recalculate the NMOC mass emission rate annually using the site-specific landfill gas generation rate constant. The gas generation rate constant calculation is performed only once, and the value obtained is used in all subsequent annual NMOC emission rate calculations.

APPENDIX B to REGULATION 6.45
NMOC Emission Rate Calculation if Controls are Required

After the installation of a collection and control system in compliance with section 3.1.2, the owner or operator shall estimate the NMOC emission rate using the following equation:

$$M_{\text{NMOC}} = 1.89 \cdot 10^{-3} V_{\text{LFG}} C_{\text{NMOC}}$$

where:

- M_{NMOC} = mass emission rate of NMOC, Mg/yr.
- V_{LFG} = flowrate of landfill gas, m³/min.
- C_{NMOC} = NMOC concentration, ppmv as hexane.

V_{LFG} shall be obtained by measuring the total landfill gas flowrate using an orifice meter as described in Method 2E at the common header pipe that leads to the control device.

C_{NMOC} shall be determined by collecting and analyzing landfill gas sampled from the common header pipe using EPA Method 25C.

APPENDIX C to REGULATION 6.45
Compliance Calculations

The equation for maximum expected gas generation flowrate.

$$Q_m = 2 L_g R (1 - e^{-kt})$$

where:

- Q_m = maximum expected gas generation flow rate, m³/yr.
- L_g = refuse methane generation potential, m³/Mg refuse.
- R = average annual acceptance rate, Mg/yr.
- k = methane generation rate constant, 1/yr.
- t = age of the landfill plus the gas mover equipment life or active life of the landfill, whichever is less, in years.

The value of 230 m³/Mg shall be used for L_g . A value of .02 years⁻¹ shall be used unless a Method 2E has been performed for the value of k . A value of 15 years shall be used for the gas mover equipment life. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

For the purpose of calculating the area of influence of the gas collection system, Method 2E shall be used.

For the purpose of demonstrating whether the gas collection system flowrate is sufficient to determine compliance, measure gauge pressure in the gas collection header. If a positive pressure exists, the gas flow collection system shall be increased until a negative pressure is measured.

If the gauge pressure at a wellhead is positive, open the valve to restore negative pressure. If negative pressure can not be achieved, then an additional well shall be added.

REGULATION 6.46 Standards of Performance for Existing Ferroalloy and Calcium Carbide Production 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 control of emissions from existing ferroalloy and calcium carbide production facilities.

SECTION 1 Applicability

- 1.1 This regulation applies to the following affected facilities commenced before the classification date defined below:
 - 1.1.1 Electric submerged arc furnaces that produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide, and
 - 1.1.2 Dust-handling equipment associated with the electric submerged arc furnace processes specified in section 1.1.1.

SECTION 2 Definitions

As used in this regulation, all terms not defined herein shall have the meaning given them in Regulation 1.02.

- 2.1 "Blowing tap" means any tap in which an evolution of gas forces or projects jets of flame or metal sparks beyond the ladle, runner, or collection hood.
- 2.2 "Calcium carbide" means material containing 70 to 85% calcium carbide by weight.
- 2.3 "Calcium silicon" means that alloy as defined by ASTM A-495-64(70).
- 2.4 "Capture system" means the equipment (including hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected electric submerged arc furnace to the control device.
- 2.5 "Charge chrome" means that alloy containing 52 to 70% by weight chromium, 5 to 8% by weight carbon, and 3 to 6% by weight silicon.
- 2.6 "Classification date" means October 21, 1974.
- 2.7 "Concentrated discharge" means that the outlet from a control device consists of either stacks (one or more) or openings on the device's top or side that have a total area less than 5% of the corresponding top or side and that have a length of not more than twice the width.
- 2.8 "Control device" means the air pollution control equipment used to remove particulate matter from an effluent gas stream generated by an electric submerged arc furnace .
- 2.9 "Dispersed discharge" means that the outlet from a control device consists of openings on the device's top or side that have a total area exceeding 5% of the corresponding top or side or that have a length more than twice the width. A control device may have both dispersed and concentrated discharges.
- 2.10 "Dust-handling equipment" means any equipment used to handle particulate matter collected

- by the air pollution control device (and located at or near such device) serving any electric submerged arc furnace subject to this regulation.
- 2.11 "Electric submerged arc furnace" means any furnace wherein electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.
 - 2.12 "Ferrochrome silicon" means that alloy as defined by ASTM A-482-66(71).
 - 2.13 "Ferromanganese silicon" means that alloy containing 63 to 66% by weight manganese, 28 to 32% by weight silicon, and a maximum of 0.08% by weight carbon.
 - 2.14 "Ferrosilicon" means that alloy as defined by ASTM A-100-69(74) grades A,B,C,D, and E which contains 50% or more by weight silicon.
 - 2.15 "Furnace charge" means any material introduced into the electric submerged arc furnace and may consist of, but is not limited to, ores, slag, carbonaceous material, and limestone.
 - 2.16 "Furnace cycle" means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.
 - 2.17 "Furnace power input" means the resistive electrical power consumption of an electric submerged arc furnace as measured in kilowatts.
 - 2.18 "High-carbon ferrochrome" means that alloy as defined by ASTM A-101-73 grade HC1 through HC6.
 - 2.19 "Product change" means any change in the composition of the furnace charge that would cause the electric submerged arc furnace to become subject to a different mass standard applicable under Section 3.
 - 2.20 "Silicomanganese" means that alloy as defined by ASTM A-483-64(74).
 - 2.21 "Silicomanganese zirconium" means that alloy containing 60 to 65% by weight silicon, 1.5 to 2.5% by weight calcium, 5 to 7% by weight zirconium, 0.75 to 1.25% by weight aluminum, 5 to 7% by weight manganese, and 2 to 3% by weight barium.
 - 2.22 "Silicon metal" means any silicon alloy containing more than 96% silicon by weight.
 - 2.23 "Silvery iron" means any ferrosilicon, as defined by ASTM A-100-69(74), which contains less than 30% silicon.
 - 2.24 "Slag" means the more or less completely fused and vitrified matter separated during the reduction of metal from its ore.
 - 2.25 "Standard ferromanganese" means that alloy as defined by ASTM A-99-66(71).
 - 2.26 "Tapping" means the removal of slag or product from the electric submerged arc furnace under normal operating conditions such as removal of metal under normal pressure and movement by gravity down the spout into the ladle.
 - 2.27 "Tapping Period" means the time duration from initiation of the process of opening the tap hole until plugging of the tap hole is complete.
 - 2.28 "Tapping station" means that general area where molten product or slag is removed from the electric submerged arc furnace.

SECTION 3 Standard for Particulate Matter

- 3.1 On and after the date on which the performance test required to be conducted by Regulation 6.01 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which:
 - 3.1.1 Exit from a control device and exhibit an opacity equal to or greater than 3%, where control device has dispersed discharge.

- 3.1.2 Exit from any building opening and exhibit an opacity equal to or greater than:
 - 3.1.2.1 Fifteen percent for these gases which are the result of routine smelting/melting operations where no auxiliary operations will occur,
 - 3.1.2.2 Twenty percent for those gases which are from a furnace associated with metallurgical treatment while no auxiliary operations are occurring,
 - 3.1.2.3 Twenty-five percent for those gases which are the result of tapping operations,
 - 3.1.2.4 Forty percent for those gases which occur only during a metallurgical treatment, or
 - 3.1.2.5 Forty percent for those gases which occur during the pouring of metal from slag ladles into castbeds or molds.
- 3.2 On and after the date on which the performance test required to be conducted by Regulation 6.01 is completed, no owner or operator subject to this regulation shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit 15% opacity or greater.

SECTION 4 Test Methods and Procedures

Reference Method 9 in Appendix A of 40 CFR 60, except as provided in Regulation 1.04, shall be used to determine compliance with the standards prescribed in Section 3.

Adopted v1/12-21-94; effective 12-21-94.

REGULATION 6.47 Federal Acid Rain Program Incorporated by Reference

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 affected facilities.

SECTION 1 General Definition

In the federal regulations incorporated by reference, the term "permitting authority" shall mean the Air Pollution Control District of Jefferson County and the term "Administrator" shall mean the Administrator of the United States Environmental Protection Agency.

SECTION 2 Applicability

This regulation applies to all affected facilities subject to any Acid Rain emissions reduction requirement or Acid Rain emissions limitation under 40 CFR §72.6 or 40 CFR Part 74.

SECTION 3 General Provisions

For purposes of implementing an acid rain program that meets the requirements of the Act Title IV, the District incorporates by reference the following:

- 3.1 40 CFR Part 72 *Permits Regulation*,
- 3.2 40 CFR Part 73 *Sulfur Dioxide Allowance System*,
- 3.3 40 CFR Part 74 *Sulfur Dioxide Opt-ins*,
- 3.4 40 CFR Part 75 *Continuous Emission Monitoring*,
- 3.5 40 CFR Part 76 *Acid Rain Nitrogen Oxides Emission Reduction Program*,
- 3.6 40 CFR Part 77 *Excess Emissions*, and
- 3.7 40 CFR Part 78 *Appeal Procedures for Acid Rain Program*.

SECTION 4 Availability

Copies of the *Code of Federal Regulations* (CFR) are available:

- 4.1 For sale from:
 - U. S. Government Printing Office
 - Superintendent of Documents
 - Mail Stop SSOP
 - Washington, DC 20402-9328.
- 4.2 For free by downloading from the Internet:
 - <http://www.access.gpo.gov/nara/cfr>

SECTION 5 Additional Affected Facility Requirements

In addition to complying with EPA regulations 40 CFR Part 72 to 40 CFR Part 78, affected facilities shall comply with any more stringent requirements in District regulations. If the provisions or requirements of 40 CFR Part 72 to 40 CFR Part 78 conflict with or are not included in Regulation 2.16 *Title V Operating Permits*, the Part 72 to Part 78 provisions and requirements shall apply and take precedence unless Regulation 2.16 is more stringent.

Adopted v1/12-21-94; effective 12-21-94, amended v2/6-21-95, v3/11-19-97, v4/3-15-00.

REGULATION 6.48 Standard of Performance for Existing 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 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 quantification of Volatile Organic Compound (VOC) emissions from existing bakery oven operations.

SECTION 1 Applicability

This regulation is applicable to existing bakeries that produce bread, rolls, buns, and similar products, but not those that produce crackers, pretzels, sweet goods or baked foodstuffs that are not yeast-leavened. This regulation applies to each existing bakery oven that commenced operation before the effective date of this regulation. Sources with a daily production rate of less than one ton of yeast-leavened bread shall be exempt from 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 "Bakery oven" means any type of equipment or apparatus used to bake bread.
- 2.2 "Bread" means yeast-leavened pan bread, rolls, buns or similar yeast-leavened products.
- 2.3 "Leavened" means to raise a dough by causing gas to permeate it.
- 2.4 "Spike" means an additional amount of yeast added upon the dough side.
- 2.5 "Spike time" means the interval period over which spiking is accomplished.
- 2.6 "Yeast percentage" means the weight ratio of yeast to total recipe flour.

SECTION 3 Method for Calculating VOC Emissions from Bakery Ovens

The total non-methane VOC emissions from bakery ovens shall be calculated by using the following emission factor equations.

- 3.1 For bread made with yeast spike, the formula is:

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

where:

- E.F. = pounds VOC per ton of baked bread.
- Y_i = initial baker's percent of yeast to the nearest tenth of a percent, expressed in decimal form (i.e. 3.2% is equivalent to 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.

3.2 For bread made with no final yeast spike, the formula is:

$$E.F. = 0.95Y_i + 0.195T_i + 1.90$$

3.3 For daily emissions from yeast-leavened bread the formula is:

$$\text{VOC Emissions pounds per day} = E.F. \times BP$$

where:

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

BP = bread production in tons per day.

SECTION 4 Exemptions

4.1 This regulation shall not apply to bakery ovens used exclusively for the baking of bakery products leavened chemically in the absence of yeast.

4.2 This regulation shall not apply to bakery ovens used exclusively for the baking of bakery products other than bread. Such products include, but are not limited to, muffins, croutons, breadsticks and crackers.

SECTION 5 Recordkeeping Requirements

An owner or operator of one or more existing bakery ovens subject to this regulation shall maintain daily production records of bread. The owner or operator shall use the formula in Section 3 in order to calculate the total daily VOC emissions. This log shall be on file at the company and shall be maintained for a period of five years. This log shall be made available to the District upon request within a reasonable time.

Adopted v1/7-19-95; effective 7-19-95.

REGULATION 6.49 Standards of Performance for Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry

**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 reactor processes and distillation operations processes in the synthetic organic chemical manufacturing industry (SOCMI).

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 “Batch mode” means a noncontinuous operation or process in which a discrete quantity or batch of feed is charged into a process unit and distilled or reacted at one time.
- 1.2 “Boiler” means any enclosed combustion device that extracts useful energy in the form of steam.
- 1.3 “By compound” means by individual stream components, not carbon equivalents.
- 1.4 “Continuous recorder” means a data recording device capable of recording an instantaneous data value at least once every 15 minutes.
- 1.5 “Distillation operation” means an operation separating, by heating or pressure change, 1 or more feed streams into 2 or more exit streams, each exit stream having component concentrations different from those in the feed stream. The separation is achieved by the redistribution of the components between the liquid and vapor phase as they approach equilibrium within the distillation unit.
- 1.6 “Distillation unit” means a device or vessel in which distillation operations occur, including all associated internals (such as trays or packing) and accessories (such as reboiler, condenser, vacuum pump, steam jet, etc.) plus any associated recovery system.
- 1.7 “Flame zone” means the portion of the combustion chamber in a boiler occupied by the flame envelope.
- 1.8 “Flow indicator” means a device that indicates whether gas flow is present in a vent stream.
- 1.9 “Halogenated vent stream” means any vent stream determined to have a total concentration of halogen atoms by volume contained in organic compounds of 200 parts per million by volume (ppmv) or greater as determined by Method 18 of 40 CFR 60 Appendix A, other test or data validated by Method 301 of 40 CFR 63 Appendix A, or by engineering assessment or process knowledge.
- 1.10 “Incinerator” means any enclosed combustion device that is used for oxidizing organic compounds. Auxiliary fuel may be used to heat waste gas to combustion temperatures. Any energy recovery section present is not physically formed into 1 section; rather, the energy recovery system is a separate section following the combustion section and the 2 sections are joined by ducting or connections that carry fuel gas.
- 1.11 “Primary fuel” means the fuel that provides the principal heat input to the device. To be

- considered primary, the fuel must be able to sustain operation without the addition of other fuels.
- 1.12 “Process heater” means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.
- 1.13 “Process unit” means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, 1 or more SOCOMI chemicals. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.
- 1.14 “Product” means any compound or SOCOMI chemical that is produced as that chemical for sale as a product, by-product, co-product, or intermediate or for use in the production of other chemicals or compounds.
- 1.15 “Reactor processes” mean unit operations in which 1 or more chemicals, or reactants other than air, are combined or decomposed in such a way that their molecular structures are altered and 1 or more new organic compounds are formed.
- 1.16 “Recovery device” means an individual unit of equipment, such as an adsorber, carbon adsorber, or condenser, capable of, and used for the purpose of, recovering chemicals for use, reuse, or sale.
- 1.17 “Recovery system” means an individual recovery device or series of such devices applied to the same vent stream.
- 1.18 “SOCMI chemical” means a chemical listed in *Control of Volatile Organic Compound Emissions from Reactor Processes and Distillation Operations Processes in the Synthetic Organic Chemical Manufacturing Industry*, EPA-450/4-91-031, August 1993, Appendix A *List of Synthetic Organic Chemical Manufacturing Industry Chemicals*, Table A-1 *List of Synthetic Organic Chemical Manufacturing Industry Chemicals* in the column titled *Reactor and distillation CTG*.
- 1.19 “Total resource effectiveness index value” or “TRE index value” means a measure of the supplemental total resource requirement per unit reduction of VOCs associated with a process vent stream, based on vent stream flow rate, emission rate of VOCs, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds) as determined using the equations in Section 4. The TRE index value is a decision tool used to determine if the annual cost of controlling a given vent gas stream is reasonable when considering the emissions reduction achieved.
- 1.20 “Vent stream” means any gas stream discharge directly from a distillation operation or reactor process to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks including, but not limited to, pumps, compressors, and valves.

SECTION 2 Applicability

- 2.1 This regulation applies to any vent stream originating from a process unit in which a reactor process or distillation operation is located and 1 or more SOCOMI chemicals are produced.
- 2.2 Exemptions from some or all of the provisions of this regulation are as follows:
- 2.2.1 Any reactor process or distillation operation that is designed and operated in a batch mode is not subject to the provisions of this regulation.
- 2.2.2 Any reactor process or distillation operation that is part of a polymer manufacturing operation is not subject to the provisions of this regulation.
- 2.2.3 Any reactor process or distillation operation operating in a process unit with a total design

capacity of less than 1 gigagram per year for all chemicals produced within that unit is not subject to the provisions of this regulation except for the reporting and recordkeeping requirements listed in section 6.2.

- 2.2.4 Any vent stream for a reactor process or distillation operation with a flow rate less than 0.0085 standard cubic meter per minute or a total VOC concentration less than 500 ppmv is not subject to the provisions of this regulation except for the performance testing requirements listed in either section 4.3.2 or section 4.9, respectively, and the reporting and recordkeeping requirements listed in section 6.3.

SECTION 3 Control Requirements

- 3.1 For individual vent streams within a process unit with a TRE index value less than or equal to 1.0, the owner or operator shall comply with either of the following control requirements:
- 3.1.1 Reduce the VOC in the vent stream by either 98 % by weight or to 20 ppmv on a dry gas basis corrected to 3 % oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this provision, then the vent stream shall be introduced into the flame zone of the boiler or process heater, or
- 3.1.2 Combust the VOC in the vent stream in a flare. Flares used to comply with this provision shall comply with the requirements of 40 CFR §60.18. These flare control requirements temporarily do not apply if a process not subject to the control requirement of this regulation vents an emergency relief discharge into a common flare header and causes the flare servicing the vent stream subject to this regulation to be out of compliance with 1 or more of the provisions of 40 CFR §60.18.
- 3.2 For individual vent streams within a process unit with a TRE index value greater than 1.0, the owner or operator shall maintain the vent stream parameters that result in a calculated TRE index value greater than 1.0 without the use of a VOC control device. The TRE index value shall be calculated at the outlet of the final recovery device.

SECTION 4 TRE Index Value Determination, Performance Testing, and Exemption Testing

- 4.1 Engineering Assessment
- 4.1.1 For the purpose of determining the TRE index value pursuant to section 3.2, an engineering assessment may be used to determine the process unit vent stream flow rate, net heating value, and VOC emission rate for the representative operating condition expected to yield the lowest TRE index value.
- 4.1.2 If the TRE index value calculated using an engineering assessment is greater than 4.0, then it is not required that the owner or operator perform the measures specified in section 4.5.
- 4.1.3 If the TRE index value calculated using an engineering assessment is less than or equal to 4.0, then the owner or operator shall perform the measurements specified in section 4.5.
- 4.1.4 All data, assumptions, and procedures used in an engineering assessment shall be documented. Engineering assessment includes, but is not limited to, the following:
- 4.1.4.1 Previous test results, if the tests are representative of current operating practices at the process unit,
- 4.1.4.2 Bench-scale or pilot-scale test data representative of the process unit under representative operating conditions,
- 4.1.4.3 Maximum flow rate specified or implied within a permit limit applicable to the

- process vent, and
- 4.1.4.4 Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples for analytical methods include, but are not limited to, the following:
 - 4.1.4.4.1 Use of material balances based on process stoichiometry to estimate maximum VOC concentrations,
 - 4.1.4.4.2 Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,
 - 4.1.4.4.3 Estimation of VOC concentrations based on saturation conditions,
 - 4.1.4.4.4 Estimation of the maximum expected net heating value based on the stream concentration of each organic compound, or, alternatively, as if all VOC in the vent stream were the compound with the highest heating value.
 - 4.2 For the purpose of demonstrating compliance with the control requirements of this regulation, the process unit shall be run at representative operating conditions and flow rates during any performance test.
 - 4.3 The following methods in 40 CFR 60 Appendix A shall be used to demonstrate compliance with the emission limit or percent reduction efficiency requirement of section 3.1.1:
 - 4.3.1 Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or VOC reduction efficiency shall be located after the last recovery device but prior to the inlet of the control device, prior to any dilution of the process vent stream, and prior to release to the atmosphere,
 - 4.3.2 Method 2, 2A, 2C, or 2D, as appropriate, for determination of gas stream volumetric flow rate,
 - 4.3.3 The emission rate correction factor, integrated sampling, and analysis procedure of Method 3 to determine the oxygen concentration (% O_{2d}) for the purpose of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the VOC samples, and samples shall be taken during the same time that the VOC samples are taken. The VOC concentration, corrected to 3 % oxygen (C_c) shall be computed using the following equation:

$$C_c = C_{VOC} \left(\frac{17.9}{20.9 + \% O_{2d}} \right)$$

where:

- C_c = Concentration of VOC (ppmv) corrected to 3 % O₂ on a dry gas basis,
- C_{VOC} = Concentration of VOC (ppmv) on a dry gas basis, and
- % O_{2d} = Concentration of oxygen (% by volume) on a dry gas basis,
- 4.3.4 Method 18 to determine the concentration of VOC at the outlet of the control device when determining compliance with the 20 ppmv limit or at both the control device inlet and outlet when the reduction efficiency of the control device is to be determined.
 - 4.3.4.1 The minimum sampling time for each run shall be 1 hour during which either an integrated sample or 4 grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15-minute intervals.

4.3.4.2

The emission reduction “R” of VOC shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

- R = Emission reduction (% by weight),
- E_i = Mass rate of VOC (kilogram per hour) entering the control device, and
- E_o = Mass rate of VOC (kilogram per hour) discharged to the atmosphere.

4.3.4.3

The mass rates of VOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2 \left[\sum_{j=1}^n C_{ij} M_j \right] Q_i$$

$$E_o = K_2 \left[\sum_{j=1}^n C_{oj} M_j \right] Q_o$$

where:

- C_{ij}, C_{oj} = Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppmv,
- M_{ij}, M_{oj} = Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, grams per gram-mole,
- Q_i, Q_o = Flow rate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meters per minute, and
- K₂ = 2.494 × 10⁻⁶ (liters per minute) (gram-mole per standard cubic meter) (kilogram per gram) (minute per hour), where standard temperature for (gram-mole per standard cubic meter) is 20EC.

4.3.4.4

The VOC concentration (C_{VOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{VOC} = \sum_{j=1}^n C_j$$

where:

- C_{VOC} = Concentration of VOC, dry basis, ppmv,
- C_j = Concentration of sample component “j”, dry basis, ppmv, and

n = Number of components in the sample, and

- 4.3.5 When a boiler or process heater with a design heat input capacity of 44 megawatts or greater, or a boiler or process heater into which the process vent stream is introduced with the primary fuel, is used to comply with the control requirements, an initial performance test is not required.
- 4.4 When a flare is used to comply with the control requirements of this regulation, the flare shall comply with the requirements of 40 CFR §60.18.
- 4.5 The following test methods shall be used to determine compliance with the TRE index value:
- 4.5.1 Method 1 or 1A, as appropriate, for selection of the sampling site, with the following provisions:
- 4.5.1.1 The sampling site for the vent stream molar composition determination and flow rate prescribed in section 4.5.2 and section 4.5.3 shall be, except for the situations outlined in section 4.5.1.2, after the final recovery device, if a recovery system is present, prior to the inlet of any control device, and prior to any post-reactor or post-distillation unit introduction of halogenated compounds into the process vent stream. No traverse site selection method is needed for vents smaller than 10 centimeters in diameter, and
- 4.5.1.2 If any gas stream other than the reactor or distillation vent stream is normally conducted through the final recovery device, then the following apply:
- 4.5.1.2.1 The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which any nonreactor or nondistillation stream or stream from a nonaffected reactor or distillation unit is introduced. Method 18 shall be used to measure organic compound concentrations at this site,
- 4.5.1.2.2 The efficiency of the final recovery device is determined by measuring the organic compound concentrations using Method 18 at the inlet to the final recovery device after the introduction of all vent streams and at the outlet of the final recovery device, and
- 4.5.1.2.3 The efficiency of the final recovery device determined according to section 4.5.1.2.2 shall be applied to the organic compound concentrations measured according to section 4.5.1.2.1 to determine the concentrations of organic compounds from the final recovery device attributable to the reactor or distillation vent stream. The resulting organic compound concentrations are then used to perform the calculations outlined in section 4.5.4,
- 4.5.2 The molar composition of the vent stream shall be determined using the following procedures:
- 4.5.2.1 Method 18 to measure the concentration of organic compounds including those containing halogens,
- 4.5.2.2 ASTM D1946-77 to measure the concentration of carbon monoxide and hydrogen, and
- 4.5.2.3 Method 4 to measure the content of water vapor,
- 4.5.3 The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate,
- 4.5.4 The emission rate of VOC (E_{VOC}) in the vent stream shall be calculated using the following equation:

$$E_{\text{VOC}} = K_2 \left[\sum_{j=1}^n C_j M_j \right] Q_s$$

where:

- E_{VOC} = Emission rate of VOC in the sample (kilograms per hour),
- K_2 = Constant, 2.494×10^{-6} (liters per parts per million) (gram-moles per standard cubic meter) (kilogram per gram) (minute per hour), where standard temperature for (gram-mole per standard cubic meter) (g-mole/scm) is 20EC,
- C_j = Concentration of compound "j", on a dry basis, in parts per million as measured by Method 18, as indicated in section 4.3.3,
- M_j = Molecular weight of sample "j", grams per gram-mole, and
- Q_s = Vent stream flow rate, on a dry basis, in standard cubic meters per minute at a standard temperature of 20EC,

4.5.5 The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of halogen atoms from compounds containing halogens that were measured by Method 18, and

4.5.6 The net heating value of the vent stream shall be calculated by using the equation:

$$H_T = K_1 \left[\sum_{j=1}^n C_j H_j \right] [1 + B_{\text{ws}}]$$

where:

- H_T = Net heating value of the sample (megajoule per standard cubic meter), where the net enthalpy per mole of vent stream is based on combustion at 25EC and 760 millimeters of mercury, but the standard temperature for determining the volume corresponding to 1 mole is 20EC, as in the definition of Q_s (vent stream flow rate),
- K_1 = Constant, 1.740×10^{-7} (parts per million)⁻¹ (gram-mole per standard cubic meter), (megajoule per kilocalorie), where standard temperature for (gram-mole per standard cubic meter) is 20EC,
- B_{ws} = Water vapor content of the vent stream, proportion by volume; except that if the vent stream passes through a final stream jet and is not condensed, it shall be assumed that $B_{\text{ws}} = 0.023$ in order to correct to 2.3 % moisture,
- C_j = Concentration on a dry gas basis of compound "j" in parts per million, as measured for all organic compounds by Method 18 and measured for hydrogen and carbon monoxide by the American Society for Testing and Materials D1946-77, and
- H_j = Net heat of combustion of compound "j", kilocalorie per gram-mole, based on combustion at 25EC and 760 millimeters of mercury. The heats of combustion of vent stream components shall be determined using

American Society for Testing and Materials D2382-76 if published values are not available or cannot be calculated.

4.6 TRE Index Value Calculation

4.6.1 The TRE index value of the vent shall be calculated using the following equation:

$$TRE = \frac{1}{E_{VOC}} [a \% b Q_s \% c H_T \% d E_{VOC}]$$

where:

TRE = TRE index value,

E_{VOC} = Hourly emission rate of VOC (kilograms per hour) as calculated in section 4.5.4,

Q_s = Vent stream flow rate, on a dry basis, in standard cubic meters per minute at a standard temperature of 20EC,

H_T = Vent stream net heating value (megajoules per standard cubic meter), as calculated in section 4.5.6, and

a,b,c,d = Coefficients as listed in Table 1.

4.6.2 The owner or operator of a nonhalogenated vent stream shall use the applicable coefficients in Table 1 to calculate the TRE index value based on a flare, a thermal incinerator with 0 % heat recovery, and a thermal incinerator with 70 % heat recovery, and shall select the lowest TRE index value.

4.6.3 The owner or operator of a unit with a halogenated vent stream, determined as any stream with a total concentration of halogen atoms contained in organic compounds of 200 ppmv or greater, shall use the applicable coefficients in Table 1 to calculate the TRE index value based on a thermal incinerator and scrubber.

Table 1
Coefficients for TRE for Nonhalogenated and Halogenated Vent Streams

Type of Stream	Control Device Basis	Values of Coefficients			
		a	b	c	d
Nonhalogenated	Flare	2.129	0.183	-0.005	0.359
	Thermal incinerator with 0 % heat recovery	3.075	0.021	-0.037	0.018
	Thermal incinerator with 70 % heat recovery	3.803	0.032	-0.042	0.007
Halogenated	Thermal incinerator and scrubber	5.470	0.181	-0.040	0.004

4.7 The owner or operator of an individual vent stream within a process unit with a TRE index value greater than 1.0 subject to the control requirement provision of section 3.2 shall recalculate the flow rate and VOC concentration for that affected facility whenever process

changes are made. Examples of process changes include, but are not limited to, changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The flow rate and VOC concentration shall be recalculated based on test data or on best engineering estimates of the effects of the change to the recovery system.

- 4.8 Where the recalculated values pursuant to section 4.7 yield a TRE index value #1.0, the owner or operator shall notify the District within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by Section 4 within 60 days of that notification.
- 4.9 For the purpose of demonstrating that a process vent stream has a VOC concentration below 500 parts per million by volume, the following procedures shall be followed:
 - 4.9.1 The sampling site shall be selected as specified in section 4.3.1,
 - 4.9.2 Method 18 or Method 25A of Part 60 Appendix A shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of Part 63 Appendix A may be used,
 - 4.9.3 Where Method 18 is used, the following procedures shall be used to calculate ppmv concentration:
 - 4.9.3.1 The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15 minute intervals during the run, and
 - 4.9.3.2 The concentration of VOC shall be calculated using Method 18 according to section 4.3.4,
 - 4.9.4 Where Method 25A is used, the following procedures shall be used to calculate the VOC concentration in ppmv:
 - 4.9.4.1 Method 25A shall be used only if a single VOC is greater than 50 % of total VOC, by volume, in the process vent stream,
 - 4.9.4.2 The process vent stream composition may be determined by either process knowledge, test data collected using an appropriate EPA Method, or a method of data collection validated according to the protocol in Method 301 of Part 63 Appendix A. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current process vent stream conditions,
 - 4.9.4.3 The VOC used as the calibration gas for Method 25A shall be the single VOC present at greater than 50 % of the total VOC by volume,
 - 4.9.4.4 The span value for Method 25A shall be 50 ppmv,
 - 4.9.4.5 Use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale, and
 - 4.9.4.6 The concentration of VOC shall be corrected to 3 % oxygen using the procedures and equation in section 4.3.3, and
 - 4.9.5 To qualify for the low concentration exemption pursuant to section 2.2.4, the owner or operator shall demonstrate 1 of the following:
 - 4.9.5.1 The concentration of VOC plus methane and ethane is below 250 ppmv, as measured by Method 25A, or

4.9.5.2 The concentration of VOC is below 500 parts ppmv, as measured by Method 18.

SECTION 5 Monitoring Requirements

- 5.1 The owner or operator of an affected facility that uses an incinerator to comply with the VOC emission limit specified in section 3.1.1 shall install, calibrate, maintain, and operate according to the manufacturer's specifications a temperature monitoring device equipped with a continuous recorder and having an accuracy of ± 1 % of the temperature being measured expressed in degrees Celsius or $\pm 0.5EC$, whichever is greater.
- 5.1.1 Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox.
- 5.1.2 Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.
- 5.2 The owner or operator of an affected facility that uses a boiler or process heater with a design heat input capacity of less than 44 megawatts to comply with section 3.1.1 shall install, calibrate, maintain, and operate according to the manufacturer's specifications a temperature monitoring device in the firebox. The monitoring device shall be equipped with a continuous recorder and shall have an accuracy of ± 1 % of the temperature being measured expressed in degrees Celsius or $\pm 0.5EC$, whichever is greater. Any boiler or process heater in which all vent streams are introduced with primary fuel is exempt from this requirement.
- 5.3 The owner or operator of an affected facility that uses a flare to comply with section 3.1.2 shall install, calibrate, maintain, and operate according to the manufacturer's specifications a heat-sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate continuous presence of a flame.
- 5.4 The owner or operator of an individual vent stream within a process unit with a TRE index value greater than 1.0 subject to the control requirement provision of section 3.2 shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment as applicable:
- 5.4.1 Where an absorber is the final recovery device in the recovery system, the following:
- 5.4.1.1 A scrubbing liquid temperature monitor equipped with a continuous recorder and having an accuracy of ± 1 % of the temperature being monitored expressed in EC or ± 0.5 EC, whichever is greater, and
- 5.4.1.2 Specific gravity monitor equipped with continuous recorders having an accuracy of ± 0.02 ,
- 5.4.2 Where a condenser is the final recovery device in the recovery system, a condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ± 1 % of the temperature being monitored expressed in EC or ± 0.5 EC, whichever is greater,
- 5.4.3 Where a carbon adsorber is the final recovery device unit in the recovery system, the following:
- 5.4.3.1 An integrating regeneration stream flow monitoring device having an accuracy of ± 10 % of the total flow, capable of recording the total regeneration stream mass flow for each regeneration cycle, and
- 5.4.3.2 A carbon bed temperature monitoring device having an accuracy of ± 1 % of the temperature being monitored expressed in EC or $\pm 0.5EC$, whichever is greater, capable of recording the carbon bed temperature after each regeneration and within 15 minutes of completing any cooling cycle,

- 5.4.4 Where an absorber scrubs halogenated streams after an incinerator, boiler, or process heater, the following:
 - 5.4.4.1 A pH monitoring device equipped with a continuous recorder, and
 - 5.4.4.2 Flow meters equipped with continuous recorders to be located at the scrubber influent for liquid flow and the scrubber inlet for gas stream flow, or
- 5.4.5 As an alternative to the monitoring equipment specified in section 5.4.1, 5.4.2, or 5.4.3, an organics monitoring device equipped with a continuous recorder.
- 5.5 The owner or operator of a process vent using a vent system that contains bypass lines that could divert a vent stream away from the combustion device used shall comply with 1 of the following:
 - 5.5.1 Install, calibrate, maintain, and operate a flow indicator that provides a record of vent stream flow at least once every 15 minutes. The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the combustion device to the atmosphere, or
 - 5.5.2 Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

SECTION 6 Recordkeeping and Reporting Requirements

- 6.1 The owner or operator of each reactor process or distillation operation subject to this regulation shall keep records of the following parameters, as applicable, measured during a performance test or TRE index value determination required under Section 4 and required to be monitored under Section 5:
 - 6.1.1 For a thermal or catalytic incinerator used to comply with section 3.1.1, the following:
 - 6.1.1.1 The average firebox temperature of the incinerator, or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator, measured at least every 15 minutes and averaged over the same time period of the performance testing, and
 - 6.1.1.2 The percent reduction of VOC determined as specified in section 4.3 achieved by the incinerator, or the concentration of VOC (ppmv, by compound) determined as specified in section 4.3 at the outlet of the control device on a dry basis corrected to 3 % oxygen,
 - 6.1.2 For a boiler or process heater used to comply with section 3.1.1 in which all vent streams are not introduced with primary fuel, the following:
 - 6.1.2.1 A description of the location at which the vent stream is introduced into the boiler or process heater, and
 - 6.1.2.2 The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 megawatt measured at least every 15 minutes and averaged over the same time period of the performance testing,
 - 6.1.3 For a boiler or process heater used to comply with section 3.1.1 in which all vent streams are introduced with primary fuel, no records are required,
 - 6.1.4 For a smokeless flare used to comply with section 3.1.2, the following:
 - 6.1.4.1 Flare design (i.e., steam-assisted, air-assisted, or nonassisted),
 - 6.1.4.2 All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test,

- 6.1.4.3 Continuous records of the flare pilot flame monitoring, and
- 6.1.4.4 Records of all periods of operations during which the pilot flame is absent,
- 6.1.5 For an adsorber as the final recovery device of a recovery system used to comply with section 3.2, the following as measured while the vent stream is normally routed and constituted:
 - 6.1.5.1 The exit specific gravity, or, if approved by the District, an alternative parameter that is a measure of the degree of absorbing liquid saturation, and
 - 6.1.5.2 Average exit temperature of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing,
- 6.1.6 For a condenser as the final recovery device of a recovery system used to comply with section 3.2, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing, as measured while the vent stream is normally routed and constituted,
- 6.1.7 For a carbon adsorber as the final recovery device of a recovery system used to comply with section 3.2, the following as measured while the vent stream is normally routed and constituted:
 - 6.1.7.1 The total stream mass or volumetric flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle,
 - 6.1.7.2 Temperature of the carbon bed after regeneration and within 15 minutes of completion of any cooling cycle, and
 - 6.1.7.3 Duration of the carbon bed steaming cycle,
- 6.1.8 As an alternative to the records required by section 6.1.5, 6.1.6, or 6.1.7, the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period as the performance testing while the vent stream is normally routed and constituted, and
- 6.1.9 For any recovery system used to comply with section 3.2, the following:
 - 6.1.9.1 All measurements and calculations performed to determine the flow rate and VOC concentration, heating value, and TRE index value of the vent stream,
 - 6.1.9.2 Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal, and addition of recovery equipment or reactors and distillation units, and
 - 6.1.9.3 Any recalculation of the flow rate, VOC concentration, or TRE index value performed according to section 4.7.
- 6.2 The owner or operator of each reactor process or distillation operation that is exempt from some of the provisions of this regulation pursuant to the 1 gigagram design production capacity exemption of section 2.2.3 shall keep records of the design production capacity or any changes in equipment or process operation that may affect design production capacity of the affected process unit.
- 6.3 The owner or operator of each reactor process or distillation operation that is exempt from some of the provisions of this regulation pursuant to section 2.2.4 shall keep records to indicate that the stream flow rate is less than 0.0085 standard cubic meter per minute or the concentration is less than 500 ppmv, as applicable.
- 6.4 Each record required by section 6.1, 6.2, and 6.3 shall be maintained for a minimum of 5 years and made available to the District upon request.
- 6.5 Beginning July 1, 2001, the owner of operator of a reactor process or distillation operation

that is subject to any provision of this regulation shall keep a record identifying all deviations from the requirements of this regulation and shall submit to the District a written report of all deviations that occurred during the preceding semi-annual period. Semi-annual periods shall run from January 1 to June 30 and July 1 to December 31. If no deviation occurred during the semi-annual period, then the report shall contain a negative declaration. Each report shall be submitted within 60 days following the end of the semi-annual period. The report shall contain the following information:

- 6.5.1 An identification of the reactor process or distillation operation,
- 6.5.2 The beginning and ending date of the reporting period,
- 6.5.3 Identification of all periods during which a deviation occurred,
- 6.5.4 A description, including the magnitude, of the deviation,
- 6.5.5 If known, the cause of the deviation, and
- 6.5.6 A description of all corrective actions taken to abate the deviation.

Adopted v1/6-20-01; effective 6-20-01.

REGULATION 6.50 NO_x Requirements for Portland Cement Kilns

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, which provides for regional control of oxides of nitrogen (NO_x) emissions from portland cement kilns pursuant to the federal mandate published under the EPA's NO_x SIP Call, would allow the District to enforce 401 KAR 51:170 *NO_x requirements for cement kilns*.

SECTION 1 Definitions

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

- 1.1 "Affected facility" means a portland cement kiln that has a process rate equal to or greater than that rate specified in Section 2.
- 1.2 "Control period" means the following:
 - 1.2.1 For the year 2004, the period beginning May 31, 2004, and ending September 30, 2004, and
 - 1.2.2 For all years after 2004, the period beginning May 1 of a year and ending September 30 of that year.

SECTION 2 Applicability

This regulation applies to each portland cement kiln with a process rate, on or after January 1, 1995, equal to or greater than any 1 of the following:

- 2.1 For a long dry kiln, 12 tons of clinker produced per hour,
- 2.2 For a long wet kiln, 10 tons of clinker produced per hour,
- 2.3 For a preheater kiln, 16 tons of clinker produced per hour, and
- 2.4 For a precalciner or preheater/precalciner kiln, 22 tons of clinker produced per hour.

SECTION 3 Standards for Portland Cement Kilns

- 3.1 On and after May 31, 2004, the NO_x emissions from an affected facility during a control period shall not exceed 6.6 pounds per ton of clinker produced, based upon a rolling 30-day average.
- 3.2 The requirement in section 3.1 shall not apply during the following periods:
 - 3.2.1 Startup, shutdown, or malfunction that do not exceed 36 consecutive hours, and
 - 3.2.2 Regularly-scheduled maintenance activities.

SECTION 4 Reporting, Monitoring, and Recordkeeping

- 4.1 Reporting requirements. The owner or operator of an affected facility shall submit the following reports to the District:
 - 4.1.1 By May 31, 2004, a report that includes the following:
 - 4.1.1.1 The number and type of each affected facility,
 - 4.1.1.2 The name and address of the stationary source where the affected facility is located, and
 - 4.1.1.3 The name and telephone number of the person responsible for demonstrating that the

affected facility is in compliance.

- 4.1.2 By October 31 of each year, beginning in 2004, a report that documents the total NO_x emissions from each affected facility during the control period.
- 4.2 Monitoring requirements. Beginning April 1, 2004, the owner or operator of an affected facility shall monitor NO_x emissions during each control period in accordance with the provisions in 40 CFR 96.70 to 96.76.
- 4.3 Recordkeeping requirements. The owner or operator of an affected facility shall maintain all records necessary to demonstrate compliance with the standards in Section 3 for a period of 5 years. These records shall:
 - 4.3.1 Be kept at the stationary source where the affected facility is located,
 - 4.3.2 Be made available to the District, the Cabinet, and the EPA upon request, and
 - 4.3.3 Contain the following information:
 - 4.3.3.1 NO_x emissions from the affected facility, in pounds of NO_x per ton of clinker produced,
 - 4.3.3.2 The results of all performance tests,
 - 4.3.3.3 Daily clinker production records, and
 - 4.3.3.4 The date, time, and duration of all startups, shutdowns, or malfunctions in the operation of the affected facility or the emissions monitoring equipment.

Adopted v1/3-20-02; effective 3-20-02.

REGULATION 6.52 Standards of Performance for Solvent Cleaning Operations Associated with Commercial Surface Coating and Printing Processes

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 hand-wipe cleaning, flush cleaning, spray gun cleaning, and purge processes associated with commercial surface coating and printing processes during a certain portion of 2003.

SECTION 1 Definitions

- 1.1 “Affected facility” means a process in which a VOC-containing solvent is used for solvent cleaning associated with a commercial surface coating or printing process.
- 1.2 “Control period” means the period beginning June 16, 2003, and ending September 15, 2003.
- 1.3 “Cleaning solvent” means a VOC-containing liquid used to perform solvent cleaning.
- 1.4 “Flush cleaning process” means the use of a solvent to remove adhesives, inks, coatings, or other contaminants from the internal surfaces and passages of the equipment by flushing solvent through the equipment.
- 1.5 “Hand-wipe cleaning process” means the removal of loosely-held adhesives, inks, coatings, or other contaminants for the purpose of surface preparation or cleaning the surface parts of coating or printing process equipment by physically rubbing the surface with an absorbent material such as a rag, paper, or cloth that has been moistened with a cleaning solvent.
- 1.6 “Liquid leak” means a visible liquid solvent leak from a container at a rate of more than three drops per minute or is visible as a mist.
- 1.7 “Non-absorbent container” means a container made of a non-porous material that does not allow the migration of the liquid solvent through the container.
- 1.8 “Non-leaking container” means a container without a liquid leak.
- 1.9 “Purge process” means the expelling of the coating material with either fresh coating material or cleaning solvent to clear the spray gun.
- 1.10 “Solvent cleaning” means the use of a cleaning solvent in a hand-wipe cleaning process, flush cleaning process, spray gun cleaning process, or purge process.
- 1.11 “Spray gun cleaning process” means the use of a cleaning solvent to remove adhesives, coatings, or other contaminants from a spray gun.
- 1.12 “Surface preparation” means the removal of contaminants from the surface of a substrate to be coated or printed.

SECTION 2 Applicability

This regulation applies to any affected facility.

SECTION 3 Standards for Cleaning Solvent

To the extent feasible, the owner or operator of an affected facility should, during the control

period, meet one of the following provisions:

- 3.1 Use cleaning solvent that has a vapor pressure equal to or less than 7 millimeters of mercury (mm Hg) at 20°C (68°F),
- 3.2 Use cleaning solvent that is an aqueous solution meeting all of the following provisions:
 - 3.2.1 At least 80 percent of the solution, as applied, is water,
 - 3.2.2 The flash point, as reported by the manufacturer, is greater than 93°C (200°F), and
 - 3.2.3 The solution is miscible with water, or
- 3.3 Reduce, adjusting for the rate of production, the volume of cleaning solvent used by at least 60 percent from the volume of cleaning solvent used immediately before the effective date of this regulation.

SECTION 4 Solvent Cleaning Operational Practices

To the extent feasible, the owner or operator of an affected facility should, during the control period, meet the following provisions as applicable to the affected facility:

- 4.1 Fresh cleaning solvent used for a hand-wipe cleaning process of an affected facility shall, prior to its use, be stored in a closed container or hand-held spray bottle.
- 4.2 Fresh cleaning solvent used for a hand-wipe cleaning process of an affected facility shall not be applied to the absorbent material or the surface to be cleaned using a propellant-induced force.
- 4.3 Spent cleaning solvent used for a flush cleaning process of an affected facility shall be contained in an enclosed container or collection system that is kept closed when not in use or into a system with equivalent emission control.
- 4.4 A spray gun cleaning process of an affected facility shall be accomplished using one of the following techniques:
 - 4.4.1 Enclosed system. The spray gun is cleaned in an enclosed system that is closed at all times except when the spray gun is inserted into or removed from the system. Cleaning consists of forcing cleaning solvent through the gun.
 - 4.4.2 Nonatomized cleaning. The spray gun is cleaned by placing cleaning solvent in the pressure pot and forcing it through the spray gun with the atomizing cap in place. No atomizing air is to be used, and the spent cleaning solvent from the spray gun shall be directed into a vat, drum, or other waste container that is closed when not in use.
 - 4.4.3 Disassembled spray gun cleaning. The spray gun is disassembled and the components are cleaned by hand in a vat that shall remain closed at all times except when in use. Alternatively, the components are soaked in a vat that shall remain closed during the soaking period and when components are inserted into or removed from the vat.
 - 4.4.4 Atomizing cleaning. The spray gun is cleaned by forcing the cleaning solvent through the gun and directing the resulting atomized spray into a waste container that is fitted with a device designed to capture the atomized cleaning solvent emissions.
- 4.5 Spent coating material or cleaning solvent used for a purge process of an affected facility shall be directed to a purge capture system that contains all of the purge material.

SECTION 5 Storage and Disposal

- 5.1 All cleaning solvent used to perform solvent cleaning associated with an affected facility shall be stored in a non-absorbent, non-leaking container that shall be kept closed at all times except when filling or emptying.
- 5.2 Unless prohibited by fire prevention authorities, used absorbent materials used for a hand-wipe cleaning process of an affected facility shall be stored in a closed, non-absorbent,

non-leaking container.

SECTION 6 Review of Processes and Changes to Processes

- 6.1 By June 1, 2003, the owner or operator of each affected facility shall:
 - 6.1.1 Review each hand-wipe cleaning process, flush cleaning process, spray gun cleaning process, and purge process of the affected facility to ascertain whether the current processes are consistent with the provisions of Sections 3 to 5,
 - 6.1.2 For each process reviewed pursuant to section 6.1.1 that is not currently consistent with the provisions of Sections 3 to 5, determine whether process changes are feasible to be implemented during the control period, and
 - 6.1.3 Submit in writing, to the District, the results of the review pursuant to section 6.1.1, the determinations pursuant to section 6.1.2, and a description of any changes to be made during the control period.
- 6.2 Before implementing a process change pursuant to section 6.1, the owner or operator of the affected facility should appropriately address any related safety issues.
- 6.3 To the extent that a process change is not prohibited to be made prior to the issuance of a permit pursuant to Regulation 2.16 *Title V Operating Permits* or Regulation 2.05 *Prevention of Significant Deterioration of Air Quality*, and notwithstanding the permit requirements of Regulation 2 *Permit Requirements*, the owner or operator of an affected facility may, after notifying the District pursuant to section 6.1.3, implement process changes pursuant to section 6.1, except for process changes that increase the capacity of the affected facility, up to the end of the control period without first obtaining an otherwise-required permit from the District pursuant to Regulation 2. Permanent implementation of a process change after the control period is subject to the permit requirements of Regulation 2.

Adopted v1/5-9-03; effective 5-9-03.