401 KAR 61:001. Definitions and abbreviations of terms used in 401 KAR Chapter 61.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.01-010, 224.20-100, 224.20-110, 224.20-120; 40 CFR Chapter I; Appendices A through K to 40 CFR 50; 40 CFR 5 1. 100(s); 40 CFR 53; 40 CFR 60; Appendices A and B to 40 CFR 60; Appendix B to 40 CFR 61; 42 USC 7410; 42 USC 7411(a)(8)
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Environmental and Public Protection Cabinet to promulgate regulations for the prevention, abatement, and control of air pollution. This administrative regulation provides for the defining of terms used in 401 KAR Chapter 61.

Section 1. General definitions. As used in the Division for Air Quality administrative regulations of 401 KAR Chapter 61, unless the content clearly indicates otherwise in a specific administrative regulation, the following words shall have the following meanings:

(1) "Affected facility" means an apparatus, building, operation, road, or other entity or series of entities that emits or may emit an air contaminant into the outdoor atmosphere.

(2) "Air contaminant" has the meaning given it in KRS 224.01-010.

(3) "Air pollutant" means an air contaminant.

(4) "Air pollution" has the meaning given it in KRS 224.01-010.

(5) "Air pollution control equipment" means a mechanism, device or contrivance used to control or prevent air pollution, that is not, aside from air pollution control laws and regulations, vital to production of the normal product of the source or to its normal operation.

(6) "Alteration" means:
  (a) The installation or replacement of air pollution control equipment at a source;

  (b) A physical change in or change in the method of operation of an affected facility that increases the potential to emit of a pollutant (to which a standard applies) emitted by the facility or that results in the emission of an air pollutant (to which a standard applies) not previously emitted.

(7) "Alternative method" means a method of sampling and analyzing for an air pollutant that is not a reference method or equivalent method and has been demonstrated to the cabinet's and the U.S. EPA's satisfaction to, in specific cases, produce results adequate for

its determination of,# compliance.

(8) "Ambient air" means that portion of the atmosphere, external to buildings, to which the general public has access.

(9) "Ambient air quality standard" means a numerical expression of a specified concentration level for a particular air contaminant and the time averaging interval over which that concentration level is measured and is a goal to be achieved in a stated time through the application of appropriate preventive or control measures.

(10) "Cabinet" has the meaning given it in KRS 224.01-010.

(11) "Capital expenditure” is defined in 40 C.F.R. 60.2.

(12) "Commence" means that an owner or operator has undertaken a continuous program of construction, modification, or reconstruction of an affected facility, or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction, modification, or reconstruction of an affected facility.

(13) "Compliance schedule" means a time schedule of remedial measures including an enforceable sequence of actions or operations leading to compliance with a limitation or standard.

(14) "Construction" means fabrication, erection, installation or modification of an air contaminant source.

(15) "Continuous monitoring system" means the total equipment, required under the applicable regulations used to sample, to condition (if applicable), to analyze and to provide a permanent record of emissions or process parameters.

(16) "Design capacity" means the maximum rate at which a unit was designed to operate.

(17) "Director" means Director of the Division for Air Quality of the Environmental and Public Protection Cabinet.

(18) "District" has the meaning given it in KRS 224.01-010.

(19) "Emission standard" means that numerical limit that fixes the amount of an air contaminant or air contaminants that may be vented into the atmosphere (open air) from an affected facility or from air pollution control equipment installed in an affected facility.

(20) "Equivalent method" means a method of sampling and analyzing for an air pollutant that has been demonstrated to the cabinet's and the U.S. EPA's satisfaction to have a

consistent and quantitatively known relationship to the reference method, under specified conditions.

(21) “Exempt compound” or "Exempt solvent" means an organic compound listed in the definition of volatile organic compound as not participating in atmospheric photochemical reactions.

(22) "Existing source" means a source that is not a new source.

(23) "Extreme nonattainment county" or "extreme nonattainment area" means a county or portion of a county designated extreme nonattainment in 401 KAR 51:010.

(24) "Fixed capital cost" means the capital needed to provide all the depreciable components.

(25) "Fuel" means natural gas, petroleum, coal, wood, and any form of solid, liquid, or gaseous fuel derived from these materials for the purpose of creating useful heat.

(26) "Fugitive emissions" means the emissions of an air contaminant into the open air other than from a stack or air pollution control equipment exhaust.

(27) "Hydrocarbon" means an organic compound consisting predominantly of carbon and hydrogen.

(28) "Incineration" means the process of igniting and burning solid, semi-solid, liquid, or gaseous combustible wastes.

(29) "Intermittent emissions" means emissions of particulate matter into the open air from a process that operates for less than any six (6) consecutive minutes.

(30) "Major source" means a source with a potential emission rate is equal to or greater than 100 tons per year of any one (1) of the following pollutants: particulate matter, sulfur oxides, nitrogen oxides, volatile organic compounds or carbon monoxide.

(31) "Malfunction" means a failure of air pollution control equipment, or process equipment, or of a process to operate in a normal or usual manner. Failures that are caused entirely or in part by poor maintenance, careless operation, or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions.

(32) "Marginal nonattainment county" or "marginal nonattainment area" means a county or portion of a county designated marginal nonattainment in 401 KAR 51:010.
“µg” means microgram.

"min" means minute.

"MM" means million.

(33) "Moderate nonattainment county" or "moderate nonattainment area" means a county or portion of a county designated moderate nonattainment in 401 KAR 51:010.

(34) "Modification" means any physical change in, or change in the method of operation of, an affected facility that increases the amount of an air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of an air pollutant (to which a standard applies) into the atmosphere not previously emitted. The following shall not, by themselves, be considered modifications:

(a) Maintenance, repair, and replacement that the cabinet determines to be routine for a source category;

(b) An increase in production rate of an affected facility, if that increase can be accomplished without a capital expenditure@on that facility;

(c) An increase in the hours of operation;

(d) Use of an alternative fuel or raw material if, prior to the date any standard becomes applicable to that source type, the affected facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in 42 USC 7411 (a)(8), shall not be considered a modification;

(e) The addition or use of any system or device the primary function of which is the reduction or air pollutants, except when an emission control system is removed or is replaced by a system that the cabinet determines to be less environmentally beneficial;

(f) The relocation or change in ownership of an existing facility.

(35) "Monitoring device" means the total equipment, required in applicable regulations, used to measure and record, if applicable, process parameters.

(36) "New source" means a source, the construction, reconstruction, or modification of which commenced on or after the classification date as defined in the applicable regulation. A source, upon reconstruction, becomes a new source, irrespective of a change in emission rate.

(37) "Nitrogen oxides" means all oxides of nitrogen except nitrous oxide, as measured by test methods specified by the cabinet.

(38) "Opacity" means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

(39) "Owner or operator" means a person who owns, leases, operates, controls, or supervises an affected facility or a source to which an affected facility is a part.

(40) "Particulate matter" means a material, except uncombined water, that exists in a finely divided form as a liquid or a solid as measured by an approved test method.

(41) "Particulate matter emissions" means, except as used in 40 CFR Part 60, all finely divided solid or liquid material, other than uncombined water, emitted to the ambient air as measured by applicable reference methods, or an equivalent or alternative method specified in 40 CFR Chapter 1, or by a test method specified in the approved state implementation plan.

(42) "Person" means an individual, public or private corporation, political subdivision, government agency, municipality, industry, co-partnership, association, firm, trust, estate, or other entity.

"PM .5" means particulate matter with an aerodynamic diameter less than or equal _to a_ nominal _two-and-a-half (2.5) micrometers as measured by a reference method in 40 C.F.R. Part 50, Appendix L, and designated in accordance with 40 C.F.R. Part 53, or by an equivalent method designated in accordance with 40 C.F.R. Part 53.

(43) "PM_{10}" means particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers as measured by a reference method in 40 C.F.R. Part 50, Appendix J, which has been incorporated by reference in 401 KAR 50:015, and designated in accordance with 40 CFR Part 53, or by an equivalent method designated in accordance with 40 CFR Part 53.

(44) "PM_{10} emissions" means finely divided solid or liquid material with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers emitted to the ambient air as measured by an applicable reference method, or an equivalent or alternative method, specified in 40 CFR Chapter 1, or by a test method specified in the approved state implementation plan.

(45) "Potential to emit" or “PTE” means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. A physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions shall not count in determining the potential to emit of a stationary source.

(46) "Reconstruction" means the replacement of components of an existing affected facility to the extent that the fixed capital cost of the new components exceeds fifty (50) percent of the fixed capital cost that would be required to construct a comparable entirely new affected facility, and it is technologically and economically feasible to meet the applicable new source standards. Individual sections of these administrative regulations may include specific provisions which refine and delimit the concept of reconstruction set forth in this subsection. The cabinet's determination as to whether the proposed replacement constitutes reconstruction shall be based on:

(a) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(b) The estimated life of the affected facility after the replacements compared to the life of a comparable entirely new affected facility;

(c) The extent to which the components being replaced cause or contribute to the emissions from the affected facility; and

(d) Economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(47) "Reference method" means a method of sampling and analyzing for an air pollutant as published in Appendices A through N to 40 C.F.R. 50; 40 C.F.R. Part 53; Appendices A and B to 40 C.F.R. 60; and Appendix B to 40 C.F.R. 61 40 C.F.R. Part 63, Appendices A to D which have been incorporated by reference in 401 KAR 50:015. This term may be more narrowly defined within a specific regulation.

(48) "Run" means the net period of time when an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

(49) "Secondary emissions" means emissions which occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. Secondary emissions shall be specific, well defined, quantifiable, and shall impact the same general area as does the stationary source modification that causes the secondary emissions. Secondary emissions may include, but are not limited to emissions from an offsite support facility that would not otherwise be constructed or increase its emissions as a result of the construction or operation of the major stationary source or major modification. Secondary emissions do not include emissions that come directly from a mobile source, such as the emissions from the tailpipe of a motor vehicle, from a train, or from a vessel.

(50) "Serious nonattainment county" or "serious nonattainment area" means a county or portion of a county designated serious nonattainment in 401 KAR 51:010.

(51) "Severe nonattainment county" or "severe nonattainment area" means a county or portion of a county designated severe nonattainment in 401 KAR 51:010.

(52) "Shutdown" means the cessation of an operation.

(53) "Source" means one (1) or more affected facilities contained within a given contiguous property line. The property shall be considered contiguous if separated only by a public thoroughfare, stream, or other right of way.

(54) "Stack or chimney" means a flue, conduit, or duct arranged to conduct emissions to the atmosphere.

(55) "Standard" means an emission standard, a standard of performance, or an ambient air quality standard promulgated in the administrative regulations of the Division for Air Quality or the emission control requirements, necessary to comply with 401 KAR Chapter 5 1, of the administrative regulations of the Division for Air Quality.

(56) "Standard conditions" means:

(a) For source measurements means twenty (20) degrees Celsius (sixty- eight (68) degrees Fahrenheit) and a pressure of 760 mm Hg (29.92 in. of Hg);

(b) For the purpose of air quality determinations means twenty-five (25) degrees Celsius (seventy-seven (77) degrees Fahrenheit) and a reference pressure of 760 mm Hg (29.92 in. of Hg).

(57) "Start-up" means the setting in operation of an affected facility.

(58) "State implementation plan" means the most recently prepared plan or revision required by 42 USC 7410 that has been approved by the U.S. EPA.

(59) "Total suspended particulates" or “TSP” means particulate matter as measured by the method described in 40 C.F.R. Part 50, Appendix B, which has been incorporated by reference in 401 KAR 50:015.

(60) "Uncombined water" means water that can be separated from a compound by ordinary physical means and that is not bound to a compound by internal molecular forces.

(61) "Urban county" means a county that is a part of an urbanized area with a population of greater than 200,000 based upon the 1980 census. When a portion of a county is the start of an urbanized area, then the entire county shall be classified as urban with respect to the administrative regulations of the Division for Air Quality.

(62) "Urbanized area" means an area defined by the U.S. Department of Commerce, Bureau of

Census.

"Volatile organic compound" or "VOC" is defined in 40 C.F.R. 51 .100(s).

“yd” means yard.

Section 2. Abbreviations. The abbreviations used in the administrative regulations of 401 KAR Chapter 61, shall have the following meanings:

AOAC - Association of Official Analytical Chemists
ANSI - American National Standards Institute
ASTM - American Society for Testing and Materials
BOD - Biochemical oxidant demand
BTU - British Thermal Unit
^{o}C - Degree Celsius (centigrade)
Cal - calorie
cfm - cubic feet per minute
CFR - Code of Federal Regulations
CH_4 -methane
CO - Carbon monoxide
$C0_2$ - Carbon dioxide
COD - Chemical oxidant demand
dscf - dry cubic feet at standard conditions
dscm - dry cubic meter at standard conditions
^{o}F - Degree Fahrenheit
ft - feet
g - gram
gal - gallon
gr - grain
hr - hour
HCL - Hydrochloric acid
Hg - mercury
HF - Hydrogen fluoride
H_20- water
H_2S - Hydrogen sulfide
H_2SO_4 - Sulfuric acid
in - inch
J - joule
KAR - Kentucky Administrative Regulations
kg - kilogram
KRS - Kentucky Revised Statutes
l - liter
lb - pound
m - meter

m^3 - cubic meter
min - minute
mg - milligram
MJ - megajoules
MM - million
mm - millimeter
mo - month
Ng - nanograms
N_2 - Nitrogen
NO - Nitric oxide
$N0_2$ - Nitrogen dioxide
NO_x - Nitrogen oxides
oz - ounce
0_2 - oxygen
0_3 - ozone
ppb - parts per billion
ppm - parts per million
ppm (w/w) - parts per million (weight by weight)
jig - microgram
psia - pounds per square inch absolute
psig - pounds per square inch gage
S - at standard conditions
sec - second
SIP - State implementation plan
$S0_2$ - Sulfur dioxide
sq - square
TAPPI - Technical Association of the Pulp and Paper Industry
TSP - Total suspended particulates
TSS - Total suspended solids
U.S. EPA - United States Environmental Protection Agency
UTM - Universal Transverse Mercator
VOC - Volatile organic compound
yd - yard

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401 KAR 61:005. General provisions.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation is to provide for the establishment of monitoring requirements, performance testing requirements, and other general provisions as related to existing sources.

Section 1. Applicability.

The provisions of this chapter shall apply to the owner or operator of any existing source for which a standard of performance has been promulgated under this chapter.

Section 2. Performance Test.

(1) On or before the completion of a control plan at an affected facility and at such other times as may be required by the department, the owner or operator of an affected facility, except for those affected facilities specified below, shall conduct performance test(s) according to 401 KAR 50:045 and shall furnish the department a written report of the results of such performance test(s).

(a) Process operation with a process weight rate of less than 100 tons per hour;

(b) Indirect heat exchangers of less than 250 million BTU heat input;

(c) Incinerator with a charging rate of forty-five (45) metric tons per day (fifty (50) tons/day) or less;

(d) Affected facilities specified in: 401 KAR 61:040, 401 KAR 61:045, 401 KAR 61:050, 401 KAR 61:056, 401 KAR 61:060, 401 KAR 61:085, 401 KAR 61:090, 401 KAR 61:095, 401 KAR 61:100, 401 KAR 61:105, 401 KAR 61:110, 401 KAR 61:120, 401 KAR 61:122, 401 KAR 61:124, 401 KAR 61:125, 401 KAR 61:130, 401 KAR 61:132, 401 KAR 61:135, 401 KAR 61:137, 401 KAR 61:150, 401 KAR 61:155, 401 KAR 61:160.

(2) The department may require the owner or operator of any affected facility including those specified in subsection (1) of this section to conduct performance test(s) according to 401 KAR 50:045 and furnish a written report of the results of such performance test(s).

Section 3. Emission Monitoring.

This section sets forth 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.

(1) The owner or operator of a source in a category listed below shall:

(a) Install, calibrate, operate and maintain all monitoring equipment necessary for continuously monitoring the pollutants specified in this section for the applicable source category;

(b) Complete the installation and performance tests of such equipment and begin monitoring and recording within eighteen (18) months from June 29, 1979, except as provided in paragraph (c) of this subsection; and

(c) For continuous emission monitoring systems for which there are no performance specifications under Appendix B of 40 CFR 60, filed by reference in 401 KAR 50:015, as of June 29, 1979, complete the installation and performance tests of such equipment and begin monitoring and recording within eighteen (18) months of promulgation of the applicable performance specifications under Appendix B of 40 CFR 60.

(2) The source categories and the respective monitoring requirements are listed below.

(a) Indirect heat exchangers, as specified in subsection (6)(a) of this section shall be monitored for opacity, sulfur dioxide emissions, and oxygen or carbon dioxide.

(b) Sulfuric acid plants, as specified in subsection (6)(b) of this section shall be monitored for sulfur dioxide emissions.

(c) Nitric acid plants as specified in subsection (6)(c) of this section shall be monitored for nitrogen oxides emissions.

(d) Petroleum refinery affected facilities as specified in subsection (6)(d) of this section shall be monitored as specified in subsection (6)(d) of this section.

(e) Incinerators, as specified in subsection (6)(f) of this section, shall be monitored for opacity.

(f) Control devices, as specified in subsection (6)(f) of this section, shall be monitored for opacity.

(3) Exemption. Sources which are schedules for retirement within five (5) years after June 29, 1979 are exempt from the requirements of this section, provided that adequate evidence and guarantees are provided that clearly show that the source will cease operating on or before that date.

(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 subsection (1)(b) of this section, provided the owner or operator of such facility demonstrates that good faith efforts have been made to obtain and install such devices within such prescribed time-frame.

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

(6) Monitoring requirements:

(a) Indirect heat exchangers. Each indirect heat exchanger, except as provided in the following subparagraphs, with an annual average capacity factor of greater than thirty (30) percent as demonstrated to the department 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 in rated capacity.)

1. A continuous monitoring system for the measurement of opacity which meets the appropriate performance specification as specified in subsection (7) of this section shall be installed, calibrated, maintained, and operated in accordance with the procedures of this subsection by the owner or operator of any such indirect heat exchanger of greater than 250 million BTU per 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 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.

2. A continuous monitoring system for the measurement of sulfur dioxide which meets the appropriate performance specifications as specified in subsection (7) of this section 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.

3. A continuous monitoring system for the measurement of the percent oxygen or carbon dioxide which meets the appropriate performance specifications as specified in subsection (7) of this section 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.

(b) Sulfuric acid plants. For the purposes of this regulation, "sulfuric acid plant" means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds. The owner or operator of each sulfuric acid plant of greater than 200 tons per day production capacity, the production capacity being expressed as 100 percent acid, shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of sulfur dioxide which meets the appropriate performance specifications as specified in subsection (7) of this section for each sulfuric acid producing facility within such plant.

(c) Nitric acid plants. For the purposes of this regulation "nitric acid plant" means any facility producing nitric acid thirty (30) to seventy (70) percent by weight in strength by either the pressure or atmospheric pressure process. The owner or operator of each nitric acid plant of greater than 200 tons per day production capacity, the production capacity being expressed as 100 percent acid, shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of nitrogen oxides which meet the appropriate specifications as specified in subsection (7) of this section for each nitric acid producing facility within such plant.

(d) Petroleum refineries. The owner or operator of each affected facility specified in this paragraph shall install, calibrate, maintain and operate continuous monitoring equipment as follows:

1. A continuous monitoring system for the measurement of opacity for catalyst regenerator for fluid bed cracking units of greater than 20,000 barrels per day fresh feed capacity which meets the appropriate performance specifications specified in subsection (7) of this section.

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 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section (except where a continuous monitoring system for the measurement of hydrogen sulfide is installed under subparagraph 3 of this paragraph). The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 of 40 CFR 60 paragraph 2.1 and for 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.

3. An instrument for continuously monitoring and recording concentrations of hydrogen sulfide in fuel gases burned in any fuel gas combustion device subject to 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section, 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 (1) location, if monitoring at this location accurately represents the concentration of hydrogen sulfide in the fuel gas burned. The span of this continuous monitoring system shall be 300 ppm.

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 401 KAR 61:145 which meets the appropriate performance specifications in subsection (7) of this section, 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.

5. An instrument(s) 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 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section, if compliance is achieved through the use of a reduction control system not followed by incineration. The span(s) of this continuous monitoring system shall be set at twenty (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. An instrument for continuously monitoring and recording the concentration of sulfur dioxide in gases discharged into the atmosphere from fluid catalytic cracking unit catalyst regenerators subject to 401 KAR 61:145 which meets the appropriate performance specifications specified in subsection (7) of this section. The span of this continuous monitoring system shall be 1,500 ppm.

(e) Incinerators. Each incinerator with a charging capacity of more than forty-five (45) metric tons per day (fifty (50) tons/day) shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity which meets the appropriate performance specifications as specified in subsection (7) of this section.

(f) Each control device with a concentrated discharge associated with the affected facilities subject to 401 KAR 61:075, or 401 KAR 61:080 shall install, calibrate, maintain, and operate a continuous monitoring system for the measurement of opacity which meets the appropriate performance specifications as specified in subsection (7) of this section.

(7) Except as provided in subsection (8) of this section, all owners or operators which are required to comply with this section shall demonstrate compliance with the following performance specifications of Appendix B to 40 CFR 60.

(a) Continuous monitoring systems for measuring opacity shall comply with Performance Specification 1.

(b) Continuous monitoring systems for measuring sulfur dioxide shall comply with Performance Specification 2.

(c) Continuous monitoring systems for measuring nitrogen oxides shall comply with Performance Specification 2.

(d) Continuous monitoring systems for measuring oxygen shall comply with Performance Specification 3.

(e) Continuous monitoring systems for measuring carbon dioxide shall comply with Performance Specification 3.

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

(a) Continuous monitoring systems for measuring opacity of emissions shall be capable of measuring emission levels within plus or minus twenty (20) percent with a confidence level of ninety-five (95) percent. The Calibration Error Test and associated calculation procedures set forth in Performance Specification 1 of Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification;

(b) Continuous monitoring systems for measurement of nitrogen oxides or sulfur dioxide shall be capable of measuring emission levels within plus or minus twenty (20) percent with a confidence level of ninety-five (95) percent. The Calibration Error Test, the Field Test for Accuracy (Relative), and associated operating and calculation procedures set forth in Appendix B to 40 CFR 60 shall be used for demonstrating compliance with this specification.

(c) 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 paragraphs (a) and/or (b) of this subsection if requested by the department.

(d) All continuous monitoring systems referenced by this subsection 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 (5) years from June 29, 1979.

(9) Calibration gases. For sulfur dioxide monitoring systems installed on indirect heat exchangers, sulfuric acid plants or petroleum refinery fluid catalyst cracking unit regenerators, the pollutant gas used to prepare calibration gas mixtures (Section 2.1, Performance Specification 2, Appendix B to 40 CFR 60) shall be sulfur dioxide. For nitrogen oxides monitoring systems, installed on nitric oxide plants the pollutant gas used to prepare calibration gas mixtures (Section 2.1, Performance Specification 2, Appendix B to 40 CFR 60) shall be nitrogen oxide. This gas shall also be used for daily checks under subsection (13) of this section 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 (6) months from dates from dates of manufacture, span and zero gases shall be reanalyzed by conducting triplicate analyses using the reference methods in Appendix A to 40 CFR 60 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.

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

(a) Continuous monitoring systems for measuring opacity shall complete a minimum of one (1) cycle of operation (sampling, analyzing, and data recording) for each successive ten (10) second period.

(b) Continuous monitoring systems for measuring oxides of nitrogen, carbon dioxide, oxygen, or sulfur dioxide shall complete a minimum of one (1) cycle of operation (sampling, analyzing, and data recording) for each successive fifteen (15) minute period.

(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 Appendix B of 40 CFR 60.

(12) Combined effluents. When the effluents from two (2) or more affected facilities of similar design and operating characteristics are combined before being released to the atmosphere, the department may allow monitoring systems to be installed on combined effluent. When the affected facilities are not of similar design and operating characteristics, or when the effluent from one (1) point, the department shall establish alternate procedures to implement the intent of these requirements.

(13) Zero and span drift. Owners or operators of all continuous monitoring systems installed

in accordance with the requirements of this subsection shall record the zero and span drift in accordance with the method prescribed by the manufacturer of such instruments; to subject the instruments to the manufacturer's recommended adjustments at shorter intervals, in which case the recommendations shall be followed; to adjust the zero and span whenever the twenty-four (24) hour zero drift or twenty-four (214) hour calibration drift limits of the applicable performance specifications in Appendix B of 40 CFR 60 are exceeded; and to adjust continuous monitoring systems referenced by subsection (8) of this section whenever the twenty-four (24) hour zero drift or twenty-four (24) hour calibration drift exceeds ten (10) percent of the emission standard.

(14) Span. Instrument span should be approximately 200 percent of the expected instrument data display output corresponding to the emission standard of the source.

(15) Alternate procedures and requirements. The department may allow equivalent procedures and requirements that have been approved by the U.S. Environmental Protection Agency for continuous monitoring systems as follows:

(a) Alternate monitoring requirements to accommodate continuous monitoring systems that require corrections for stack moisture conditions (e.g., an instrument measuring sulfur dioxide emissions on a wet basis could be used with 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 concentrations to a dry basis).

(b) Alternate locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate to the satisfaction of the department that installation at alternate locations will enable accurate and representative measurements.

(c) Alternative procedures for performing calibration checks (e.g., some instruments may demonstrate superior drift characteristics that require checking at less frequent intervals).

(d) Alternative monitoring requirements when the effluent from two (2) or more identical affected facilities is released to the atmosphere through more than one (1) 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).

(e) Alternate continuous monitoring systems that do not meet the spectral response requirements in Performance Specification 1, Appendix B of 40 CFR 60, 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 department may require that such demonstration be performed for each affected facility.

(16) Minimum data requirements. The following paragraphs 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 division.

(a) Owners or operators of facilities required 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 subsection. All quarterly reports shall be postmarked by the thirtieth (30th) day following the end of each calendar quarter.

(b) For opacity measurements, the summary shall consist of the magnitude in actual percent opacity of six (6) minute averages of opacity greater than the opacity standard in the applicable standard for each hour of operation of the facility. Average vales may be obtained by integration over the averaging period or by arithmetically averaging a minimum of four (4) equally spaced, instantaneous opacity measurements in excess of the standard, minus the two (2) minute exemption). If more than one (1) 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.

(c) 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.

(d) The date and time identifying each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs or adjustments shall be reported. Proof of continuous monitoring system performance whenever system repairs or adjustments have been made is required.

(e) When no excess emissions have occurred and the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be included in the report.

(f) 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 (2) years from the date of collection of such data or submission of such summaries.

(17) Owners or operators of affected facilities shall use the following procedures for

converting monitoring data to units of the standard where necessary.

(a) For indirect heat exchangers the following procedures shall be used to convert gaseous emission monitoring data in parts per million to g/million cal (lb/million BTU) where necessary:

1. When the owner or operator of an indirect heat exchanger elects under subsection (6)(a)3 of this section to measure oxygen in the flue gases, the measurements of the pollutant concentration and oxygen concentration shall each be on a dry basis and Equation I of the conversion procedures in Appendix A to this regulation shall be used.

2. When the owner or operator elects under subsection(6)(a)3 of this section 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 Equation II of the conversion procedures in Appendix A to this regulation shall be used.

(b) For sulfuric acid plants the owner or operator shall:

1. Establish a conversion factor three (3) times daily according to the procedures in 401 KAR 59:035, Section 5(2);

2. Multiply the conversion factor by the average sulfur dioxide concentration in the flue gases to obtain average sulfur dioxide emissions in kg/metric ton (lb/short ton); and

3. Report the average sulfur dioxide emission for each averaging period in excess of the applicable emission standard in the quarterly summary.

(c) The department may allow data reporting or reduction procedures varying from those set forth in this section if the owner or operator of a source shows to the satisfaction of the department that his procedures are at least as accurate as those in this section. Such procedures may include but are not limited to the following:

1. Alternative procedures for computing emission averages that do not require integration (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).

2. Alternative methods of converting pollutant concentration measurements to the units of the emission standards.

(18) Special consideration. The department may provide for approval, on a case-by-case basis, of alternative monitoring requirements different from the provisions of this section if the provisions of this section (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 department exempts any source subject to this section by the use of this provision from installing continuous emission monitoring systems, the department 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:

(a) Alternative monitoring requirements may be prescribed when installation of a continuous monitoring system or monitoring device specified by this section would not provide accurate determinations of emissions.

(b) Alternate monitoring requirements may be prescribed when the affected facility is infrequently operated.

(c) Alternative monitoring requirements may be prescribed when the department deems that the requirements of this section would 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.

(d) Alternative monitoring requirements may be prescribed when the department deems that monitoring systems prescribed by this section cannot be installed due to physical limitations at the facility.

[SIP Compilation Table After Appendix]

APPENDIX A TO 401 KAR 61:005
CONVERSION PROCEDURES

Equation I. $$E = \frac{CF\,(20.9)}{(20.9 - \%O_2)}$$

Equation II. $$E = \frac{C\,F_c\,(100)}{\%CO_2}$$

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

C = pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each hourly period by $4.16 \times 10^{-5}M$ g/dscm per ppm ($2.64 \times 10^{-9}M$ lb/dscf per ppm)

where M = pollutant molecular weight, g/g-mole (lb/lb-mole).

M = 64 for sulfur dioxide and
46 for oxides of nitrogen.

$\%O_2$ = Oxygen volume (expressed as percent) determined with equipment specified under Section 3(6)(a)3.

$\%CO_2$ = carbon dioxide volume (expressed as percent) determined with equipment specified under Section 3(6)(a)3.

F, Fc = a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of carbon dioxide generated to the calorific value of the fuel combusted (Fc) respectively. Values of F and Fc are given in 401 KAR 59:015 as applicable.

Effective Date: December 1, 1982

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	DEC 24, 1980	45 FR 84999
1st Revision	DEC 09, 1982	DEC 04, 1986	51 FR 43742
		MAY 04, 1989	54 FR 19169

401 KAR 61:010. Existing incinerators.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides standards of performance for existing incinerators.

Section 1. Applicability.
The provisions of this regulation shall apply to each affected facility which means each incinerator with a capacity of 2.5 cubic feet or greater commenced before the classification date defined below.

Section 2. Definitions.
As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Incinerator" means any furnace and appurtenances thereto used in the process of burning waste for the primary purpose of removing the combustible matter from the waste.

(2) "Auxiliary fuel" means a substance burned in an incinerator to supply additional heat to attain temperature sufficiently high to dry and ignite the waste and to maintain ignition of the waste.

(3) "Classification date" means:
  (a) August 17, 1971 for incinerators with a charging rate of more than fifty (50) tons/day.

  (b) April 9, 1972 for incinerators with a charging rate of fifty (50) tons/day or less.

Section 3. Standard for Particulate Matter.

(1) No person shall cause, suffer, allow, or permit the emission produced by the incineration of any substance other than sawdust, wood chips, or bark which:
  (a) Is greater than twenty (20) percent opacity; or

  (b) For those incinerators with charging rate greater than or equal to 500 lb/hr, exceeds 0.20 grains of particulate matter per standard cubic foot of dry flue gas corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

(2) No person shall cause, suffer, allow or permit the emission produced by the incineration

of sawdust, wood chips, or bark which:

(a) is equal to or greater than forty (40) percent opacity (for the purposes of 401 KAR 50:055, Section 2(4) and (5), thirty (30) consecutive minutes shall be allowed for startup and thirty (30) consecutive minutes shall be allowed for shutdown); or

(b) Exceeds 0.21 grains of particulate matter per standard cubic foot of dry flue gas corrected to twelve (12) percent carbon dioxide excluding the contribution of carbon dioxide from auxiliary fuel.

Section 4. Monitoring of Operations.

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

Section 5. Test Methods and Procedures.

(1) Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Section 3 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(a) Kentucky Method 50 for the concentration of particulate matter and the associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis and calculations of excess air using the integrated sample technique.

(2) For Kentucky Method 50 the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the department.

(3) If a wet scrubber is used, the gas analysis sample shall reflect flue gas conditions after the scrubber, allowing for carbon dioxide absorption by sampling the gas on the scrubber inlet and outlet sides according to either the procedure under paragraphs (a) to (c) of this subsection or the procedure under paragraphs (a), (b) and (f) of this subsection as follows:

(a) The outlet sampling site shall be the same as for the particulate matter measurement. The inlet site shall be selected according to Reference Method 1, or as specified by the department.

(b) Randomly select nine (9) sampling points within the cross section at both the inlet and outlet sampling sites. Use the first set of three (3) for the first run, the second set for the second run, and the third set for the third run.

(c) Simultaneously with each particulate matter run, extract and analyze for CO 2 an integrated gas sample according to Reference Method 3, traversing the three (3) sample points and sampling at each point for equal increments of time. Conduct the runs at both inlet and outlet sampling sites.

(d) Measure the volumetric flow rate at the inlet during each particulate matter run according to Reference Method 2, using the full number of traverse points. For the inlet make two (2) full velocity traverses approximately one (1) hour apart during each run and average the results. The outlet volumetric flow rate may be determined from the particulate matter run (Reference Method 5).

(e) Calculate the adjusted CO_2 percentage using the equation in Appendix A to this regulation.

(f) Alternatively, the following procedures may be substituted for the procedures under paragraphs (c), (d) and (e) of this subsection:

1. Simultaneously with each particulate matter run, extract and analyze for carbon dioxide, oxygen and nitrogen an integrated gas sample according to Reference Method 3, traversing the three (3) sample points and sampling for equal increments of time at each point. Conduct the runs at both inlet and outlet sampling sites.

2. After completing the analysis of the gas sample, calculate the percentage of excess air (%EA) for both the inlet and outlet sampling sites using Equation 3-1 in Reference Method 3.

3. Calculate the adjusted CO_2 percentage using the equation in Appendix B to this regulation.

4. Particulate matter emissions expressed in g/dscm, shall be corrected to twelve (12) percent CO_2 by using the equation in Appendix C to this regulation.

[SIP Compilation Table After Appendices]

APPENDIX A TO 401 KAR 61:010

EQUATION FOR ADJUSTED CO_2 PERCENTAGE

$(\%Co_2)\ adj = (\%CO_2)di\ (Qdi/Qdo)$

Where:

$(\%CO_2)$ adj is the adjusted CO_2 percentage which removed the effect of CO_2 adsorption and diffusion of air;

$(\% CO_2)$ di is the percentage of CO_2 measured before the scrubber, dry basis;

Qdi is the volumetric flow rate before the scrubber, average of two runs, dscf/min, using Reference Method 2; and

Qdo is the volumetric flow rate after the scrubber, dscf/min, using Reference Methods 2 and 5.

APPENDIX B TO 401 KAR 61:010
EQUATION FOR ADJUSTED CO_2 PERCENTAGE

$$(\%CO_2 adj = (\%CO_2)di \frac{100 + (\%EA)i}{100 + (\%EA)o}$$

Where:

$(\%CO_2)$adj is the adjusted outlet CO_2 percentage;

$(\%CO_2)$di is the percentage of CO_2 measured before the scrubber, dry basis;

(%EA)i is the percentage of excess air at the inlet; and

(%EA)o is the percentage of excess air at the outlet.

APPENDIX C TO 401 KAR 61:010
EQUATION FOR CORRECTING PARTICULATE MATTER EMISSIONS

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

Where:

C_{12} is the concentration of particulate matter corrected to twelve percent CO_2;

C is the concentration of particulate matter as measured by Reference Method 5;

$\%CO_2$ is the percentage of CO_2 as measured by Reference Method 3, or when applicable, the adjusted outlet CO_2 percentage as determined by Section 5(3)(c).

Effective Date: June 6, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	DEC 24, 1980	45 FR 84999
		DEC 04, 1986	51 FR 43742
		MAY 04, 1989	54 FR 19169

401 KAR 61:015. Existing indirect heat exchangers.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing indirect heat exchangers.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility commenced before the applicable classification date defined below.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010 and 401 KAR 50:025.

(1) "Affected facility" means an indirect heat exchanger having a heat input capacity of more than one (1) million BTU per hour.

(2) "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.

(3) "Classification date" means:

  (a) August 17, 1971, for affected facilities with a capacity of more than 250 million BTU per hour heat input;

  (b) April 9, 1972, for affected facilities with a capacity of 250 million BTU per hour heat input or less.

Section 3. Method for Determining Allowable Emission Rates.

(1) Except as provided in subsection (3) of this section, the total rated heat input capacity of all affected facilities, commenced before the applicable classification date within a source shall be used as specified in Sections 4 and 5 to determine the allowable emission in terms of pounds of effluent per million BTU heat input.

(2) At such time as any affected facility is assigned an allowable emission rate by the department, at no time thereafter shall that rate be changed to inclusion or shutdown of any affected facility at the source.

(3) (a) A source may petition the department to establish an allowable emission rate which may be apportioned without regard to individual affected facility heat input provided that the conditions specified in paragraphs (b),(c),(d), and (e) of this subsection are met. Such allowable emission rate shall be determined according to the following equation: $F = (AB + DE)/C$

Where:

A = the allowable emission rate (in pounds per million BTU input), as determined according to 401 KAR 59:015, Section 3(1);

B = the total rated heat input (in millions of BTU per hour) of all affected facilities commenced on or after the applicable classification date within a source, including those for which an application to construct, modify, or reconstruct has been submitted to the department;

C = the total rated heat input (in millions of BTU per hour) of all affected facilities within a source, including those for which an application to construct, modify, or reconstruct has been submitted to the department;

D = the total emission rate (in pounds per million BTU input) as determined according to subsection (1) of this section;

E = the total rated heat input (in millions of BTU per hour) of all affected facilities commenced before the applicable classification date;

F = the alternate allowable emission rate (in pounds per actual million BTU input).

(b) At no time shall the owner or operator of the source allow the total emissions (in pounds per hour) from all affected facilities within the source divided by the total actual heat input (in millions of BTU per hour) of all affected facilities within the source to exceed the alternate allowable emission rate as determined by paragraph (a) of this subsection.

(c) At no time shall the owner or operator of any source subject to federal new source performance standards allow the emissions from any affected facility commenced on or after the applicable classification date to exceed the allowable emission rate determined by use of that affected facility's rated heat input (instead of the heat input as determined by subsection (1) of this section) as specified in 401 KAR

59:015, Sections 4 and 5.

(d) The owner or operator of the source must demonstrate compliance with this subsection by conducting a performance test according to 401 KAR 50:045 on each affected facility under such conditions as may be specified by the department.

(e) Upon petition, the department will establish an alternate emission rate in accordance with this subsection if the owner or operator demonstrates to the department's satisfaction that the source will maintain compliance with this subsection on a continual basis.

Section 4. Standard for Particulate Matter.

Except as provided for in Section 3(3), no owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility:

(1) Particulate matter in excess of that specified in Appendix A of this regulation;

(2) Emissions which exhibit greater than twenty (20) percent opacity in regions classified as Priority I with respect to particulate matter, except:

(a) That, for cyclone or pulverized fired indirect heat exchangers, a maximum of forty (40) percent opacity shall be permissible for not more than two (2) consecutive minutes in any sixty (60) consecutive minutes;

(b) That, for stoker fired indirect heat exchangers, a maximum of forty (40) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot and, for indirect heat exchangers with stationary grates, a maximum of forty (40) percent opacity shall be permissible during cleaning of the grates for not more than three (3) consecutive minutes in any sixty (60) consecutive minutes for each section of grates that are cleaned;

(c) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendation.

(3) Emissions which exhibit greater than forty (40) percent opacity in regions classified as Priority II or III with respect to particulate matter except:

(a) That, for cyclone or pulverized fired indirect heat exchangers, a maximum of sixty (60) percent opacity shall be permissible for not more than two (2) consecutive minutes in any sixty (60) consecutive minutes;

(b) That, for stoker fired indirect heat exchangers, a maximum of sixty (60) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot and, for indirect heat exchangers with stationary grates, a maximum of sixty (60) consecutive minutes for each section of grates that are cleaned;

(c) For emissions from an indirect heat exchanger during building a new fire for the period required to bring the boiler up to operating conditions provided the method used is that recommended by the manufacturer and the time does not exceed the manufacturer's recommendation.

(4) The emission limitations contained in other subsections of this section shall not apply to any affected facility (with more than 250 million BTU per hour heat input capacity which was in being or under construction before August 17, 1971, or any affected facility with 250 million BTU per hour capacity or less which was in being or under constructed prior to April 9, 1972) if that affected facility was in compliance prior to April 9, 1972, with, or has a valid permit to operate within the provisions of the previous Kentucky Air Pollution Control Commission Regulation No. 7 entitled "Prevention and Control of Emissions of Particulate Matter from Combustion of Fuel to Indirect Heat Exchangers." These affected facilities shall comply with the emission limitations in that regulation except that replacement of the particulate emissions control device associated with the affected facility shall subject it to the standard contained in this section.

Section 5. Standard for Sulfur Dioxide.

(1) Except as provided for in Section 3(3) and subsection (5) of this section, no owner or operator of an affected facility subject to the provisions of this regulation shall cause to be discharged into the atmosphere from that affected facility, any gases which contain sulfur dioxide in excess of that specified in Appendix B of this regulation.

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

$$\text{Allowable Sulfur Dioxide Emission, lb/MM BTU} = \frac{y(a) + z(b)}{y + z}$$

Where:

y = the percent of total heat input derived from liquid or gaseous fuel;

z = the percent of total heat input derived from solid fuel;

a = the allowable sulfur dioxide emission in pounds per million BTU heat input derived from liquid or gaseous fuel; and

b = the allowable sulfur dioxide emissions in pounds per million BTU heat input derived from solid fuel.

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

(4) In counties classified as VA with respect to sulfur dioxide, for sources having a total heat input greater than fifteen hundred million BTU per hour (1500 MMBTU/hr.) as determined by Section 3(1), no owner or operator shall allow the annual average sulfur dioxide emission rate from all existing and new affected facilities combined at the source to exceed 0.60 pounds per million BTU.

(5) In counties classified as IA with respect to sulfur dioxide, at sources having a total rated heat input greater than fifteen hundred million BTU per hour (1500 MM BTU/hr.) as determined by Section 3(1), the department shall allow one (1) affected facility, as specified on the operating permit, to emit sulfur dioxide at a rate not to exceed a twenty-four (24) hour average of 8.0 pounds per million BTU, during those periods of time when the affected facility is being operated for the purpose of generating high sulfur dioxide content flue gases for use in any experimental sulfur dioxide removal system.

Section 6. Monitoring of Operations.

(1) The sulfur content of solid fuels, as burned, shall be determined in accordance with the methods specified by the department.

(2) The sulfur content of liquid fuels, as burned, shall be determined in accordance with the methods specified by the department.

(3) The rate of fuel burned for each fuel shall be measured daily or at shorter intervals and recorded. The heating value and ash content of fuels shall be ascertained at least once per week and recorded. Where the indirect heat exchanger is used to generate electricity, the average electrical output and the minimum and maximum hourly generation rate shall be measured and recorded daily.

(4) The owner or operator of any indirect heat exchanger of more than 250 million BTU per hour heat input subject to the provisions of this regulation and summarized monthly. The record of any such measurement(s) required by this regulation and summarized monthly.

(5) The department may require for any indirect heat exchanger of less than 250 million BTU per hour heat input any or all the fuel monitoring required by this section.

(6) For an indirect heat exchanger that does not use a flue gas desulfurization device, a continuous monitoring system as specified in 401 KAR 61:005 for measuring sulfur dioxide, a continuous monitoring system as specified in 401 KAR 61:005 for measuring sulfur dioxide emissions is not required if the owner or operator monitors such emissions by fuel sampling and analysis pursuant to Section 7(6) of 401 KAR 59:015.

Section 7. Test Methods and Procedures.

(1) Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Sections 4 and 5 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(a) Reference Method 1 for the selection of sampling site and sample traverses;

(b) Reference Method 3 for gas analysis to be used when applying Reference Methods 5, 6, and 7;

(c) Reference Method 5 for the concentration of particulate matter and the associated moisture content;

(d) Reference Method 6 for the concentration of sulfur dioxide; and

(e) Reference Method 7 for the concentration of nitrogen oxides.

(2) For Reference Method 5, Reference Method 1 shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sampling volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the department. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 160 ^{o}C (320 ^{o}F).

(3) For Reference Methods 6 and 7, the sampling site shall be the same as that selected for Reference Method 5. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than one (1) m (3.28 ft). For Reference Method 6, the sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

(4) For Reference Method 6, the minimum sampling time shall be twenty (20) minutes and the minimum sampling volume shall be 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two (2) samples shall constitute one (1) run. Samples shall be taken at approximately thirty (30) minute intervals.

(5) For Reference Method 7, each run shall consist of at least four (4) grab samples taken at approximately fifteen (15) minute intervals. The arithmetic mean of the samples taken

shall constitute the run value.

(6) For each run using the methods specified by subsection (1)(c),(d), and (e) of this section, the emissions expressed in g/million cal (lb/million BTU) shall be determined by the following equation:

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

Where:

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

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

F = a factor as determined in 401 KAR 59:015, Section 7.

$\%O_2$ = oxygen content by volume (expressed as percent), dry basis. Percent oxygen shall be determined by using the integrated or grab sampling and analysis procedures for Reference Method 3 as applicable. The sample shall be obtained as follows:

(a) For determination of sulfur dioxide and nitrogen oxides emissions, the oxygen sample shall be obtained simultaneously at the same point for Reference Method 6 and 7 determinations, respectively. For Reference Method 7, the oxygen sample shall be obtained using the grab sampling and analysis procedures for Reference Method 3.

(b) For determination of particulate emissions, the oxygen sample shall be obtained simultaneously by traversing the duct at the same sampling location used for each run of Reference Method 5 under subsection (2) of this section. Reference Method 1 shall be used for selection of the number of traverse points except that no more than twelve (12) sample points required.

(7) When combinations of fossil fuels are fired, the heat input, expressed in cal/hr (BTU/hr), shall be determined during each testing period by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned. Gross calorific value shall be determined in accordance with ASTM methods D2015- 66(72) (solid fuels), D240-64(73) (liquid fuels), or D1826-64(70) (gaseous fuels), as applicable (ASTM designations filed by reference in 401 KAR 50:015.) The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the steam generation system.

Section 8. Compliance Timetable.

(1) Affected facilities located in areas designated as attainment for sulfur dioxide and/or particulate matter shall be in compliance on the effective date of this regulation.

(2) (a) In Class IA counties designated as non-attainment for sulfur dioxide, the owner or operator of any affected facility in any source whose total rated capacity is sixteen thousand million BTU per hour (16,000 MM BTU/hr) or more shall be required to complete the following:

1. Submit a final control plan for achieving compliance with this regulation no later than May 1, 1978;

2. Award contracts for complying coal by January 1, 1979;

3. Initiate use of complying coal on or before December 1, 1979;

4. Demonstrate compliance by performance tests on or before October 1, 1981.

(b) In Class IVA counties designated as non-attainment for sulfur dioxide, the owner or operator of any affected facility in any source with a total rated capacity of greater than fifteen hundred million BTU per hour (1500 MM BTU/hr) but less than twenty-one thousand million BTU per hour (21,000 MM BTU/hr) shall be required to complete the following:

1. Submit a final control plan for achieving compliance with this regulation no later than May 1, 1979;

2. Award contracts for complying coal by August 1, 1979;

3. Initiate use of such complying coal on or before January 1, 1980.

(c) In Class IVA counties designated as non-attainment for sulfur dioxide, the owner or operator of any affected facility in any source with a total rated capacity of greater than twenty-one thousand million BTU per hour (21,000 MM BTU/hr) shall be required to complete the following:

1. Submit a control plan for flue gas desulfurization and initiate construction of a coal washing plant on or before June 1, 1978;

2. Issue invitations for bids for construction and installation of flue gas desulfurization equipment on or before October 1, 1978;

3. Award contract for construction and installation of flue gas desulfurization equipment on or before March 1, 1979;

4. Initiate construction of flue gas desulfurization equipment on or before December 1, 1979.

5. Complete construction of coal washing plant on or before December 1, 1980.

6. Complete construction of flue gas desulfurization equipment on or before June 1, 1982.

7. Demonstrate compliance by performance tests on or before September 1, 1982.

(d) The owner or operator of any affected facility located in any area designated non-attainment for sulfur dioxide and/or particulate matter, except as provided for in paragraphs (a), (b) and (c) of this subsection, shall demonstrate compliance with this regulation as expeditiously as practicable but in no case later than December 31, 1982.

Effective Date: June 1, 1983

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		OCT 31, 1980	45 FR 72153
		DEC 24, 1980	45 FR 84999
		MAR 22, 1983	48 FR 11945
		MAR 23, 1984	49 FR 11090
1st Revision	MAY 01, 1984	DEC 04, 1986	51 FR 43742
2nd Revision	JUN 15, 1983	APR 02, 1996	61 FR 14489

APPENDIX A TO 40 KAR 61:015

ALLOWABLE PARTICULATE EMISISON RATES

For sources having a Total Heat Input Capacity (as determined by Section 3(1) of this regulation) of:	The standard (in pounds per million BTU actual heat input is (based upon the Priority classification with respect to particulates of the Region in which the source is located):		
(MM BTU/hr)	Priority I	Priority II	Priority III
10 or less	0.56	0.75	0.80
50	0.38	0.52	0.57
100	0.33	0.44	0.49
250	0.26	0.35	0.40
500	0.22	0.30	0.34
1000	0.19	0.26	0.30
2500	0.15	0.21	0.24
5000	0.13	0.18	0.21
7500	0.12	0.16	0.19
10000 or more	0.11	0.15	0.18

Interpolation of allowable emissions for intermediate heat input values not specified above may be accomplished by use of the equations shown below for the appropriate heat input range specified. In all equations, X = millions of BTU per hour heat input as determined by Section 3(1) of this regulation, and Y = allowable particulate emissions in pounds per million BTU actual heat input.

Region Classification with respect to Particulate Matter	Range (MM BTU/Hr)	Allowable (Pounds/MM BTU)
Priority I	10 to 10,000	$Y = 0.9634\ x\ -0.2356$
Priority II	10 to 10,000	$Y = 1.2825\ x\ -0.2330$
Priority III	10 to 10,000	$Y = 1.3152\ x\ -0.2159$

401 KAR 61:020. Existing process operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS 224.320, 224.330, 224.340
Pursuant to: KRS 224.033
Necessity and Function: KRS 224.033 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing process operations which are not subject to another particulate emission standard within this chapter.

Section 1. Applicability.

(1) The provisions of this regulation shall apply to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in this chapter, commenced before the classification date defined below.

(2) The provisions of this regulation which apply to affected facilities or sources located in non-attainment areas shall continue to apply to those affected facilities or sources if the area is redesignated to attainment or unclassified status in 401 KAR 51:010 or 40 CFR 81.318, unless a State Implementation Plan which provides for other controls is approved by the U.S. EPA.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "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) "Process weight" means the total weight of all materials introduced into any affected facility which may cause any emission of particulate matter, but does not include liquid and gaseous fuels charged, combustion air, or uncombined water.

(3) "Classification date" means July 2, 1975.

(4) "Process weight rate" means a rate established as follows:
   (a) For continuous or long-run steady state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof;

(b) 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 such a period; and

(c) Where the nature of any process operation or the design of any equipment is such as to permit more than one (1) interpretation of this definition, the interpretation which results in the minimum value for allowable emission shall apply.

(5) "Affected facility" as related to process operations means the last operation preceding the emission of air contaminants which results:

(a) In the separation of the air contaminant from the process materials; or

(b) In the conversion of the process materials into air contaminants, but does not include an air pollution abatement operation.

(6) "Continuous operation" means a visible emission of particulate matter which persists for more than three (3) minutes, the opacity of which is measured in accordance with Reference Method 9, filed by reference in 401 KAR 50:015.

(7) "Intermittent emission" means a visible emission of particulate matter which persists for three (3) minutes or less, the opacity of which is measured in accordance with Kentucky Method 150(F-1), filed by reference in 401 KAR 50:015.

Section 3. Standard For Particulate Matter.

(1) Opacity standard.

(a) 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 which is equal to or greater than forty (40) percent opacity.

(b) No person shall cause, suffer, allow or permit any continuous or intermittent fugitive emission into the open air from any affected facility or source located in any area designated non-attainment for total suspended particulates under 401 KAR 51:010 which is equal to or greater than twenty (20) percent opacity, or which remains visible beyond the lot line of the property on which the emission originates.

(c) Variation with the standards specified in paragraph (d) of this subsection, when supported by adequate technical information, will be considered by the cabinet on a case-by-case basis to allow for technological or economical circumstances which are unique to a source, provided that such a variance has been approved by the U.S. EPA.

(2) Mass emission standard.

(a) 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 which is in excess of the quantity specified in Appendix A of this regulation.

(b) An affected facility may elect to substitute the following standards in lieu of the value given in Appendix A:

1. A maximum exit particulate emission concentration of 0.02 grains per standard cubic foot;

2. Air pollution control equipment of at least ninety-seven (97) percent actual efficiency; and

3. Addition of dilution air shall not constitute compliance.

Section 4. Test Methods and Procedures.
Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Section 3 of this regulation shall be conducted according to the following methods (Kentucky Methods 50 and 150 (F-1) and other methods are filed
by reference in 401 KAR 50:015:

(1) Kentucky Method 50 for sources located in or having a significant impact upon non-attainment areas for total suspended particulates as designated in 401 KAR 51:010, and Reference Method 5 for sources located in all other areas, for the emission rates of particulate matter and the associated moisture content.

(2) Reference Method 1 for sample and velocity traverses.

(3) Reference Method 2 for velocity and volumetric flow rates.

(4) Reference Method 3 for gas analysis.

(5) Reference Method 9 for opacity of continuous emissions.

(6) Kentucky Method 150 (F-1) for opacity of intermittent emissions.

(7) For Kentucky Method 50 and Reference Method 5, Reference Method l shall be used to select the sampling site and the number of traverse sampling points. The sampling time for each run shall be at least sixty (60) minutes and the minimum sampling volume shall be 0.85 dscm (thirty (30) dscf) except that smaller sampling time or volumes, when necessitated by process variables or other factors, may be approved by the cabinet.

[SIP Compilation Table After Appendix]

Appendix A to 401 KAR 61:020

Allowable Rate of Particulate Emission Based on Process Weight Rate

Process Weight Lb/Hr.	Rate Tons/Hr.	Maximum Allowable Emission Rate Lb/Hr.
1,000 or less	0.50 or less	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 60,000 lb/hr. shall be accomplished by use of the equation E = 4.10 O.67 and interpolation and extrapolation of the data for process weight rates in excess of 60,000 lb/hr. shall be accomplished by use of the equation E = 55.0P 0.11 -40, where E = rate of emission in lb/hr. and P = process weight rate in tons/hr.

Effective Date: April 14, 1988

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 04, 1980	45 FR 6092
		DEC 24, 1980	45 FR 84999
1st Revision	DEC 09, 1982	DEC 04, 1986	51 FR 43472
2nd Revision	SEP 19, 1986	MAY O4, 1989	54 FR 19169
3rd Revision	JUL 07, 1988	FEB 07, 1990	55 FR 4169

401 KAR 61:025. Existing kraft (sulfate) pulp mills.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: 224.10-100
Necessity and Function: KRS 224.10-100 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing kraft (sulfate) pulp mills.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility which:

(1) Is associated with a kraft (sulfate) pulp mill;

(2) Is not subject to another standard of performance within this chapter with respect to particulates or total reduced sulfur;

(3) Commenced before the classification date defined below.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given to them in 401 KAR 50:010.

(1) "Total reduced sulfur (TRS)" means all reduced sulfur compounds including but not limited to hydrogen sulfide, methyl mercaptan, dimethyl sulfide and dimethyl disulfide expressed in terms of hydrogen sulfide.

(2) "Classification date" means April 9, 1972.

Section 3. Standard for Particulate Matter. No person shall cause, suffer, allow or permit particulate emissions from the following affected facilities in excess of:

(1) Recovery furnace: 3.5 pounds per ton of equivalent unbleached air dried pulp produced;

(2) Lime kilns: 1.0 pounds per ton of equivalent unbleached air dried pulp produced;

(3) Dissolving smelt tanks: 0.5 pounds per ton of equivalent unbleached air dried pulp produced;

(4) An emission equal to or greater than forty (40) percent opacity.

Section 4. Standard for Total Reduced Sulfur (TRS).

(1) No person shall cause, suffer, allow or permit total reduced sulfur emissions from the recovery furnace of any kraft (sulfate) pulp mill in excess of an exit stack gas concentration of fifteen (15) parts per million by volume expressed as an arithmetic average over any consecutive twenty-four (24) hour period.

(2) No person shall cause, suffer, allow or permit total reduced sulfur emissions from the recovery furnace of any kraft pulp mill in excess of an exit stack gas concentration of forty (40) parts per million by volume for more than sixty (60) total minutes in any twenty-four (24) hour period.

(3) No person shall cause, suffer, allow or permit the emissions of various noncondensable gas streams from digester relief, blow tank relief, evaporator hot wells, or multiple effect evaporators containing total reduced sulfur in a kraft pulp mill unless treated by thermal oxidation or an equivalent method with ninety- eight (98) percent efficiency.

(4) Control of other points of emission of total reduced sulfur, shall be considered on an individual basis as determined by the department.

Section 5. Test Methods and Procedures.

Except as provided in 401 KAR 50:045, performance tests used to demonstrate compliance with Sections 3 and 4 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(1) Reference Method 5 for the emission rates of particulate matter and the associated moisture content.

(2) Reference Method 1 for sample and velocity traverses.

(3) Reference Method 2 for velocity and volumetric flow.

(4) Reference Method 3 for gas analysis.

(5) Reference Method 9 for visible emissions.

(6) Reference Method 16 for the concentration of TRS. All concentrations of TRS from the lime kiln and recovery furnace that are measured as required by this subsection shall be corrected to ten (10) percent by volume oxygen and eight (8) percent by volume oxygen, respectively, when the oxygen concentrations exceed these values.

(7) Reference Method 17 (in-stack filtration) may be used as an alternative method for Reference Method 5 provided that a constant value of 0.009 g/dscm (0.004 gr/dscf) is

added to the results of Reference Method 1 and the stack temperature is no greater than 205 °C (400 °F).

(8) For particulate tests, the sampling time for each run shall be at least sixty (60) minutes and the sampling rate shall be at least 0.85 dscm/hr (0.53 dscf/min) except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the department. Water shall be used as the clean up solvent instead of acetone in the sample recovery procedure outlined in Reference Method 5 or 17.

Effective Date: June 6, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	DEC 24, 1980	45 FR 84999
1st Revision	DEC 15, 1981	MAY 26, 1982	47 FR 22955

401 KAR 61:030. Existing sulfuric acid plants.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: 224.10-100
Necessity and Function: KRS 224.10-100 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides standards of performance for existing sulfuric acid plants.

Section 1. Applicability.

The provisions of this regulation shall apply to affected facilities associated with sulfuric acid plants commenced before the classification date defined below.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010. "Classification date" means August 17, 1971.

Section 3. Standard for Sulfuric Acid Mist.

No person shall cause, suffer, allow or permit the following emissions into the open air:

(1) Sulfuric acid mist in the effluent in excess of 0.50 pounds per ton of acid produced, the production being expressed as 100 percent sulfuric acid.

(2) A visible emission which is greater than twenty (20) percent opacity.

Section 4. Standard for Sulfur Dioxide.

No person shall cause, suffer, allow or permit the following emission into the open air: Sulfur dioxide in the effluent in excess of 27.6 pounds per ton of acid produced, the production being expressed as 100 percent sulfuric acid.

Section 5. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Sections 3 and 4:
    (a) Reference Method 8 for the concentration of sulfur dioxide and acid mist;

    (b) Reference Method 1 for sample and velocity traverses;

    (c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) The moisture content can be considered to be zero. For Reference Method 8 the sampling time for each run shall be at least sixty (60) minutes and the minimum sample volume shall be 1.15 dscm (40.6 dscf) except that smaller sampling times or sample volumes, when necessitated by process variables or other factors, may be approved by the department.

(3) Acid production rate, expressed in metric tons per hour of 100 percent sulfuric acid shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(4) Acid mist and sulfur dioxide emissions, expressed in g/metric ton of 100 percent sulfuric acid shall be determined by dividing the emission rate in g/hr by the acid production rate. The emission rate shall be determined by the equation g/hr (QS)(c), where QS = volumetric flow rate of the effluent in dscm/hr as determined in accordance with subsection (1)(c) of this section, and c = acid mist and sulfur dioxide concentrations in g/dscm as determined in accordance with subsection (1)(a) of this section.

Effective Date: June 6, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	OCT 31, 1980 45	FR 72153
	DEC 15, 1981	MAY 26, 1982	47 FR 22955
		MAR 22, 1983	48 FR 11945

401 KAR 61:035. Existing process gas streams.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: 224.10-100
Necessity and Function: KRS 224.10-100 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing process gas streams.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility which means any process gas stream which:

(1) Is not elsewhere subject to a standard of performance within this chapter with respect to hydrogen sulfide, sulfur dioxide, or carbon monoxide;

(2) Commenced before the classification date defined below;

(3) Emits hydrogen sulfide or sulfur dioxide and is located in a county classified as Class I or VA with respect to sulfur dioxide;

(4) Emits carbon monoxide generated during the operation of any gray iron cupola, blast furnace, basic oxygen steel furnace, coal conversion plants, catalyst regeneration of a petroleum cracking system, or other petroleum process and is located in an area classified non-attainment with respect to carbon monoxide in 401 KAR 51:010.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010 or 401 KAR 50:025.

(1) "Classification date" means the effective date of this regulation.

(2) "Process gas stream" means any gas stream emitted from any process, including, but not limited to, petroleum refineries, by-product coke plants, gray iron cupolas, blast furnaces, coal conversion plants and basic oxygen steel furnaces, except process upset gas as defined in this section and the combustion products of purchased coke oven gas.

(3) "Process upset gas" means any gas generated by a process unit as a result of startup, shutdown, upset, or malfunction.

(4) "Process unit" means any segment of the plant in which a specific processing operation is conducted.

Section 3. Standard for Hydrogen Sulfide.

No person shall cause, suffer, allow or permit the emission of combustion of hydrogen sulfide in a process gas stream to exceed ten (10) grains per 100 dscf (165 ppm by volume) at zero percent oxygen.

Section 4. Standard for Sulfur Dioxide.

No person shall cause, suffer, allow or permit the emission of sulfur dioxide in a process gas stream to exceed 239 grains per 100 dscf (2,000 ppm by volume) at zero percent oxygen.

Section 5. Standard for Carbon Monoxide.

No person shall cause, suffer, allow, or permit the emission of carbon monoxide in a process gas stream or a waste gas stream, unless the gases are burned at 1,300 oF 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 401 KAR 50:045, performance tests used to demonstrate compliance with Sections 3 and 4 shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(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 (10) minutes and the minimum sample volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two (2) samples shall constitute one (1) run. Samples shall be taken at approximately one (1) hour intervals.

(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 SO_2 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 (1) m (thirty-nine (39) inches) if the cross- sectional area is five (5) square meters or more and the centroid is more than one (1) 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 (10) minutes and the minimum sampling volume 0.01 dscm (0.3 dscf) for each sample. Three (3) runs will constitute compliance test. Samples shall be taken at approximately one (1) hour intervals.

Section 7. Compliance Timetable.

Those affected facilities subject to the standards in this regulations shall achieve compliance with those standards within eighteen (18) months of the effective date of this regulation.

(1) Hydrogen sulfide and sulfur dioxide. The provisions of Sections 3 and 4 are applicable upon the effective date of this regulation with respect to affected facilities located in counties classified as Class I with respect to sulfur dioxide. The owner or operator of an affected facility located in a Class VA county with respect to sulfur dioxide shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with Sections 3 and 4 no later than September 1, 1979.

(b) Award the control system contract no later than October 1, 1979.

(c) Initiate on-site construction or installation of emission control equipment no later than September 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than December 1, 1980.

(2) Carbon monoxide. The owner or operator of an affected facility shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with Section 5 no later than September 1, 1979.

(b) Award the control system contract no later than October 1, 1979.

(c) Initiate on-site construction or installation of emission control equipment no later than July 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than October 1, 1980.

(e) Final compliance shall be achieved no later than December 1, 1980.

Effective Date: April 07, 1982

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		OCT 31, 1980	45 FR 72153
		AUG 07, 1981	47 FR 22955
1st Revision	SEP 24, 1982	MAR 22, 1983	48 FR 11945

401 KAR 61:040. Existing ethylene producing plants.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides standards of performance for existing ethylene producing plants.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility which means each waste gas stream of ethylene producing plants commenced before the classification date defined below, and which are located in a region classified as Priority I with respect to photochemical oxidants (and hydrocarbons).

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010. "Classification date" means April 9,1972.

Section 3. Standard for Hydrocarbons.

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

Effective Date: June 6, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092

401 KAR 61:045. Existing oil-effluent water separators.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement,and control of air pollution. This regulation provides for the control of emissions from existing oil-effluent water separators.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010; or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

(3) Oil-effluent water separators used exclusively in conjunction with the production of crude oil shall be exempted from this regulation.

Section 2. Definitions.

As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means any oil-effluent water separator which recovers 200 gallons a day or more of any petroleum products from any equipment which processes, refines, stores, or handles hydrocarbons with a Reid vapor pressure of 0.5 psia or greater.

(2) "Oil-effluent water separator" means any tank, box, sump, or other container in which any petroleum 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.

(3) "Floating roof" means a 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 liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and vessel wall.

(4) "Classification date" means the effective date of this regulation.

(5) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from a vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

Section 3. Standard for Hydrocarbons.

Any oil-effluent water separator shall be a vessel equipped with a floating roof, or a vessel equipped with a vapor recovery system, or their equivalent. All gauging and sampling devices shall be gas tight except when gauging and sampling is taking place.

Section 4. Compliance Timetable.

(1) An affected facility located in a Priority I Region for hydrocarbons shall be in compliance on or before the effective date of this regulation.

(2) The owner or operator of an affected facility located in a Priority III Region for hydrocarbons shall be required to complete the following:

  (a) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

  (b) Award the control device contract no later than December 1, 1979.

  (c) Initiate on-site construction or installation of emissions control equipment no later than March 1, 1980.

  (d) On-site construction or installation of emission control equipment shall be completed no later than October 1, 1980.

  (e) Final compliance shall be achieved no later than January 1, 1981.

Effective Date: June 29, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188

401 KAR 61:050. Existing storage vessels for petroleum liquids.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224.20-100, 224.20-110, 224.20-120
Pursuant to: KRS 13.082, 224.10-100
Necessity and Function: KRS 224.10-100 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing storage vessels for petroleum liquids.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means a storage vessel for petroleum liquids which has a storage capacity of greater than 2,195 1 (580 gallons).

(2) "Storage vessel" means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

- (a) Pressure vessels are designed to operate in excess of fifteen (15) pounds per square inch gauge without emissions to the atmosphere except under emergency conditions;

- (b) Subsurface caverns or porous rock reservoirs; or

- (c) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(3) "Petroleum liquids" means crude petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Number 2 through Number 6 fuel oils, gas turbine fuel oil Number 2-GT through 4-GT, or diesel fuel oils Numbers 2-D and 4-D as specified by the department.

(4) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives.

(5) "Crude petroleum" means a naturally occurring mixture which consists of hydrocarbons or sulfur, nitrogen or oxygen derivatives of hydrocarbons and which is at standard conditions.

(6) "Hydrocarbon" means any organic compound consisting predominantly of carbon and hydrogen.

(7) "Condensate" means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature or pressure and remains liquid at standard conditions.

(8) "True vapor pressure" means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods specified by the department.

(9) "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 petroleum liquid being contained and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(10) "Vapor recovery system" means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing these hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(11) "Reid vapor pressure" is the absolute vapor pressure of volatile crude oil and volatile petroleum liquids, except liquefied petroleum gases, as determined by methods specified by the department.

(12) "Submerged fill pipe" means any fill pipe the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the tank; or when applied 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 (2) times the fill pipe diameter above the bottom of the tank.

(13) "Classification date" means April 9, 1972.

(14) "Custody transfer" means the transfer of produced crude oil and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(15) "External floating deck" means a storage vessel cover in an open tank top consisting of a double deck or pontoon single deck which rests upon and is supported by the petroleum liquid being contained and is equipped with closure seals to close the space between the roof edge and tank shell.

(16) "Internal floating roof" means a cover or roof in a fixed roof tank which rests upon or is floated upon the petroleum liquid being contained, and is equipped with closure seals to close the space between the roof edge and tank shell.

(17) "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.

(18) "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 vapor seal, the tank shell, the liquid surface, and the floating roof.

Section 2. Applicability
(1) This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.
(2) This regulation shall not apply to storage vessels located on a farm and used exclusively for storing petroleum liquids used by the farm.

Section 3. Standard for VOCs.
The owner or operator of any storage vessel to which this regulation applies shall store petroleum liquids as follows:

(1) If the storage vessel has a storage capacity greater than 151,400 (40,000 gallons) and if the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than seventy- eight (78) mm Hg (1.5 psia) but not greater than 574 mm Hg (11.1 psia) the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the storage vessel has a storage capacity greater than 151,400 (40,000 gallons) and if the true vapor pressure of the petroleum liquid as stored is greater than 574 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

(3) If the storage vessel has a storage capacity greater than 2,195 1 (580 gallons), and if the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 10.3 kilopascal (1.5 psia), as a minimum it shall be equipped with a vapor recovery system or its equivalent.

(4) If the storage vessel is an external floating roof tank with a storage capacity greater than 151,400 1 (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:
    (a) The tank is 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 (1) of the following:
        1. A metallic-type shoe seal, a liquid-mounted foal seal, or a liquid-mounted liquid-filled type seal; or

        2. Any other closure device which can be demonstrated equivalent to the

above primary seals.

(b) The tank is a riveted tank and the true vapor pressure of the contained liquid is 10.3 kilopascal (1.5 psia) or greater.

(c) 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 this primary seal closure device can be demonstrated equivalent to the primary seals described in paragraph (a) of this subsection, then the secondary seal is required if the vapor pressure is 27.6 kilopascal (4.0 psia) or greater.

Section 4. Operating Requirements.

(1) There shall be no visible holes, tears, or other openings in the seal or any seal fabric.

(2) All openings except stub drains, shall be equipped with covers, lids, or seals so that:

(a) The cover, lid, or seal is in the closed position at all times except during actual use;

(b) Automatic bleeder vents are closed at all times, unless the roof is floated off or landed on the roof leg supports; and

(c) 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.

(3) External floating roof tanks subject to this regulation shall meet the additional requirements:

(a) The seals shall be intact and uniformly in place around the circumference of the floating roof between the floating roof and the tank wall.

(b) The gap area of gaps exceeding 0.32 cm (one-eight (1/8 in) in width between the secondary seal installed pursuant to Section 3(4) and the tank wall shall not exceed 6.5 sq. cm./0.3 of tank diameter (1.0 sq. in/ft).

(c) All openings in the external floating roof, except for automatic bleeder vents, rim space vents, and leg sleeves, shall provide a projection below the liquid surface.

(d) Any emergency roof drain shall be provided with a slotted membrane fabric cover or equivalent that covers at least ninety (90) percent of the area of the opening.

Section 5. Monitoring of Operations.

(1) If 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 1 (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 (2) years after the date on which the record was made.

(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 department if there is a question on the values reported.

Section 6. Compliance Timetable.

(1) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than three (3) months after the date the affected facilit becomes subject to this regulation.

(b) The control device contract shall be awarded no later than five (5) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emissions control equipment shall be initiated no later than seven (7) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment shall be completed no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than twelve (12) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 7. Exemptions.

Any of the following types of external floating roof tanks storing liquid petroleum shall be exempt from Section 3(4) as follows:

(1) External floating roof tanks having capabilities less than 1,600,000 1 (422,000 gallon) used to store produced crude oil and condensate prior to custody transfer.

(2) 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 seal).

(3) External floating roof tanks storing waxy, heavy pour crudes.

(4) External floating roof tanks with a closure or other device which can be demonstrated to the satisfaction of the department to be equivalent to the seals required in Section 3(4)(a).

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JUN 29, 1979	45 FR 6092
1st Revision	FEB 05, 1981	NOV 24, 1981	46 FR 57486
		MAR 30, 1983	48 FR 13168
2nd Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32345

401 KAR 61:055. Existing loading facilities at bulk gasoline terminals.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing loading facilities at bulk gasoline terminals.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated non-attainment for ozone under 401 KAR 51:010; or

(2) In any county which is designated non-attainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means the facilities at a bulk gasoline terminal for loading gasoline into tank trucks, trailers, railroad cars, or other non-marine mobile vessels.

(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, and where outgoing gasoline loads are transferred by tank trucks, trailers, railroad cars or other non-marine mobile vessels.

(3) "Gasoline" means any petroleum distillate used as a fuel for internal combustion engines and having a Reid vapor pressure of 4.0 pounds per square inch or greater.

(4) "Classification date" means June 29, 1979.

(5) "Kentucky pressure-vacuum test sticker" means a sticker which is issued each year by the department, in accordance with the provisions of 401 KAR 63:031, to the owner or operator of a gasoline tank truck or which may be issued by a local air pollution control district within the Commonwealth of Kentucky with an equivalent regulation approved by the department and the U.S. EPA.

Section 3. Standard for Volatile Organic Compounds.

(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.

(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) No owner or operator shall permit the volatile organic compounds emissions from the vapor control device to exceed eighty (80) milligrams per liter of gasoline loaded.

(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.

(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.

(6) No owner or operator of a bulk gasoline terminal in an urban county subject to this regulation shall allow loading on or after December 1, 1982, unless the following provisions are met:

(a) The vapor control system and associated equipment are designed and operated to prevent gauge pressure in the tank truck from exceeding 450 mm water (eighteen (18) in. water) and prevent vacuum from exceeding 150 mm water (six (6) in. water);

(b) A pressure tap or any equivalent system as approved by the department is installed on the vapor balance system so that a liquid manometer, supplied by the department, can be connected by an inspector to the tap in order to determine compliance with paragraph (a) of this subsection. The pressure tap shall be installed by the owner or operator as close as possible to the connection with the delivery tank, and shall consist of a one- quarter (1/4) inch tubing connector which is compatible with the use of three-sixteenth (3/16) inch inside diameter plastic tubing;

(c) During loading operations there is no reading greater than or equal to 100 percent of the lower explosive limit (LEL, measured as propane) at a distance of 2.5 centimeters around the perimeter of a potential leak source as detected by a combustible gas detector using the test procedure referenced in Section 5; and;

(d) The tank truck has a valid Kentucky pressure-vacuum test sticker as required by 401 KAR 63:031 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 department.

Section 5. Compliance.

(1) The design of the vapor control system is subject to the approval of the department.

(2) The test procedure as defined in Appendix A to "Control of Hydrocarbons from Tank Truck Gasoline Loading Terminals", EPA- 450/2-77-026,"(OAQPS No. 1.2-082, U.S. EPA, Office of Air Quality Planning and Standards), filed by reference in 401 KAR 50:015, shall be used to determine compliance with the standard in Section 3. Each bulk gasoline terminal subject to this regulation shall uses leaktight tank trucks for the compliance test. For purposes of testing using Appendix A to "Control of hydrocarbons from Tank Truck Gasoline Loading Terminals (EPA- 450/2-77-026), a leaktight tank truck is one (1) that during loading has no reading greater than or equal to 100 percent of the lower explosive limit (LEL, measured as propane) at a distance of 2.5 centimeters around the perimeter of a potential leak source associated with the gasoline tank truck and its vapor collection system as detected by a combustible gas detector using the test procedure referenced in subsection (3) of this section.

(3) The test procedure as defined in Appendix B to "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems" (OAQPS 1.2-119, U.S. EPA, Office of Air Quality Planning and Standards), filed by reference in 401 KAR 50:015, or an equivalent procedure approved by the department, shall be used by the department to determine compliance with the standard prescribed in Section 3(6)(c) during inspections conducted pursuant to KRS 224.033(10) and with the requirements of subsection (2) of this section.

Section 6. Compliance Timetable.
The owner or operator of an affected facility shall be required to complete the following:

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control system contract no later than January 1, 1980.

(3) Initiate on-site construction or installation of emission control equipment shall be completed no later than July 1, 1980.

(4) On-site construction or installation of emission control equipment shall be completed no

later than March 1, 1981.

(5) Final compliance shall be achieved no later than December 31, 1982.

Effective Date: August 24, 1982

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	SEP 24, 1982	MAR 30, 1983	48 FR 13168

401 KAR 61:056. Existing bulk gasoline plants.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Natural Resources and Environmental Protection Cabinet to prescribe administrative regulations for the prevention, abatement, and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This administrative regulation provides for the control of volatile organic compounds emissions from existing bulk gasoline plants.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a bulk gasoline plant.

(2) "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.

(3) "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.

(4) "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.

(5) "Vapor balance system" means a combination of pipes or hoses which 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.

(6) "Submerged fill tube system" means a fill tube the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the transport vehicle tank.

(7) "Classification date" means June 29, 1979.

(8) "Transport vehicle" means tank trucks, trailers, railroad or tank cars.

Section 2. Applicability.

This administrative regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this administrative regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3. Standard for VOCs.

(1) The owner or operator of an affected facility shall install, maintain, and operate:

- (a) Stationary storage tank control devices according to 401 KAR 59:050 or 401 KAR 61:050.

- (b) A vapor balance system or an equivalent control approved by the cabinet and the U.S. EPA for:
  - 1. Filling of stationary storage tanks from transport vehicle tanks; and
  - 2. Filling of transport vehicle tanks from stationary storage tanks.

- (c) For loading into transport vehicle tanks either:
  - 1. A submerged fill tube system; or

  - 2. A bottom-fill system.

(2) The vapor balance system shall be equipped with fittings which are vapor tight and automatically close upon disconnection so as to prevent the release of organic material.

(3) The cross-sectional area of the vapor return hose shall be at least fifty (50) percent of the cross-sectional area of the liquid fill line and free of flow restrictions.

(4) Transport vehicle tank hatches shall be closed at all times during loading operations.

(5) 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.

(6) 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.

(7) The owner or operator shall not load gasoline into any transport vehicle or receive gasoline from any transport vehicle which does not have proper fittings for connection of the vapor balance system, nor shall the owner or operator load or receive gasoline unless the vapor balance system is properly connected and in good working order. Except as provided in subsection (9) of this section 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.

(8) The following shall apply to the loading of a transport vehicle tank by means of a

submerged fill tube system:

(a) When inserted into the tank, the submerged fill tube system must form a vapor tight seal with the tank.

(b) Tank hatches are to be opened only for the minimum time necessary to insert or remove the submerged fill tube system.

(9) 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.

(10) No owner or operator of a bulk gasoline plant in an urban county subject to this regulation shall allow loading or unloading of a tank truck unless the following provisions are met:

(a) The tank truck has a valid Kentucky pressure-vacuum test sticker as required by 401 KAR 63:031 attached and visible displayed;

(b) The vapor balance system and associated equipment are designed and operated to prevent gauge pressure in the tank truck from exceeding 450 mm water (eighteen (18) in. water) and prevent vacuum from exceeding 150 mm water (six (6) in. water);

(c) A pressure tap or any equivalent system as approved by the department is installed on the vapor balance system so that a liquid manometer, supplied by the department, can be connected by an inspector to the tap in order to determine compliance with paragraph (b) of this subsection. The pressure tap shall be installed by the owner or operator as close as possible to the connection with the delivery tank, and shall consist of a one- quarter (1/4) inch tubing connector which is compatible with the use of three-sixteenth (3/16) inch inside diameter plastic tubing;

(d) During loading operations there is no reading greater than or equal to 100 percent of the lower explosive limit (LEL, measured as propane) at a distance of 2.5 centimeters around the perimeter of a potential leak source as detected by a combustible gas detector using the test procedure referenced in Section 5.

Section 4. The owner or operator may elect to use an alternate control system if it can be demonstrated to the department's satisfaction that the alternative system will achieve equivalent control efficiency.

Section 5. Compliance. The test procedure as defined in Appendix B to "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems" (OAQPS 1.2-119, U.S. EPA, Office of Air Quality Planning and Standards), which has been incorporated by reference in 401 KAR 50:015, or an equivalent procedure approved by the department, shall be used by the department to determine compliance with the standard prescribed in Section

3(10)(d) of this administrative regulation during inspections conducted pursuant to KRS 224.10-100(10).

Section 6. Compliance Table. (1) Affected facilities which were subject to this administrative regulation as in effect on August 24, 1982, shall have achieved final compliance.

(2) The owner or operator of an affected facility that becomes subject to this administrative regulation on or after the effective date of this administrative regulation shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this administrative regulation no later than eight (8) months after the affected facility becomes subject to this administrative regulation.

(b) Award the control system contract no later than nine (9) months after the date the affected facility becomes subject to this administrative regulation.

(c) Initiate on-site construction or installation of emission control equipment no later than ten (10) months after the date the affected facility becomes subject to this administrative regulation.

(d) On-site construction or installation of emission control equipment shall be completed no later than eleven (11) months after the date the affected facility becomes subject to this administrative regulation.

(e) Final compliance shall be achieved no later than twelve (12) months after the date affected facility becomes subject to this administrative regulation.

Section 7. Exemptions. An affected facility shall be exempt from this administrative regulation if the throughput is less than 4,000 gal/day. A rolling thirty (30) day average shall be allowed for determining applicability.

Effective Date: September 28, 1994

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	SEP 24, 1982	MAR 30, 1983	48 FR 13168
2nd Revision	DEC 29, 1994	JUN 28, 1996	61 FR 33674

401 KAR 61:060. Existing sources using organic solvents.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing sources using any organic solvents.

Section 1. Applicability.

(1) The provisions of this regulation shall apply to any affected facility:
  (a) Located in a Priority I Region for photochemical oxidants which commenced before the classification date defined below;

  (b) Located in a Priority III Region for photochemical oxidants which commenced before the classification date defined below but on or after April 9, 1972.

(2) The provisions of this regulation shall not apply to:
  (a) The manufacture of organic solvents or the transport, loading, or storage of organic solvents or materials containing organic solvents;

  (b) The spraying or other employment of insecticides, pesticides, or herbicides;

  (c) The employment, application, evaporation or drying of saturated halogenated hydrocarbons or perchlorethylene;

  (d) The use of any material in affected facility described in subsection (1) of this section if the volatile content consists of non-photochemically reactive solvent comprising not more than thirty (30) percent by volume of the material as applied;

  (e) The use of any material in any affected facility described in subsection (1) of this section if the volatile content consists only of water and non-photochemically reactive solvent and the solvent comprises not more than twenty (20) percent of said volatile content by volume as applied;

  (f) The use of equipment for which other requirements are specified by are regulations of the Division of Air Pollution or which are exempt from air pollution control requirements;

(g) The emergency release of organic material due to over pressurization provided that the vents are equipped with self-closing pressure relief valves or equivalent devices. Rupture discs are not acceptable as pressure relief valves.

Section 2. Definitions.
As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means any article, machine, equipment, or other contrivance used for employing or applying:

  (a) Any organic solvent which is photochemically reactive or material containing such photochemically reactive solvent; or
  (b) Any organic solvent, regardless of photochemical reactivity, which is baked, heat-cured, or heat polymerized in the presence of oxygen;

(2) "Organic materials" means chemical compounds of carbon excluding, methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, and ammonium carbonate;

(3) "Organic solvents" means organic materials which are liquids at standard conditions and which are used as dissolvers, viscosity reducers, cleaning agents, diluents, or thinners, except that such materials which exhibit a boiling point higher than 220 Fahrenheit at 0.5 millimeters mercury absolute pressure or having an equivalent vapor pressure shall not be considered to be solvents unless exposed to temperatures exceeding 220 degrees Fahrenheit;

(4) "Photochemically reactive solvent" means any solvent with an aggregate of more than twenty (20) percent 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 solvent;

  (a) A combination of hydrocarbons, alcohols, aldehydes, esters, ethers, or ketones having an olefinic or cyclo-olefinic type of unsaturation; five (5) percent;

  (b) A combination of aromatic compounds with eight (8) or more carbon atoms to the molecule except that ethylbenzene; eight (8) percent;

  (c) A combination of ethylbenzene, ketones having branched hydrocarbon structures, trichloroethylene or toluene; twenty (20) percent;

  (d) When any organic solvent or any constituent of an organic solvent may be classified by its chemical structure into more than one (1) 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 solvents.

(5) "Classification date" means the effective date of this regulation.

Section 3. Standard for Organic Material.

(1) No person shall discharge into the open air, from any affected facility using organic solvents more than forty (40) pounds of organic material in any one (1) day, nor eight (8) pounds in any one (1) hour unless said emissions have been reduced by at least eighty-five (85) percent by weight.

(2) 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 from air or heated drying of products for the first twelve (12) hours after their removal from an affected facility shall be included in determining compliance with this section. Further, emissions of organic material to the facility shall be included with other emissions of organic materials from that affected facility for determining compliance with this regulation.

(3) Emissions of organic materials into the atmosphere required to be controlled by subsections (1) and (2) of this section shall be reduced by:

  (a) Incineration, provided that ninety (90) percent or more of the carbon in the organic material discharged from an affected facility is oxidized to carbon dioxide;

  (b) Adsorption; or

  (c) Modifying processing procedures, equipment and/or materials in such a manner so as to achieve no less than the degree of control of organic solvents required. The implementation of such modifications in lieu of compliance with subsections (1) and (2) of this section shall require the express prior approval of the department.

(4) A person incinerating, adsorbing, or otherwise processing organic materials pursuant to this section 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 department, for indicating temperatures, pressures, rates of flow or other operating conditions necessary to determine the degree and effectiveness of air pollution control.

(5) Any person using organic solvents or any material containing organic solvents shall supply the department, upon request and in the manner and form prescribed, written evidence of the chemical composition, physical properties and amount consumed for each organic solvent used.

(6) The owner or operator of an affected facility may apply to the department for approval of an emissions reduction plan as an alternative to the standards set forth in subsection (1) of this section. The department may approve the application if the owner or operator demonstrates:

- (a) That compliance with the standards contained in subsection (1) of this section is technically or economically infeasible; and

- (b) That any emissions in excess of those allowed for the affected facility will be compensated by reducing emissions from other facilities at the source below the allowable organic material emissions from other facilities at the source below the allowable organic material emission rates or by reducing emissions of organic material from non-regulated facilities within the source.

(7) The plan of emissions reduction approved pursuant to subsection (6) of this section shall be included as a condition to permit to operate the source and shall be approved by the U.S. Environmental Protection Agency.

Section 4. Compliance.

(1) In all cases the design of any control system is subject to approval by the department.

(2) Compliance with the standard in Section 3 shall be demonstrated by a material balance except in those cases where the department determines that a material balance is not possible. For those cases where a material balance is not possible, compliance will be determined based on engineering analysis by the department 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 department, performance tests as specified by the department shall be conducted in order to determine the efficiency of the control device.

Effective Date: June 29, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092

401 KAR 61:065. Existing nitric acid plants.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing nitric acid plants.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility which means each nitric acid production unit commenced before the classification date defined below.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Nitric acid production unit" means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

(2) "Weak acid production unit" means acid which is thirty (30) to seventy (70) percent by weight in strength.

(3) "Classification date" means August 17, 1971.

Section 3. Standard for Nitrogen Oxides.

On and after the date on which the performance test required to be conducted by 401 KAR 61:005, Section 2, is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain nitrogen oxides, expressed as nitrogen dioxide, in excess of 2.9 kg per metric ton of acid produced (5.8 lb. per ton), the production being expressed as 100 percent nitric acid.

(2) Exhibit ten (10) percent opacity, or greater.

Section 4. Test Methods and Procedures.

(1) The reference methods as defined in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine

compliance with the standard prescribed in Section 3 as follows:

(a) Reference Method 7 for the concentration of nitrogen oxides;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate; and

(d) Reference Method 3 for gas analysis.

(2) The sampling point shall be the center of the stack or duct at a point no closer to the walls than one (1) meter (3.28 feet). Each run shall consist of at least four (4) grab samples taken at approximately fifteen (15) minute intervals. The arithmetic mean of the samples shall constitute the run value. A velocity traverse shall be performed once per run.

(3) Acid production rate, expressed in metric tons per hour of 100 percent nitric acid, shall be determined during each testing period by suitable methods and shall be confirmed by a material balance over the production system.

(4) For each run, nitrogen oxides, expressed in g/metric ton of 100 percent nitric acid, shall be determined by dividing the emission rate in g/hour by the acid production rate. The emission rate shall be determined by the equation:

$$g/hr = (Qx)(c)$$

where:

Qx = volumetric flow rate of the effluent in dscm/hr, and
c = nitrogen oxides concentration in g/dscm.

Effective Date: June 6, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JUL 12, 1982	47 FR 30059

401 KAR 61:070. Existing ferroalloy production facilities.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement,and control of air pollution. This regulation provides for control of emissions from existing ferroalloy production facilities.

Section 1. Applicability.

The provisions of this regulation are applicable to the following affected facilities commenced before the classification date defined below: electric submerged arc furnaces which 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 dust-handling equipment.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "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) "Furnace charge" means any material introduced into the electric submerged arc furnace and may consist of, but is not limited to ores, slags, carbonaceous material, and limestone.

(3) "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.

(4) "Slag" means the more or less completely fused and vitrified matter separated during the reduction of metal from its ore.

(5) "Tapping" means the removal of slag or product from the electric submerged arc furnace under normal operating conditions as removal of metal under normal pressure and movement by gravity down the spout into the ladle.

(6) "Tapping period" means the time duration from initiation of the process of opening the

tap hole until plugging of the tap hole is complete.

(7) "Furnace cycle" means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.

(8) "Tapping station" means that general area where molten product or slag is removed from the electric submerged arc furnace.

(9) "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.

(10) "Furnace power input" means the resistive electrical power consumption of an electric submerged arc furnace as measured in kilowatts.

(11) "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.

(12) "Control device" means the air pollution control equipment used to remove particulate matter generated by an electric submerged arc furnace from an effluent gas stream.

(13) "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.

(14) "Standard ferromanganese" means that alloy as defined herein by ASTM A-99-66(71) (ASTM designations are filed by reference in 401 KAR 50:015.

(15) "Silicomanganese" means that alloy as defined by ASTM A-483- 64(74).

(16) "Calcium carbide" means material containing seventy (70) to eighty-five (85) percent calcium carbide by weight.

(17) "High-carbon ferrochrome" means that alloy as defined herein by ASTM A-101-73 grade HC1 through HC6.

(18) "Charge chrome" means that alloy containing fifty-two (52) to seventy (70) percent by weight chromium, five (5) to eight (8) percent by weight carbon, and three (3) to six (6) percent by weight silicon.

(19) "Silvery iron" means any ferrosilicon, as defined by ASTM A- 100-69(74), which contains less than thirty (30) percent silicon.

(20) "Ferrochrome silicon" means that alloy as defined by ASTM A-482-66(71).

(21) "Silicomanganese zirconium" means that alloy containing sixty (60) to sixty-five (65) percent by weight silicon, 1.5 to 2.5 percent by weight calcium, five (5) to seven (7) percent by weight zirconium, 0.75 to 1.25 percent by weight aluminum, five (5) to seven (7) percent by weight manganese, and two (2) to three (3) percent by weight barium.

(22) "Calcium silicon" means that alloy as defined by ASTM A-495- 64(70).

(23) "Ferrosilicon" means that alloy as defined by ASTM A-100- 69(74) grades A,B,C,D, and E which contains fifty (50) or more percent by weight silicon.

(24) "Silicon metal" means any silicon alloy containing more than ninety-six (96) percent silicon by weight.

(25) "Ferromanganese silicon" means that alloy containing sixty- three (63) to sixty-six (66) percent by weight manganese, twenty- eight (28) to thirty-two (32) percent by weight silicon, and a maximum of 0.08 percent by weight carbon.

(26) "Classification date" means October 21, 1974.

(27) "Concentrated discharge" means that the outlet from a control device consists of either stacks (one (1) or more) or openings on the device's top or side which has (have) a total area less than five (5) percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(28) "Disperse discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding five (5) percent of the corresponding top or side or which has (have) the length more than twice the width. A control device may have both dispersed and concentrated discharges.

Section 3. Standard for Particulate Matter.

(1) On or after the date on which the performance test required to be conducted by 401 KAR 61:005 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:

- (a) Exit from a control device and exhibit an opacity equal to or greater than three(3) percent, where control device has dispersed discharge.

- (b) Exit from any building opening and exhibit an opacity equal to or greater than:
  1. Fifteen (15) percent for these gases which are the result of routine smelting/melting operations where no auxiliary operations will occur;

  2. Twenty (20) percent for those gases which are from a furnace associated with metallurgical treatment while no auxiliary operations are occurring;

3. Twenty-five (25) percent for those gases which are the result of tapping operations.

4. Forty (40) percent for those gases which occur only during a metallurgical treatment; or

5. Forty (40) percent for those gases which occur during the pouring of metal from slag ladles into castbeds or molds.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit fifteen (15) percent opacity or greater.

Section 4. Test Methods and Procedures.
Reference Method 9 in Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, except as provided in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3.

Effective Date: June 6, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	DEC 24, 1980 MAY 03, 1984	45 FR 84999 49 FR 18833

401 KAR 61:075. Steel plants and foundries using existing electric arc furnaces.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for control of emissions from steel plants or foundries using existing electric arc furnaces.

Section 1. Applicability.

The provisions of this regulation apply to the following affected facilities in steel plants and foundries commenced before the classification date defined below: electric arc furnaces and/or associated metallurgical equipment located in the same shop as well as associated dust-handling equipment.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Electric arc furnace (EAF)" means any furnace that produces molten steel and heats the charge materials will electric arcs from carbon electrodes. Furnaces from which the molten steel is cast into the shape of finished products, such as in the foundry, are affected facilities included within the scope of this definition. Furnaces which, as the primary source of iron, continuously feed pre-reduced ore pellets are not affected facilities within the scope of this definition.

(2) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for an EAF subject to this regulation.

(3) "Control device" means the air pollution control equipment used to remove particulate matter generated by an EAF(s) from the effluent gas stream.

(4) "Capture system" means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an EAF and associated metallurgical equipment to the air pollution control device.

(5) "Associated metallurgical equipment" in the shop includes but is not limited to scrap pre-heaters and degreasers, and equipment for hot metal transfer, charging, lancing, boiling, slagging and de-slagging, tapping, inoculation, teeming, hot-topping, vacuum

de-gassing, continuous casting, etc.

(6) "Charge" means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

(7) "Charging period" means the time period commencing at the moment an EAF starts to open and ending either three (3) minutes after the EAF roof is returned to its closed position or six (6) minutes after commencement of opening of the roof, whichever is longer.

(8) "Tap" means the pouring of molten steel from an EAF.

(9) "Tapping period" means the time period commencing at the moment an EAF begins to tilt to pour and either three (3) minutes after an EAF returns to an upright position or six (6) minutes after commencing to tilt, whichever is longer.

(10) "Meltdown and refining" means that phase of the steel production cycle when charge material is melted and undesirable elements are removed from the metal.

(11) "Meltdown and refining period" means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods.

(12) "Shop opacity" means the arithmetic average of twenty-four (24) or more opacity observations of emissions from the shop taken in accordance with Reference Method 9 of Appendix A of 40 CFR 60, filed by reference in 401 KAR 50:015, for the applicable time periods.

(13) "Heat time" means the period commencing when scrap is charged to an empty EAF and terminating when the EAF tap is completed.

(14) "Shop" means the building which houses one (1) or more EAF.

(15) "Direct shell evaluation system" means any system that maintains a negative pressure within the EAF above the slag or metal and ducts the emissions to the control device.

(16) "Concentrated discharge" means that the outlet from a control device consists of either stacks one (1) or more) openings on the device's top or side which has (have) a total area less than five (5) percent of the corresponding top or side and which has (have) a length of not more than twice the width.

(17) "Dispersed discharge" means that the outlet from a control device consists of opening(s) on the device's top or side which has (have) a total area exceeding five (5) percent of the corresponding top or side or which have a length more than twice the width.

(18) "Classification date" means October 21, 1974.

Section 3. Standard for Particulate Matter.

(1) On or after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from an electric arc furnace and associated metallurgical equipment any gases which:

  (a) Exit from a control device and contain particulate matter in excess of 0.010 grains/dscf (twenty-three (23) mg/dscm);

  (b) Exit from a control device and exhibit opacity in excess of:

    1. Ten (10) percent for a control device with a concentrated discharge.

    2. Three (3) percent for a control device with a dispersed discharge.

  (c) Exit directly from a shop and exhibit an opacity greater than ten (10) percent except:

    1. Shop opacity less than thirty (30) percent may occur which is caused by an EAF during its charging period.

    2. Shop opacity less than thirty (30) percent may occur which is caused by an EAF during its tapping period.

    3. Where the capture system is operated such that the roof of the shop is closed during the charge and the tap, and emissions to the atmosphere are prevented until the roof is opened after completion of the charge or tap, the shop opacity standards under this paragraph shall apply when the roof is opened and shall continue to apply for the length of time defined by the charging and/or tapping periods.

(2) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit ten (10) percent opacity or greater.

Section 4. Monitoring of Operations.

(1) The owner or operator subject to the provisions of this regulation shall maintain records daily of the following information:

  (a) Time and duration of each charge;

  (b) Time and duration of each tap;

(c) All flow rate data obtained under subsection (2) of this section, or equivalent obtained under subsection (4) of this section; and

(d) All pressure data obtained under subsection (5) of this section.

(2) Except as provided under subsection (4) of this section, the owner or operator subject to the provisions of this regulation shall install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of plus or minus ten (10) percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The department may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of Appendix A of 40 CFR 60.

(3) When the owner or operator of an EAF is required to demonstrate compliance with the standard under Section 3(1)(c), and at any other time the department may require, the volumetric flow rate through each separately ducted hood shall be determined during all periods in which the hood is operated for the purpose of capturing emissions from the EAF using the monitoring device under subsection (2) of this section. The owner or operator may petition the department for re-establishment of these flow rates whenever the owner or operator can demonstrate to the department's satisfaction that the EAF operating conditions upon which the flow rates were previously established are no longer applicable. The flow rates determined during the most recent demonstration of compliance shall be maintained (or may be exceeded) at the appropriate level for each applicable period. Operation at lower flow rates may be considered by the department to be unacceptable operation and maintenance of the affected facility.

(4) The owner or operator may petition the department to approve any alternative method that will provide a continuous record of operation of each emission capture system.

(5) Where emissions during any phase of the heat time are controlled by use of a direct shell evacuation system, the owner or operator shall install, calibrate, and maintain a monitoring device the continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as fifteen (15) minute integrated averages. The monitoring device may be installed in any appropriate location in the averages. The monitoring device may be installed in any appropriate location in the EAF such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of plus or minus five (5) mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(6) When the owner or operator of an EAF is required to demonstrate compliance with the standard under Section 3(1)(c) and at any other time the department may require, the

pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device under subsection (5) of this section. The owner or operator may petition the department for re-establishment of the fifteen (15) minute integrated average pressure whenever the owner or operator can demonstrate to the department's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the department to be unacceptable operation and maintenance of the affected facility.

(7) Where the capture system is designed and operated such that all emissions are captured and ducted to a control device, the owner or operator shall not be subject to the requirements of this section.

(8) Where each EAF in a shop has an actual tapping capacity of less than ten (10) tons, the owner or operator shall not be subject to the requirements of this section.

Section 5. Test Methods and Procedures.

(1) Reference Methods in Appendix A of 40 CFR 60, except as provided under 401 KAR 50:045, shall be used to determine compliance with this regulation as follows:

(a) Reference Method 5 for concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow rate;

(d) Reference Method 3 for gas analysis; and

(e) Reference Method 9 for opacity determination.

(2) For Reference Method 5, the sampling time for each run shall be at least four (4) hours. When a single EAF is sampled, the sampling time for each run shall also include an integral number of heats. Shorter sampling times, when necessitated by process variables or other factors, may be approved by the department. The minimum sample volume shall be 4.5 dscm (160 dscf).

(3) For the purpose of this section, the owner or operator shall conduct the demonstration of compliance with Section 3 (1)(c) and furnish the department a written report of the results of the test.

(4) For the purpose of this section, the owner or operator shall conduct the demonstration of

compliance with Section 3(1)(c) and furnish the department of the results of the test.

(5) When more than one (1) control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the equation in Appendix A to this regulation.

(6) Any control device subject to the provisions of this regulation shall be designed and constructed to allow measurement of volumetric flow rate and emissions using applicable test methods and procedures.

(7) Where emissions from any EAF(s) are combined with emissions from other affected facilities in the same shop and controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(a) Base compliance on control of the combined emissions;

(b) Utilize a method acceptable to the department which compensates for the emissions from the other affected facilities; and

(c) Any combination of the criteria of paragraphs (a) and (b) of this subsection.

[SIP Compilation Table After Appendix]

APPENDIX A TO 401 KAR 61:075

EQUATION FOR CONCENTRATION OF PARTICULATE MATTER FOR MORE THAN ONE CONTROL DEVICE

$$C_s = \frac{\sum_{n=1}^{N} (C_s Q_s)_n}{\sum_{n=1}^{N} (Q_s)_n}$$

Where:

C_s = concentration of particulate matter in mg/dscm (gr/dscf) as determined by Reference Method 5.

N = total number of control devices tested.

Q_s = volumetric flow rate of the effluent gas stream in dscm/hr (dscf/hr) as determined by Reference Method 2.

$(C_sQ_s)_n$ or $(Q_s)_n$ = value of the applicable parameter for each control device tested.

Effective Date: December 1, 1982

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		DEC 24, 1980	45 FR 84999
1st Revision	DEC 09, 1982	DEC 04, 1986	51 FR 43742
		MAY 04, 1989	54 FR 19169

401 KAR 61:080. Steel plants using existing basic oxygen process furnaces.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Natural Resources Division of Air Pollution

Relates to: KRS Chapter 224
Pursuant to: KRS Chapter 13.082, 224.033
Necessity and Function: KRS 224.033 requires the Department for Natural Resources and Environmental Protection to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from steel plants using existing basic oxygen process furnaces.

Section 1. Applicability.

Provisions of this regulation are applicable to the following affected facilities commenced before the classification date defined below: basic oxygen process furnaces, associated metallurgical equipment, and dust-handling equipment.

Section 2. Definitions.

As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Basic oxygen process furnaces (BOPF)" means any furnace producing steel by charging scrap steel, hot metal, and flux materials into a vessel and introducing a high volume of an oxygen-rich gas.

(2) "Dust-handling equipment" means any equipment used to handle particulate matter collected by the control device and located at or near the control device for a BOPF and/or associated equipment subject to this regulation.

(3) "Control device" means the air pollution control equipment used to remove from the effluent gas stream, particulate matter generated by BOPF and/or associated equipment.

(4) "Steel production cycle" means the operation required to produce each batch of steel and includes the following major functions: scrap preheating, scrap charging, hot metal charging, oxygen blowing and tapping.

(5) "Charge" means the addition of steel scrap, molten iron and other materials into a BOPF.

(6) "Tap" means the pouring of molten steel from a BOPF.

(7) "Shop" means the building or bay which houses one (1) or more BOPFs and associated metallurgical equipment.

(8) "Classification date" means June 11, 1973.

(9) "Associated metallurgical equipment" means process equipment located in the shop used in conjunction with external desulfurization of molten iron, hot metal transfer, and transfer of slag and kish.

Section 3. Standard for Particulate Matter.

(1) No owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any gases which exceed a maximum particulate matter concentration of 0.03 gr/dscf from the control device associated with the BOPF as measured only during the main oxygen blowing period.

(2) No owner or operator shall cause to be discharged into the atmosphere any gases which exceed a maximum particulate matter concentration of 0.010 gr/dscf from a control device associated with any other BOPF associated metallurgical equipment as measured only during operation of such equipment.

(3) No owner or operator shall cause to be discharged into the atmosphere from any gases which exit from a control device and exhibit opacity of twenty (20) percent or more.

(4) No owner or operator shall cause to be discharged into the atmosphere from any gases which exit from a shop, due to operations of a BOPF and/or associated metallurgical equipment, and exhibit opacity of twenty (20) percent or more form more than eleven (11) times as observed at fifteen (15) second intervals over a period of any sixty (60) consecutive minutes. Reference Method 9 of Appendix A to 40 CFR 60, filed by reference in 401 KAR 50:015 and supplemented by the procedures in Section 5(4), shall be used for determining opacity in this subsection except for averaging time and number of observations.

(5) No owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit ten (10) percent opacity or greater.

Section 4. Monitoring of Operations.

The owner or operator of an affected facility shall maintain a single time-measuring instrument which shall be used in recording daily the time and duration of each steel production cycle, and the time and duration of any diversion of exhaust gases from the main stack servicing the BOPF.

Section 5. Test Methods and Procedures.

(1) Reference methods in Appendix A of 40 CFR 60, except as provided under 401 KAR 50:045, shall be used to determine compliance with the standards prescribed under Section 3 as follows:

(a) Reference Method 5 for concentration of particulate matter and associated moisture content;

(b) Reference Method 1 for sample and velocity traverses;

(c) Reference Method 2 for velocity and volumetric flow;

(d) Reference Method 3 for gas analysis; and

(e) Reference Method 9 for opacity determination for emissions discharged through a control device and from dust-handling equipment. For the purpose of this regulation, opacity observation taken at fifteen (15) second intervals immediately before and after a diversion of exhaust gases from the stack may be considered to be consecutive for the purpose of computing an average opacity for a six (6) minute period. Observations taken during a diversion shall not be used in determining compliance with the opacity standard.

(2) For Reference Method 5, the sampling for each run shall continue for an integral number of cycles with total duration of at least sixty (60) minutes except that shorter sampling times when necessitated by process variables or other factors may be approved by the department. The sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min). For the purpose of testing the control device associated with the BOPF a cycle shall start at the beginning of the primary oxygen blow and shall terminate at the end of the primary oxygen blow.

(3) Sampling of flue gases during each steel production cycle shall be discontinued whenever all flue gases are diverted from the stack and shall be resumed after each diversion period.

(4) For purpose of determining opacity from a shop pursuant to Section 3(4), the following procedures shall be used to supplement Method 9:

(a) In making observations of roof monitor emissions, the reader shall be positioned within a sector seventy (70) degrees either side of a line perpendicular to the long axis of the roof monitor. Within this sector the reader shall be positioned with the sun behind him and generally perpendicular to the axis of the plume that is being observed. On overcast days or if the plume is in a shadow, the reader need not follow the requirement about positioning his back to the sun.

(b) In making observations of emissions from other openings in the building, the reader shall be positioned within a sector seventy (70) degrees either side of a line perpendicular to the side of the building nearest which the emissions occur and with a sun behind him and generally perpendicular to the axis of the plum that is being observed. On overcast days, the reader need not follow the requirement about positioning his back to the sun.

(c) If emissions are being emitted from the roof monitor and other discharge points from the building, the reader shall read and record whichever plume is most opaque at the time of each reading.

Section 6. Compliance Timetable.
The owner or operator of an affected facility shall demonstrate compliance with Section 3(1) on or before December 31, 1982. Compliance with all other provisions of this regulation shall have been demonstrated on or before June 6, 1979.

Section 7. Alternate Emission Limitations. The owner or operator of an affected facility subject to this regulation may propose an alternate plan pursuant to the requirements of 401 KAR 51:055 to meet the emissions limitations required by this regulation.

Effective Date: April 1, 1984

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		DEC 24, 1980	45 FR 84999
1st Revision	MAY 01, 1984	DEC 04, 1986	51 FR 43742
		MAY 04, 1989	54 FR 19169

401 KAR 61:085. Existing service stations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 42 USC 7401-7626, 42 USC 7407, 42 USC 7408, 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe administrative regulations for the prevention, abatement, and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This administrative regulation provides for the control of volatile organic compound emissions from existing service stations.

Section 1.Definitions.

As used in this administrative regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means the gasoline storage tanks at a service station.

(2) "Classification date" means June 6, 1979.

(3) "Service station" means a public or private establishment except farms which dispenses gasoline into vehicle fuel tanks.

(4) "Submerged fill pipe" means a fill pipe the discharge of which is entirely submerged when the liquid level is six (6) inches above the bottom of the tank; or when applied to a tank which is loaded from the side, shall mean a fill pipe the discharge opening of which is entirely submerged when the liquid level is two (2) times the fill pipe diameter above the bottom of the tank.

(5) "Vapor balance system" means a system which conducts vapors displaced from storage tanks during filling operations to the storage compartment of the transport vehicle delivering the fuel.

(6) "Vent line restriction" means:

(a) An orifice of one-half (1/2) to three-quarters (3/4) inch inside diameter;

(b) A pressure-vacuum relief valve set to open at not less than eight (8) oz. per square inch pressure and not less than one-half (1/2) oz. per square inch vacuum unless a different vacuum relief setting is required by safety or fire authorities; or

(c) A vent shut-off valve which is activated by connection of the vapor return hose.

Section 2.Applicability.

This administrative regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this administrative regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

(1) The owner or operator of an affected facility shall install, maintain, and operate the following devices:

(a) Submerged fill pipe;

(b) Vent line restriction on the affected facility vent line; and

(c) Vapor balance system and vapor tight connections on the liquid fill line and the vapor return line. The cross-sectional area of the vapor return hose must be at least fifty (50) percent of the liquid fill hose, and free of flow restrictions to achieve acceptable recovery. The size and design of the vapor return line and connections, including coaxial systems, are subject to the approval of the cabinet.

(d) 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 (6) inches of the bottom of the tank.

(2) The owner or operator may elect to use an alternate control system if that system can be demonstrated to the cabinet's satisfaction to achieve an equivalent control efficiency.

(3) The owner or operator shall not allow any transport vehicle to deliver fuel to an affected facility until the transport vehicle is properly connected to the vapor balance system or alternate control system.

Section 4.Compliance Timetable.

(1) Affected facilities which were subject to this administrative regulation as in effect on December 3, 1980, shall have achieved final compliance upon startup.

(2) The owner or operator of an affected facility which becomes subject to this administrative regulation because it is located in a county or portion of a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, shall comply with this administrative regulation in the following manner:

(a) Facilities with monthly throughput of 100,000 gallons or more of gasoline shall comply within one (1) year of the effective date of this administrative regulation.

(b) Facilities with a monthly throughput between 10,000 and 100,000 gallons, shall comply within two (2) years of the effective date of this administrative regulation.

(c) Facilities shall be considered to comply with the time requirements of paragraphs (a) and (b) of this subsection if the temporary operating permit authorized in Section 8(3) of 401 KAR 63:035 goes into effect by the date of compliance.

Section 5.Exemptions.

An affected facility shall be exempt from the provisions of Section 3 of this administrative regulation if the annual throughput is less than or equal to 120,000 gal.

Effective Date: February 8, 1993

Date Submitted to EPA	Date Approved by EPA	Federal Register

Original Reg	JUN 29, 1979	JAN 25,1980	45 FR 6092
1st Revision	FEB 05, 1981	MAR 30, 1983	48 FR 13168
2nd Revision	FEB 17, 1993	JUN 23, 1994	59 FR 32343

401 KAR 61:090. Existing automobile and light-duty truck surface coating operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 42 USC 7401 et. seq., 42 USC 7407, 42 USC 7408, 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing automobile and light-duty truck surface coating operations.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for automobile and light-duty truck frames, small parts, wheels, and main body parts at an assembly plant but does not include the following:

(a) Underbottom - sound deadener coatings;
(b) Zinc rich anti-rust and weld line anti-rust prime coatings;
(c) Adhesive coatings or mastics;
(d) Flexible coatings;
(e) Plastic body fillers or caulks; or
(f) Interior coatings which are applied after upholstery and interior plastic parts are attached to the body.

(2) "Applicator" means the mechanism or device used to apply the coating, including, but not limited to, dipping and spraying.

(3) "Automobile" means all passenger cars or passenger car derivatives capable of seating twelve (12) or fewer passengers.

(4) "Classification date" means June 29, 1979.

(5) "Coating line" means a series of equipment or operations used to apply, dry, or cure any prime, topcoat or repair coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;
(b) Process storage;
(c) Applicators;
(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
(e) Clean up operations;
(f) Leaks, spills and disposal of VOCs;
(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOC it receives from or distributes to each coating line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(6) "Final repair coating line" means a coating line for the repainting of any coatings which are damaged during vehicle assembly.

(7) "Flashoff area" means the space between the application area and the oven.

(8) "Light-duty truck" means all motor vehicles rated at 3,864 kilograms (8,500 pounds) gross vehicle weight or less which are designed primarily for purposes of transportation of property or are derivatives of these vehicles (including, but not limited to, pickups, vans, and window vans.)

(9) "Prime coat coating line" means a coating line for the first coating and surfacer which are responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(10) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(11) "Topcoat coating line" means a coating line for the coating of the surface to obtain desired aesthetic effects.

(12) "Surfacer" means the spray application of primer to touch-up areas on the surface not adequately covered during electrodeposition.

(13) "VOCs 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. 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 VOCs net input. When the nature of any operation or design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(14) "Electrophoretic deposition" 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.

Section 2. Applicability.

(1) This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

(2) This regulation shall not apply to affected facilities which are subject to local air pollution control district regulations which have been approved by the cabinet and the U.S. EPA.

Section 3. Standard for VOCs.

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

Section 4. Compliance.

(1) If applicable, compliance is determined by "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations," which has been incorporated by reference in Section 7 of this regulation.

(2) In all cases the design of any control system shall be subject to approval by the cabinet.

(3) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and any other factors that may influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(4) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(5) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation.

Section 5. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect June 29, 1979, shall have achieved final compliance by January 1, 1983, for prime coatings systems and final repair systems and by January 1, 1986, for topcoat systems.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) Prime coatings systems, topcoat systems, and final repair coating systems except as provided for in paragraph (b) of this subsection:

1. A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

2. The control system contract or the exempt coatings contracts and purchase orders shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

3. On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

4. On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

5. Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.

6. If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

(b) Prime coating lines which are using electrophoretic deposition on or before the effective date of this regulation shall be in compliance on the effective date of this regulation.

Section 6. Exemptions.

(1) Any affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is:

(a) Prime coating line: 0.14 kg/l of coating (1.2 lb/gal), excluding water or exempt solvent or both, which shall be applied by electrophoretic deposition and 0.34 kg/l of coating (2.8 lb/gal), excluding water or exempt solvent or both, delivered to the applicators associated with the surfacer. An alternative for the surfacer is fifty-five (55) percent solids by volume organic-borne prime coat applied with a minimum of sixty-five (65) percent transfer efficiency, or 1.9 kg/l (15.1 lb/gal) of solids deposited. An alternative for the prime coating line is an organic-borne prime coat consisting of a minimum of fifty-five (55) percent solids by volume which is applied with a minimum of fifty (50) percent transfer efficiency.

(b) Topcoat coating line: 0.34 kg/l of coating (2.8 lb/gal), excluding water or exempt solvent or both, delivered to the applicator(s) associated with the topcoat coating line or a fifty (50) percent solids by volume organic-borne topcoat applied with a minimum of sixty-five (65) percent transfer efficiency, or 1.9 kg/l (15.1 lb/gal) of solids deposited.

(c) Repair coating line: 0.58 kg/l of coating (4.8 lb/gal), excluding water or exempt solvent or both, as delivered to the applicator applied with a minimum of sixty-five (65) percent transfer efficiency.

(2) Any affected facility using this section may elect to use a weighted average of the coatings used in the particular coating line involved. If this average meets the exemption then all the coatings shall be considered to meet the exemption.

(3) The exemptions specified in this section may be achieved by:

(a) Use of low solvent coating; or

(b) Any other emission reduction process or equipment shown to be as effective.

(4) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

Section 7. Reference Material.

(1) Incorporation by reference. The following document is incorporated by reference: "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light Duty Truck Topcoat Operations," EPA-450/3-88-018, December 1988, available from U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711 and the U.S. Department of Commerce, National Technical Information Service, Springfield, Virginia 22161.

(2) The document incorporated by reference in subsection (1) of this section is available for public inspection and copying, subject to copyright law, at the following main and regional offices of the Kentucky Division for Air Quality during the normal working hours of 8:00 a.m. to 4:30 p.m., local time.

(a) Kentucky Division for Air Quality, 316 St. Clair Mall, Frankfort, Kentucky 40601, (502) 564-3382;

(b) Ashland Regional Office, 3700 Thirteenth Street, Ashland, Kentucky 41101, (606) 325-8569;

(c) Bowling Green Regional Office, 1508 Westen Avenue, Bowling Green, Kentucky 42104, (502) 843-5475;

(d) Florence Regional Office, 7964 Kentucky Drive, Suite 8, Florence, Kentucky 41042, (606) 292-6411;

(e) Hazard Regional Office, 233 Birch Street, Hazard, Kentucky 41701, (606) 439-2391;

(f) Owensboro Regional Office, 311 West Second Street, Owensboro, Kentucky 42301, (502) 686-3304; and

(g) Paducah Regional Office, 4500 Clarks River Road, Paducah, Kentucky 42003, (502) 898-8468.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Fedaeral Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:095. Existing solvent metal cleaning equipment.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 42 USC 7401 et. seq., 42 USC 7407, 42 USC 7408, 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing solvent metal cleaning equipment.

Section 1.Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means cold cleaners, open top vapor degreasers, and conveyorized degreasers which utilize volatile organic compounds (VOCs) to remove soluble impurities from metal surfaces.

(2) "Classification date" means June 29, 1979.

(3) "Freeboard height" means, for a cold cleaner, the distance from the liquid solvent level in the degreaser tank to the lip of the tank. For a vapor degreaser it means the distance from the solvent vapor level in the tank to the lip of the tank.

(4) "Freeboard ratio" means the freeboard height divided by the width of the degreaser.

(5) "Refrigerated chiller" means a second set of freeboard condenser coils located slightly above the primary condenser coils which create a cold air blanket above the vapor zone.

(6) "Cold cleaner" means a batch-loaded degreaser whose solvent is kept below its boiling point.

(7) "Open top vapor degreaser" means a batch-loaded degreaser whose solvent is heated to its boiling point creating a solvent vapor zone.

(8) "Conveyorized degreaser" means a degreaser which is continuously loaded by means of a conveyor system. Its solvent may be boiling or non-boiling.

(9) "Solvent" means, in this regulation, VOCs.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

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 operating requirements which apply to this type of degreaser as specified in Sections 4, 5, and 6 of this regulation.

Section 4.Cold Cleaners.

(1) Control equipment:

(a) The cleaner shall be equipped with a cover. If the solvent volatility is greater than fifteen (15) mm Hg measured at 100°F or if the solvent is agitated or heated, then the cover shall be designed so that it can be easily operated with one (1) hand.

(b) The cleaner shall be equipped with a drainage facility so that solvent that drains off parts removed from the cleaner will return to the cleaner. If the solvent volatility is greater than thirty-two (32) mm Hg measured at 100°F then the drainage facility shall be internal so that parts are enclosed under the cover while draining. The drainage facility may be external if the cabinet determines that an internal type cannot fit into the cleaning system.

(c) A permanent, conspicuous label, summarizing the operating requirements specified in subsection (2) of this section shall be installed on or near the cleaner.

(d) If used, the solvent spray shall be a fluid stream (not a fine, atomized or shower type spray) and at a pressure which does not cause excessive splashing.

(e) If the solvent volatility is greater than thirty-two (32) mm Hg measured at 100°F or if the solvent is heated above 120°F, then one (1) of the following control devices shall be used:

1. Freeboard that gives a freeboard ratio greater than or equal to 0.7.

2. Water cover (solvent shall be insoluble in and heavier than water).

3. Other systems of equivalent control, such as a refrigerated chiller or carbon adsorption.

(2) Operating requirements:

(a) Waste solvent shall not be disposed of or transferred to another party so that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Waste solvent shall be stored only in covered containers.

(b) Degreaser cover shall be closed if not handling parts in the cleaner.

(c) Cleaned parts shall be drained until dripping ceases (fifteen (15) seconds is usually necessary).

Section 5.Open Top Vapor Degreasers.

(1) Control equipment:

(a) The degreaser shall be equipped with a cover that can be opened and closed easily without disturbing the vapor zone.

(b) The degreaser shall be equipped with the following safety switches:

1. Condenser flow switch and thermostat to shut off sump heat if condenser coolant either is not circulating or is too warm.

2. Spray safety switch to shut off spray pump if the vapor level drops more than four (4) inches below the bottom condenser coil in order to prevent spraying abo[~~u~~]ve the vapor level.

3. Vapor level control thermostat which shuts off sump heat if the vapor zone rises above the design level.

4. Equivalent safety systems as approved on a case-by-case basis by the cabinet.

(c) The degreaser shall be equipped with at least one (1) of the following major control devices:

1. Freeboard with freeboard ratio greater than or equal to 0.75, and if the degreaser opening is greater than ten (10) square feet, the cover shall be powered or mechanically assisted.

2. Refrigerated chiller.

3. Enclosed design so that the cover or door opens only when the dry part is actually entering or exiting the degreaser.

4. Carbon adsorption system, with ventilation greater than or equal to fifty (50) cfm/square foot of air/vapor interface area (if cover is open), and exhausting less than twenty-five (25) ppm by volume solvent averaged over one (1) complete adsorption cycle.

5. Control system demonstrated to have control efficiency equivalent to or better than any of the above.

(d) A permanent, conspicuous label, summarizing the operating procedures specified in subsection (2) of this section shall be installed on or near the degreaser.

(2) Operating requirements:

(a) The cover shall be closed at all times unless processing work loads through the degreaser.

(b) Solvent carry-out shall be minimized by the following measures:

1. Parts shall be racked so that entrainment of solvent is avoided and full drainage is accomplished.

2. Parts shall be moved in and out of the degreaser at vertical speed less than eleven (11) ft./min.

3. The work load in the vapor zone shall be degreased until condensation ceases (thirty (30) seconds or more is usually necessary).

4. Any pools of solvent on the cleaned parts shall be tipped out before removal.

5. Parts shall be allowed to dry within the degreaser above the vapor zone until visually dry (fifteen (15) seconds is usually necessary).

(c) Porous or absorbent materials such as cloth, leather, wood, or rope shall not be degreased.

(d) Work loads shall not occupy more than half of the degreaser's open top area.

(e) Spraying shall not be allowed above the vapor level.

(f) Solvent leaks shall be repaired immediately or shut down the degreaser.

(g) Waste solvent shall not be disposed of or transferred to another party so that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Waste solvent shall be stored only in closed containers.

(h) Exhaust ventilation shall not exceed sixty-five (65) cfm per square foot of degreaser area unless necessary to meet OSHA requirements or control device requirements. Ventilation fans shall not be used near the degreaser opening.

(i) Water shall not be visually detectable in the solvent exiting the water separator.

Section 6.Conveyorized Degreasers.

(1) Control equipment:

(a) A conveyorized degreaser shall be enclosed except for work load entrances and exits.

(b) The degreaser shall be equipped with a drying tunnel or another means such as rotating baskets sufficient to prevent cleaned parts from carrying out solvent liquid or vapor.

(c) Minimized openings: entrances and exits shall silhouette work loads so that the average clearance between the largest parts and the edge of the degreaser opening is either less than four (4) inches or less than ten (10) percent of the width of the opening.

(d) Down-time covers: The degreaser shall be equipped with covers for closing off the entrance and exit during shutdown hours.

(e) If the degreaser has an air/solvent interface area or an air/vapor interface area equal to or greater than twenty (20) square feet, it shall be equipped with at least one (1) of the following major control devices:

1. Refrigerated chiller.

2. Carbon adsorption system with ventilation greater than or equal to fifty (50) cfm/square foot of air/vapor interface area (when down-time covers are open) and exhausting less then twenty-five (25) ppm of solvent by volume averaged over a complete adsorption cycle.

3. A system demonstrated to have a control efficiency equivalent to or better than either of the above.

(f) If the degreaser is a vapor type, it shall be equipped with the following safety switches:

1. Condenser flow switch and thermostat which will shut off the sump heat if coolant is either not circulating or is too warm.

2. Spray safety switch which will shut off the spray pump or conveyor if the vapor level drops more than four (4) inches below the bottom condenser coil in order to prevent spraying above the vapor level.

3. Vapor level control thermostat which will shut off sump heat if the vapor level rises above the design level.

4. Equivalent safety systems as approved on a case-by-case basis by the cabinet.

(g) A permanent, conspicuous label, summarizing the operating procedures specified in subsection (2) of this section shall be installed on or near the degreaser.

(2) Operating requirements:

(a) Exhaust ventilation shall not exceed sixty-five (65) cfm per square foot of degreaser opening unless necessary to meet OSHA requirements or control device requirements. Work place fans shall not be used near the degreaser opening.

(b) Solvent carry-out shall be minimized by the following measures:

1. Parts shall be racked so that entrainment of solvent is avoided and full drainage is accomplished.

2. Vertical conveyor speed shall be maintained at less than eleven (11) ft/min.

(c) Waste solvent shall not be disposed of or transferred to another party in a way that greater than twenty (20) percent by weight of the waste solvent can evaporate into the atmosphere. Waste solvent shall be stored only in closed containers.

(d) Solvent leaks shall be repaired immediately or the degreaser shut down.

(e) Water shall not be visually detectable in the solvent exiting the water separator.

(f) Down-time covers shall be placed over entrances and exits of the degreaser immediately after the conveyor and exhaust are shut down and removed just before they are started up.

Section 7.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance by July 1, 1981.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than three (3) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract shall be awarded no later than five (5) months after the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emissions control equipment shall be initiated no later than seven (7) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment shall be completed no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than twelve (12) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 8.Exemptions.

Any cold cleaners shall be exempt from Section 4 of this regulation if the following criteria are met:

(1) The cold cleaner shall have a remote solvent reservoir;

(2) The solvent used in the cold cleaner shall not have a vapor pressure that exceeds thirty-three (33) mm Hg measured at 100°F or be heated above 120° F;

(3) The sink-like work area shall have an open drain area less than 100 sq. cm.; and

(4) Evidence shall be provided that waste solvent shall be stored or properly disposed of with minimal loss due to evaporation.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
1st Revision	JAN 19, 1981	AUG 07, 1981	46 FR 40188
2nd Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:100. Existing insulation of magnet wire operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing insulation of magnet wire operations.

Section 1.Definitions.
As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for insulation of magnet wire.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to a coating bath.

(3) "Coating die" means the device, located between the applicator and the drying oven, which scrapes off excess coating and leaves a thin film of desired thickness.

(4) "Magnet wire" means wire used in equipment such as electrical motors, generators, and transformers which carries an electrical current.

(5) "Coating line" means a series of equipment or operations used to apply, dry, or cure any coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;

(b) Process storage;

(c) Applicators;

(d) Drying operations including coating die area evaporation, oven drying, baking, curing, and polymerization;

(e) Clean up operations;

(f) Leaks, spills, and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOCs it receives from or distributes to each coating line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(6) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain surface coatings, VOCs, or recovered VOCs; but does not mean

storage tanks of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(7) "Classification date" means June 29, 1979.

(8) "VOCs 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. 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 VOCs net input. If the nature of any operation or design of equipment is such as to permit more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

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

Section 4.Compliance.

(1) In all cases the design of any control system shall be subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency and any other factors that may influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the coatings unless the cabinet determines that other methods are more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) Compliance on one (1) coating line with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emission limits for longer averaging times may be accepted if approved by the cabinet. Case-by-case

alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a (SIP) revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application for adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance by July 1, 1981.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract or the exempt coatings and any accompanying process change contracts shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen months (18) after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6.Exemptions.

(1) Any affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is less than 0.20 kg/l of coating (1.7 lb/gal), excluding water or exempt solvent or both, delivered to the applicators associated with the coating line.

(2) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:

(a) Three (3) lb/hr actual emissions before add-on control;

(b) Fifteen (15) lb/day actual emissions before add-on control; or

(c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/year before add-on control.

(3) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:105. Existing metal furniture surface coating operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing metal furniture surface coating operations.

Section 1.Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for indoor or outdoor metal furniture.

(2) "Applicator" means the mechanism or device used to apply the coating, including, but not limited to, dipping, spraying, or flowcoating.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Prime coat" means the first film of coating applied in a two (2) coat operation which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(5) "Topcoat" means the final film of coating applied in a two (2) coat operation to obtain desired aesthetic effects.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;

(b) Process storage;

(c) Applicators;

(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) Clean up operations;

(f) Leaks, spills and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOCs it receives from or distributes to each coating line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(8) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(9) "Metal furniture" means household and business items including but not limited to tables, chairs, waste baskets, beds, desks, lockers, benches, shelving, file cabinets, lamps and room dividers.

(10) "Classification date" means June 29, 1979.

(11) "VOCs 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. 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 VOCs net input. When the nature of any operation or design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

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

Section 4.Compliance.

(1) In all cases the design of any control system shall be subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and any other factors that may influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the

coatings, unless the cabinet determines that other methods would be more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) Compliance on one (1) coating line with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emission limits for longer averaging times may be accepted if approved by the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application for adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance by August 1, 1981.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract or the exempt coatings and any accompanying process change contracts shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6.Exemptions.

(1) Any affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is less than 0.36 kg/l of coating (3.0 lb/gal), excluding water or exempt solvent or both, delivered to the applicators associated with the prime, single or topcoat coating line.

(2) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:

(a) Three (3) lb/hr actual emissions before add-on control;

(b) Fifteen (15) lb/day actual emissions before add-on control; or

(c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/yr before add-on control.

(3) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:110. Existing large appliance surface coating operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing large appliance surface coating operations.

Section 1.Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for large appliances such as, but not limited to, doors, cases, lids, panels and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, and air conditioners.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping or spraying.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Prime coat" means the first film of coating applied in a two (2) coat operation.

(5) "Topcoat" means the final film of coating applied in a two (2) coat operation.

(6) "Single coat" means a single film coating applied directly to the metal substrate, omitting the prime coat.

(7) "Coating line" means a series of equipment or operations used to apply, dry, or cure any prime, topcoat, or single coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;

(b) Process storage;

(c) Applicators;

(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) Clean up operations;

(f) Leaks, spills, and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOCs it receives from or distributes to each coating line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(8) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(9) "Classification date" means June 29, 1979.

(10) "VOCs 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. 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 VOCs net input. If the nature of any operation or design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

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

Section 4.Compliance.

(1) In all cases the design of any control system shall be subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance, unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and any other factors that may influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the coatings unless the cabinet determines that other methods would be more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) Compliance on one (1) coating line with VOC emission limits shall be based on

an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emissions limits for longer averaging times may be accepted if approved by the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application for adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance by January 1, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract or the exempt coatings and any accompanying process change contracts shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6.Exemptions.

(1) Any affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is less than 0.34 kg/l of coating (2.8 lb/gal), excluding water or exempt solvent or both, delivered to the applicators associated with the prime, single, or topcoat coating line.

(2) Repair coating operations for the purpose of repairing scratches and nicks that occur during assembly shall be exempt from Section 3 of this regulation.

(3) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:

(a) Three (3) lb/hr actual emissions before add-on control;

(b) Fifteen (15) lb/day actual emissions before add-on control; or

(c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/yr before add-on control.

(4) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:120. Existing fabric, vinyl and paper surface coating operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100[requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing fabric, vinyl, or paper surface coating operations.

Section 1.Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for fabric, vinyl, or paper.

(2) "Applicator" means the mechanism or device used to apply the coating including, but not limited to, roll, knife, or rotogravure coater.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Coating line" means a series of equipment or operations used to apply, dry, or cure any coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;

(b) Process storage;

(c) Applicators;

(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) Clean up operations;

(f) Leaks, spills and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purpose of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOCs it receives from or distributes to each coating line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(j) An affected facility which is capable of performing both paper coating and paper printing shall be considered as performing a paper printing operation subject to 401 KAR 61:122.

(5) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(6) "Fabric coating" means the coating or saturation of a textile substrate to impart properties that are not initially present, such as strength, stability, water or acid repellency, functionality, or appearance.

(7) "Vinyl coating" means the coating of vinyl coated fabric or vinyl sheets, which includes decorative, functional, or protective topcoats or printing.

(8) "Paper coating" means saturation or 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, functional films, and decorative coatings on metal foil such as gift wrap and packaging, but does not include the printing of paper.

(9) "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.

(10) "Roll coating" means the application of a coating material to a substrate by means of hard rubber or steel rolls.

(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.

(12) "Classification date" means June 29, 1979.

(13) "VOCs 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. 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 VOCs net input. If the nature of any operation or design of equipment is such as to permit more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

(14) "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 401 KAR 61:122.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3. Standard for VOCs.

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

Section 4. Compliance.

(1) In all cases the design of any control system shall be subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and any other factors that may influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the coatings unless the cabinet determines that other methods would be more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) Compliance on one (1) coating line with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emission limits for longer averaging times may be accepted if approved by the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids. Vinyl plastisols and organisols shall not be included in VOC equivalency calculations that are required to be included in applications for VOC bubbles.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application for adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance by December 1, 1981.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract or the exempt coatings and any accompanying process change contracts shall be awarded no later than eleven (11) months after the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6. Exemptions.

(1) Any affected facility coating fabric or paper shall be exempt from Section 3 of this regulation if the VOC content of the coating is less than 0.35 kg/l of coating (2.9 lb/gal), excluding water or exempt solvent or both, delivered to the applicators associated with the coating line.

(2) Any affected facility coating vinyl shall be exempt from Section 3 of this regulation if the VOC content of the coating is less than 0.45 kg/l of coating (3.8 lb/gal) excluding water or exempt solvent or both, delivered to the applicators associated with the coating line.

(3) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:

(a) Three (3) lb/hr actual emissions before add-on control;

(b) Fifteen (15) lb/day actual emissions before add-on control; or

(c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/yr before add-on control.

(4) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55)

gallons during the previous twelve (12) months.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		Aug 07, 1981	46 FR 40188
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:122. Existing graphic arts facilities using rotogravure and flexography.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24A); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing graphic arts facilities which use rotogravure and flexography.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a printing line for packaging rotogravure, publication rotogravure, specialty rotogravure, and flexographic printing.

(2) "Applicator" means the mechanism or device used to apply the ink.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Printing line" means a series of equipment or operations used to apply, dry, or cure any inks containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;

(b) Process storage;

(c) Applicators;

(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) Clean up operations;

(f) Leaks, spills and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) printing line, its VOC emissions shall be assigned to each printing line of which it is a part proportionally to the throughput of VOCs it receives from or distributes to each printing line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate printing line;

(j) All units in a machine which has both coating and printing units shall be considered as performing a printing operation.

(5) "Process storage" means mixing tanks, holding tanks, and other tanks, drums, or other containers which contain inks, VOCs, or recovered VOCs; but does not mean storage tanks

of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(6) "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.

(7) "Coating" means the application of a uniform layer of material across the entire width of a web.

(8) "Classification date" means February 4, 1981.

(9) "VOCs 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. 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 VOCs net input. If the nature of any operation or design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emissions shall apply.

(10) "Packaging rotogravure printing" means rotogravure printing upon paper, paper board, metal foil, plastic film, and other substrates, which are, in subsequent operations, formed into packaging products and labels for articles to be sold.

(11) "Publication rotogravure printing" means rotogravure printing upon paper which is subsequently formed into books, magazines, catalogues, brochures, directories, newspaper supplements, and other types of printed materials.

(12) "Flexographic printing" means the application of words, designs and 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.

(13) "Rotogravure printing" means the application of words, designs, and pictures to a substrate by means of a roll printing technique which involves intaglio or recessed image areas in the form of cells.

(14) "Roll printing" means the application of words, designs, and pictures to a substrate by means of a series of hard rubber or steel rolls each with only partial coverage.

(15) "Specialty rotogravure printing" means all rotogravure printing except packaging rotogravure and publication rotogravure printing. It includes, but is not limited to, rotogravure printing on paper cups and plates, patterned giftwrap, wallpaper and floor coverings.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

(1) No person shall cause, allow, or permit an affected facility for publication rotogravure printing to discharge into the atmosphere more than twenty-five (25) percent by weight of the VOCs net input into the affected facility.

(2) No person shall cause, allow or permit an affected facility for packaging rotogravure printing or specialty rotogravure printing to discharge into the atmosphere more than

thirty-five (35) percent by weight of the VOCs net input into the affected facility.

(3) No person shall cause, allow, or permit an affected facility for flexographic printing to discharge into the atmosphere more than forty (40) percent by weight of the VOCs net input into the affected facility.

Section 4.Compliance.

(1) In all cases the design of any control system shall be subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall [will] be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and any other factors that may [could] influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to quality for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the inks used at an affected facility to verify that the inks meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24A, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable unless the cabinet determines that other methods would be more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) The amount of exempt solvents shall be subtracted from the amount of inks, just like water, with the ultimate value of interest being the mass of VOC per unit volume of ink less exempt solvent or water or both.

(6) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of graphic arts material or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each graphic arts material or solvent;

(e) The date for each application for graphic arts material or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on February 4, 1981, shall have achieved final compliance by December 31, 1982.

(2) The owner or operator of an affected facility shall be required to complete the

following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract or the exempt inks and any accompanying process change contracts shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emissions control equipment or process changes for exempt inks shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt inks shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6.Exemptions.

Any affected facility shall be exempt from Section 3 of this regulation if the printing systems:

(1) Utilize a water-borne ink whose volatile portion consists of seventy-five (75) volume percent water and twenty-five (25) volume percent organic solvent (or a lower VOC [volatile organic compound] content) in all printing units;

(2) Achieve a seventy (70) volume percent overall reduction of solvent usage (compared to all solvent-borne ink usage);

(3) Utilize inks which, excluding water, contain sixty (60) percent or more by volume non-volatile material as applied to the substrate; or

(4) Utilize inks with an emission limit of 0.5 lb VOC/lb solids as delivered to the applicator.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	FEB 05, 1981	NOV 24, 1981	46 FR 57486
		MAR 30, 1983	48 FR 13168
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:124. Existing factory surface coating operations of flat wood paneling.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 223.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing factory surface coating operations of flat wood paneling.

Section 1.Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for the factory surface coating of interior flat wood paneling.

(2) "Applicator" means the mechanism or device used to apply the coating including but not limited to roll coaters, curtain coaters, sprays and brushes.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Coating line" means a series of equipment or operations used to apply, dry, or cure coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;

(b) Process storage;

(c) Applicators;

(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) Clean up operations;

(f) Leaks, spills and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if equipment or an operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOC it receives from or distributes to each coating line;

(i) If a portion of the series of equipment or operations qualifies for an exemption according to Section 6, then that portion shall be considered to be a separate coating line.

(5) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(6) "Interior flat wood paneling" means printed interior wall panels made of hardwood plywood and thin particleboard, natural finish hardwood plywood panels, or hardboard paneling with Class II finishes.

(7) "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.

(8) "Hardwood plywood" means plywood whose surface layer is a veneer of hardwood.

(9) "Particleboard" means a manufactured board made of individual wood particles which have been coated with a binder and formed into flat sheets by pressure. Thin particleboard has a thickness of one-fourth (1/4) inch or less.

(10) "Natural finish hardwood plywood panels" means panels whose original grain pattern is enhanced by essentially transparent finishes frequently supplemented by fillers and toners.

(11) "Hardboard" means a panel manufactured primarily from interfelted lignocellulosic fibers which are consolidated under heat and pressure in a hot-press.

(12) "Class II hardboard paneling finishes" means finishes which meet the specifications of Voluntary Product Standard PS-59-73, which has been incorporated by reference in 401 KAR 50:015, as approved by the American National Standards Institute.

(13) "Classification date" means February 4, 1981.

(14) "VOCs 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. 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 VOCs net input. If the nature of an operation or a design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

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

Section 4.Compliance.

(1) In all cases the design of a control system is subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and other factors that could influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted

to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the coatings unless the cabinet determines that other methods would be more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) Compliance on one (1) coating line with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emission limits for longer averaging time may be accepted if approved by the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application for adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on February 4, 1981, shall have achieved final compliance by December 31, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) Award a contract for the control system or for the exempt coatings and accompanying process change no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) Initiate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6.Exemptions.

(1) An affected facility shall be exempt from Section 3 of this regulation if the total VOC content of all the coatings applied to a specific area of finished paneling product is:

(a) Less than 2.9 kg of VOCs per 100 sq. m. of coated surface (6.0 lb/1,000 sq.ft.) for printed interior wall panels made of hardwood plywood and thin particleboard;

(b) Less than 5.8 kg of VOCs per 100 sq. m. of coated surface (12.0 lb/1,000 sq. ft) for natural finish hardwood plywood panels; or

(c) Less than 4.8 kg of VOCs per 100 sq. m. of coated surface (10.0 lb/1,000 sq. ft) for Class II finishes for hardboard paneling.

(2) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty- five (55) gallons during the previous twelve (12) months.

(3) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:

(a) Three (3) lb/hour actual emissions before add-on control;

(b) Fifteen (15) lb/day actual emissions before add-on control; or

(c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/yr before add-on control.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	FEB 05, 1981	NOV 24, 1981	46 FR 57486
		MAR 30, 1983	48 FR 13168
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:125. Existing can surface coating operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing can surface coating operations.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for cans.

(2) "Applicator" means the mechanism or device used to apply the coating including but not limited to spray or roller.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "End sealing compound" means a synthetic rubber compound which is coated onto can ends and functions as a gasket when the end is assembled on the can.

(5) "Exterior base coating" means a coating applied to the exterior of a can to provide exterior protection to the metal and background for the lithographic or printing operation.

(6) "Interior base coating" means a coating applied by roller coater or spray to the interior of a can to provide a protective lining between the can metal and product.

(7) "Interior body spray" means a coating sprayed on the interior of the can body to provide a protective film between the product and the can.

(8) "Overvarnish" means a coating applied directly over ink to reduce the coefficient of friction, to provide gloss and to protect the finish against abrasion and corrosion.

(9) "Three (3) piece can side-seam spray" means a coating sprayed on the exterior and interior of a welded, cemented or soldered seam to protect the exposed metal.

(10) "Two (2) piece can exterior end coating" means a coating applied by roller coating or spraying to the exterior end of a can to provide protection to the metal.

(11) "Coating line" means a series of equipment or operations used to apply, dry, or cure any coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;
(b) Process storage;
(c) Applicators;
(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;
(e) Clean up operations;

(f) Leaks, spills and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOCs it receives from or distributes to each coating line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(12) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(13) "Classification date" means June 29, 1979.

(14) "VOCs 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. 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 VOCs net input. If the nature of any operation or design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 2. Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3. Standard for VOCs.

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

Section 4. Compliance.

(1) In all cases the design of any control system shall be subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance, unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and any other factors that may influence the performance of the system. If so requested by the cabinet, performance tests as specified by the cabinet shall be conducted in order to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the coatings the cabinet determines that other methods would be more appropriate. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) Compliance with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emission limits for longer averaging times may be accepted if approved by the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency shall be based on mass of VOC per volume of solids.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application for adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance by August 1, 1981.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract or the exempt coatings and any accompanying process change contracts shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6. Exemptions.

Any affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is:

(1) Less than 0.34 kg/l of coating (2.8 lb/gal), excluding water, or exempt solvent or both, delivered to the applicators associated with the sheet basecoat (exterior and interior) and overvarnish or two (2) piece can exterior (basecoat and overvarnish) coating lines;

(2) Less than 0.51 kg/l of coating (4.2 lb/gal), excluding water, or exempt solvent or both, delivered to the applicators associated with the two (2) and three (3) piece can interior body spray or two (2) piece can exterior end (spray or roll coat) coating lines;

(3) Less than 0.66 kg/l of coating (5.5 lb/gal), excluding water, or exempt solvent or both, delivered to the applicators associated with the three (3) piece can side-seam spray coating line;

(4) Less than 0.44 kg/l of coating (3.7 lb/gal), excluding water, or exempt solvent or both, delivered to the applicators associated with the end sealing compound coating line.

(5) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:

(a) Three (3) lb/hr actual emissions before add-on control;

(b) Fifteen (15) lb/day actual emissions before add-on control; or

(c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/yr before add-on control.

(6) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

Effective Date: June 24, 1992

Date Submitted to EPA	Date Approved by EPA	Federal Register

Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:130. Existing coil surface coating operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing coil surface coating operations.

Section 1.Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line for metal sheets or strips that come in rolls or coils.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to, roller or spray.

(3) "Quench area" means a chamber where the hot metal exiting the oven is cooled by either a spray of water or a blast of air followed by water cooling.

(4) "Prime coat" means the first film of coating applied in a two (2) coat operation which is responsible for protecting the surface from corrosion and providing for good adhesion of the topcoat.

(5) "Topcoat" means the final film of coating applied in a two (2) coat operation to obtain desired aesthetic effects.

(6) "Single coat" means a single film coating applied directly to the metal substrate omitting the prime coat.

(7) "Coating line" means a series of equipment or operations used to apply, dry, or cure any prime, topcoat, or single coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;
(b) Process storage;
(c) Applicators;
(d) Drying operations including, but not limited to, quench area, oven drying, baking, curing, and polymerization;
(e) Clean up operations;
(f) Leaks, spills, and disposal of VOCs;
(g) Processing and handling of recovered VOCs;
(h) For the purposes of determining compliance with this regulation, if any equipment or operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOCs it

receives from or distributes to each coating line;

(i) If any portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(8) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(9) "Classification date" means June 29, 1979.

(10) "VOCs 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. 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 purpose of determining VOCs net input. If the nature of any operation or design of equipment permits more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emission shall apply.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

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

Section 4.Compliance.

(1) In all cases the design of any control system shall be subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance, unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and any other factors that may influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the coatings, unless the cabinet determines that other methods would be more appropriate. Case-by-

case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(5) Compliance on one (1) coating line with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emission limits for longer averaging times may be accepted if approved by the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application for adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on June 29, 1979, shall have achieved final compliance by April 1, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract or the exempt coatings and any accompanying process change contracts shall be awarded no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be initiated no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6.Exemptions.

(1) Any affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is less than 0.31 kg/l of coating (2.6 lb/gal), excluding water or exempt solvent or both, delivered to the applicators associated with the prime, single or topcoat coating line.

(2) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to:

(a) Three (3) lb/hr actual emissions before add-on control;

(b) Fifteen (15) lb/day actual emissions before add-on control; or

(c) Ten (10) tons per year theoretical potential emissions based on design capacity (or maximum production) and 8760 hr/yr before add-on control.

(3) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		AUG 07, 1981	46 FR 40188
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:132. Existing miscellaneous metal parts and products surface coating operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 24); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing miscellaneous metal parts and products surface coating operations.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means a coating line located at job shops and original equipment manufacturing industries which apply coatings on metal substrates not subject to a regulation , other than 401 KAR 61:060, in this chapter.

(2) "Applicator" means the mechanism or device used to apply the coating, including but not limited to dipping, spraying, or flow-coating.

(3) "Flashoff area" means the space between the applicator and the oven.

(4) "Single coat" means only one (1) film of coating is applied to the metal substrate.

(5) "Prime coat" means the first of two (2) or more films of coating applied in an operation.

(6) "Topcoat" means the final film or series of films of coating applied in a two (2) coat (or more) operation.

(7) "Coating line" means a series of equipment or operations used to apply, dry, or cure any prime, topcoat or single coatings containing volatile organic compounds (VOCs). This shall include, but is not limited to:

(a) Mixing operations;

(b) Process storage;

(c) Applicators;

(d) Drying operations including, but not limited to, flashoff area evaporation, oven drying, baking, curing, and polymerization;

(e) Clean up operations;

(f) Leaks, spills and disposal of VOCs;

(g) Processing and handling of recovered VOCs;

(h) For the purposes of determining compliance with this regulation, if equipment or an operation is considered to be a part of more than one (1) coating line, its VOC emissions shall be assigned to each coating line of which it is a part proportionally to the throughput of VOC it receives from or distributes to each coating line;

(i) If a portion of the series of equipment or operations qualifies for an exemption according to Section 6 of this regulation, then that portion shall be considered to be a separate coating line.

(8) "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 of petroleum liquids which are subject to 401 KAR 59:050, 401 KAR 59:052, or 401 KAR 61:050.

(9) "Miscellaneous metal parts and products" means items including but not limited to:

(a) Large farm machinery (harvesting, fertilizing and planting machines, tractors, combines, etc.);

(b) Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

(c) Small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

(d) Commercial machinery (computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

(e) Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

(f) Fabricated metal products (metal covered doors, frames, etc.); and

(g) Any other industrial category not subject to a regulation, other than 401 KAR 61:060, in this chapter which coats metal parts or products.

(10) "Heat sensitive material" means materials which cannot be exposed to temperatures greater than eighty-two (82) to ninety-three (93)°C (180-200°F).

(11) "Air or forced air-dried items" means parts that are too large or too heavy for practical size ovens; parts that are sensitive to heat; parts to which heat sensitive materials are attached; or equipment assembled prior to top coating for specific performance or quality standards.

(12) "Outdoor or harsh exposure or extreme environmental conditions" means exposure to any of the following: year round weather conditions, temperatures consistently above ninety-five (95°) Celsius, detergents, scouring, solvents, corrosive atmospheres; and similar environmental conditions.

(13) "Classification date" means February 4, 1981.

(14) "VOCs 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. 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. If the nature of an operation or a design of equipment is such as to permit more than one (1) interpretation of this definition, the interpretation that results in the minimum value for allowable emissions shall apply.

(15) "Glass adhesive primer" means a primer applied to the body of a vehicle to etch the topcoat for the purpose of ensuring a positive bond with the adhesive used to secure the windshield and back glass to the vehicle in a manner consistent with federal safety regulations.

Section 2. Applicability.

(1) This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

(2) This regulation shall not apply to affected facilities which are subject to local air pollution control district regulations which have been approved by the cabinet and the U.S. EPA.

Section 3. Standard for VOCs.
No person shall cause, allow, or permit an affected facility to discharge into the atmosphere more than fifteen (15) percent by weight of the VOCs net input into the affected facility.

Section 4. Compliance.

(1) In all cases the design of a control system is subject to approval by the cabinet.

(2) Compliance with the standard in Section 3 of this regulation shall be demonstrated by a material balance unless the cabinet determines that a material balance is not possible. If a material balance is not possible, compliance shall be determined based upon an engineering analysis by the cabinet of: the control system design, control device efficiency, control system capture efficiency, and other factors that could influence the performance of the system. If requested by the cabinet, Method 25, which has been incorporated by reference in 401 KAR 50:015, shall be performed in order to determine the efficiency of the control device or demonstrate compliance with the standard. Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

(3) With the prior approval of the cabinet, the owner or operator may elect to effect all changes necessary to qualify for an exemption under Section 6 of this regulation.

(4) If deemed necessary by the cabinet, the cabinet shall obtain samples of the coatings used at an affected facility to verify that the coatings meet the requirements in Section 6 of this regulation. Appendix A to 40 CFR 60, Method 24, which has been incorporated by reference in 401 KAR 50:015, shall be used as applicable to determine compliance of the coatings unless the cabinet and the U.S. EPA determine that other methods would be more appropriate.

(5) Compliance on one (1) coating line with VOC emission limits shall be based on an averaging period not to exceed twenty-four (24) hours. If it is not economically or technically feasible to determine emissions on a daily basis, alternatives expressing emission limits for longer averaging times may be accepted if approved by the cabinet and the U.S. EPA as a SIP revision.

(6) The amount of exempt solvents shall be subtracted from the amount of coatings, just like water, with the ultimate value of interest being the mass of VOC per unit volume of coating less exempt solvent or water or both.

(7) Calculations to determine equivalency on one (1) coating line shall be based on mass of VOC per volume of solids.

(8) Daily records shall be maintained by the source for the most recent two (2) year period. These records shall be made available to the cabinet or the U.S. EPA upon request. The records shall include, but not be limited to, the following:

(a) Applicable regulation number;

(b) Application method and substrate type;

(c) Amount and type of adhesive, coating (including catalyst and reducer for multicomponent coatings), or solvent used at each point of application, including exempt compounds;

(d) The VOC content as applied in each adhesive, coating, or solvent;

(e) The date for each application of adhesive, coating, or solvent;

(f) The amount of surface preparation, clean-up, or wash-up solvent (including exempt compounds) used and the VOC content of each; and

(g) Oven temperature, if applicable.

Section 5. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on February 4, 1981, shall have achieved final compliance by December 31, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than nine (9) months after the date the affected facility becomes subject to this regulation.

(b) Award a contract for the control system or for the exempt coatings and any accompanying process change no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(c) Initiate on-site construction or installation of emission control equipment or process changes for exempt coatings no later than thirteen (13) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment or process changes for exempt coatings shall be completed no later than seventeen (17) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than eighteen (18) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6. Exemptions.

(1) An affected facility shall be exempt from Section 3 of this regulation if the VOC content of the coating is:

(a) Less than 0.52 kg/l of coating (4.3 lb/gal), excluding water or exempt solvent or both, delivered to applicators associated with clear coat;

(b) Less than 0.42 kg/l of coating (3.5 lb/gal), excluding water or exempt solvent or both, delivered to applicators associated with air or forced air-dried items or items subject to outdoor or harsh exposure or extreme environmental conditions;

(c) Less than 0.36 kg/l of coating (3.0 lb/gal), excluding water or exempt solvent or both, delivered to applicators associated with color coat or first coat on untreated ferrous substrate; or

(d) Less than 0.05 kg/l of powder coating (0.4 lb/gal) delivered to applicators associated with no or infrequent color change, or a small number of colors applied.

(2) The surface coating of the following metal parts and products are exempt from this regulation:

(a) 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;

(b) Automobile refinishing; and

(c) Customized top coating of automobiles and trucks, if production is less than thirty-five (35) vehicles per day.

(3) An affected facility shall be exempt from this regulation if the total VOC emissions from all affected facilities subject to this regulation are less than or equal to thirty (30) tons per year.

(4) Low-use coatings shall be exempt from Section 3 of this regulation if the plantwide consumption of these coatings in the aggregate is less than or equal to fifty-five (55) gallons during the previous twelve (12) months.

(5) Glass adhesive primer with VOC content equal to or less than 5.1 lb/gal of glass adhesive primer excluding water or exempt solvent or both, shall be exempt from this regulation.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	FEB 05, 1981	NOV 24, 1981	46 FR 57486
1st Revision	SEP 28, 1981	MAR 30, 1983	48 FR 13168
2nd Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:135. Selected existing petroleum refining processes and equipment.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS Chapter 224
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of hydrocarbon emissions from selected existing petroleum refining processes and equipment.

Section 1.Applicability.

The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below which is located:

(1) In an urban county designated nonattainment for ozone under 401 KAR 51:010; or

(2) In any county which is designated nonattainment or unclassified under 401 KAR 51:010 and is a part of a major source of volatile organic compounds.

Section 2.Definitions.

(1) "Affected facility" means vacuum producing systems and process unit turnarounds associated with a petroleum refinery.

(2) "Vacuum producing systems" means equipment which produces a partial vacuum in a vessel.

(3) "Process unit turnaround" means the shutting down, depressurization, and purging of a process unit or vessel.

(4) "Classification date" means the effective date of this regulation.

Section 3.Standard for Hydrocarbons.

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

(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 cabinet.

(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 cabinet until the pressure in the process unit is less than five (5) psig.

Section 4.Monitoring and Reporting Requirements.

(1) The owner or operator shall:

(a) Keep a record of each process unit turnaround;

(b) Record the approximate hydrocarbon concentration when the hydrocarbons were first discharged to the atmosphere;

(c) Record the approximate total quantity of hydrocarbons emitted to the atmosphere.

(2) The owner or operator shall retain these records for at least two (2) years and submit them to the cabinet upon request.

Section 5.Compliance Timetable.

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

(1) Submit a final control plan for achieving compliance with this regulation no later than September 1, 1979.

(2) Award the control device contract no later than December 1, 1979.

(3) Initiate on-site construction or installation of emissions control equipment no later than July 1, 1980.

(4) On-site construction or installation of emission control equipment shall be completed no later than February 1, 1981.

(5) Final compliance shall be achieved no later than May 1, 1981.

Effective Date: June 29, 1979

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092

401 KAR 61:137. Leaks from existing petroleum refinery equipment.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 21); 42 USC 7401 et. seq.; 42 USC 7407; 42 USC 7408; 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from leaks from existing petroleum refinery equipment.

Section 1.Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means each individual component within a petroleum refinery complex that could potentially leak volatile organic compounds (VOCs) to the atmosphere.

(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.

(3) "A petroleum refinery complex" means a facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, rearrangement or reforming of unfinished petroleum derivatives.

(4) "Leak" means the presence of a VOC concentration exceeding 10,000 ppm if tested in the manner referenced in Section 5 of this regulation.

(5) "Gas service" means that the VOC is gaseous at conditions that prevail in the component during normal operations.

(6) "Classification date" means February 4, 1981.

Section 2.Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3.Standard for VOCs.

The owner or operator of an affected facility shall:

(1) If an affected facility within the petroleum refinery complex is found to be leaking, repair the leak within fifteen (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).

(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 sealing device may be removed only when a sample is being taken. This requirement shall not apply to safety pressure relief valves.

Section 4.Monitoring and Reporting Requirements.

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

(1) The refinery operator shall perform component monitoring using the method referenced in Section 5 of this regulation as follows:

(a) Monitor with a portable VOC detection device one (1) time per year (annually) pump seals, pipeline valves in liquid service, and process drains.

(b) Monitor with a portable VOC detection device four (4) times per year (quarterly) compressor seals, pipeline valves in gas service, and pressure relief valves in gas service.

(c) Monitor visually fifty-two (52) times per year (weekly) pump seals.

(d) No individual monitoring is necessary for pressure relief valves in liquid service and pipeline flanges.

(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 cabinet.

(3) If 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) If a relief valve operates and venting to the atmosphere occurs, the operator shall monitor this 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.

(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 (2) years after the inspection is completed.

(6) After quarterly monitoring has been performed the refinery operator shall submit a report to the cabinet listing all leaks that were located but not repaired within the fifteen (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 fifteen (15) days shall be repaired during the next scheduled turnaround. If the cabinet requests it, the owner or operator shall demonstrate to the cabinet's satisfaction why the repairs could not be completed within the initial fifteen (15) day period. If the leak is unable to be brought into compliance, a variance shall be requested and obtained on an individual basis. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

Section 5.Test Methods and Procedures.

(1) Except as provided for in 401 KAR 50:045 , Appendix A to 40 CFR 60, Method 21, which has been incorporated by reference in 401 KAR 50:015, shall be used to determine compliance with the standard prescribed in Section 3 and monitoring requirements in Section 4 of this regulation.

(2) The owner or operator may elect to use alternate monitoring methods if it is demonstrated to the cabinet's satisfaction that the alternate methods shall achieve equivalent control efficiency.

Section 6.Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect February 4, 1981, shall have achieved final compliance by January 1, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than three (3) months after the date the affected facility becomes subject to this regulation.

(b) Award the control system contract no later than five (5) months after the date the affected facility becomes subject to this regulation.

(c) Initiate on-site construction or installation of emission control equipment no later than seven (7) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment shall be completed no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than twelve (12) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 7.Modifications.

(1) If, after at least two (2) complete annual checks, the refinery operator determines that modifications of the monitoring requirements are in order, he may request in writing to the cabinet that a revision be made. The submittal shall include data that have been developed to justify modifications in the monitoring schedule.

(2) If the cabinet finds an excessive number of leaks during an inspection, or if the refinery operator found an excessive number of leaks in a given area during scheduled monitoring, the cabinet shall increase the required frequency of operator inspections for that part of the facility.

Effective Date: June 24, 1992

Date Submitted Date Approved Federal

	to EPA	by EPA	Register
Original Reg	FEB 05, 1981	NOV 24, 1981	46 FR 57486
		MAR 30, 1983	48 FR 13168
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:140. Existing by-product coke manufacturing plants.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. This regulation provides for the control of emissions from existing by-product coke manufacturing plants.

Section 1.Applicability.

The provisions of this regulation are applicable to each affected facility commenced before the classification date defined below.

Section 2.Definitions.

As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010 and 401 KAR 61:005.

(1) "Affected facility" means a by-product coke oven battery.

(2) "Classification date" means April 9, 1972.

(3) "Coke oven battery" means a number of slot-type coking chambers arranged side by side.

(4) "Charging" means the process of conveying coal and dropping it into a coke oven through the charging holes or ports located on top of the oven.

(5) "Coking" means the destructive distillation of coal in the absence of oxygen.

(6) "Coke" means a solid form of carbon resulting from the destructive distillation of coal.

(7) "Coke oven" means a refractory lined, heated, slot-type chamber in which coke is produced.

(8) "Chuck door" means the port for the leveling bar.

(9) "Leveling bar" means a structured steel bar pushed back and forth horizontally through the chuck door and used to eliminate the peaks in the coal charged in the oven.

(10) "Collecting main" means the horizontal manifold connected to the standpipes used to conduct the volatile materials to the by-products plant.

(11) "Larry car" means the apparatus used to charge coal into an empty oven. It is also known as a charging car.

(12) "Pusher machine" means a large apparatus which travels on rails alongside the battery and used to remove doors and push coke from the ovens.

(13) "Gooseneck" means a short curved cast iron refractory lined pipe that conveys the volatiles from the standpipe to the collector main.

(14) "Standpipe" means a short vertical refractory lined pipe which conducts volatiles from an oven through the gooseneck to the collector main.

(15) "Quench" means the process whereby water is used to cool the hot coke.

(16) "Quenching car" mean an apparatus used to convey hot coke to the quenching tower. It is also known as a wharf car.

(17) "Charging period" means for larry car charging systems, the period of time commencing when the first hopper gate is opened and ending when the last topside port lid is replaced. The charging period includes the period of time during which the port lid is reopened in order to sweep spilled coal into the oven.

(18) "Total coke oven doors" means push and coke side doors with the chuck doors considered to be part of the push side doors.

Section 3.Standards for Particulate Matter.

No person subject to the provisions of this regulation shall cause, suffer or allow particulate matter to be discharged to the atmosphere from each affected facility or operation of a by-product coke oven battery except as follows:

(1) Coke oven charging. No visible emissions during the charging cycle from the control equipment, the charging ports, the larry cars or the open chuck door, except for an average of twenty-five (25) seconds of any visible emissions (excluding water vapor) per charge, averaged over five (5) consecutive charges.

(2) Battery topside leaks. No more than five (5) percent of the charging ports and ten (10) percent of the standpipes on operating ovens shall be leaking (exhibiting visible emissions except for steam or nonsmoking flame) at any time.

(3) Doors. No visible emission, except nonsmoking flame, from more than ten (10) percent of the total coke oven doors on a battery.

(4) Combustion stack. No visible emission (other than water mist or vapor) shall exceed twenty (20) percent opacity from any coke oven combustion stack.

(5) Pushing. Emissions shall be controlled such that:

(a) No visible emissions, as observed at fifteen (15) second intervals, shall exceed twenty (20) percent opacity from the time the oven door removal has been completed until the hot car is inside the quench tower except for ten (10) percent of the total number of observations recorded.

(b) The emission rate from the control device shall not exceed 0.030 pounds of filterable particulate per ton of coke pushed, averaged over a number of pushes.

(6) Quenching.

(a) No visible emissions, except water vapor or mist, shall exceed an opacity of twenty (20) percent during the quenching operations.

(b) No process water shall be used for quenching and the make-up water shall not contain total dissolved solids concentration in excess of 750 mg/liter.

(c) The quench tower draft shall be adequate to ensure that all visible quenching gases exit through the quench tower baffles.

Section 4.Standard for Sulfur Dioxide.

Coke oven gas shall not be burned or discharged unless it contains a concentration of sulfur compounds (expressed as sulfur dioxide) as determined by Appendix A of this regulation that will result in emissions of no more than ninety-five (95) pounds of equivalent sulfur dioxide per million cubic feet of coke oven gas produced. Included in this are all sulfur compounds, expressed as sulfur dioxide, emitted from sulfur recovery equipment used to process the sulfur compounds removed from coke oven gas.

Section 5.Test Methods and Procedures.

(1) Except as provided in 401 KAR 50:045, and subsections (2) and (3) of this section, performance tests used to demonstrate compliance with Sections 3 and 4 of this regulation shall be conducted according to the following methods (filed by reference in 401 KAR 50:015):

(a) Reference Method 9 for combustion stack opacity and pushing operation, except for time averaging and number of observations.

(b) Method 209 C from the Standard Methods for the Evaluation of Water and Wastewater, Fifteenth (15th) Edition, 1980, for determining total dissolved solids in make-up water.

(2) Determination of sulfur in coke oven gas. Cleaned coke oven gas and any Claus plant tail gas shall be sampled for hydrogen sulfide, carbonylsulfide, and carbon disulfide by gas chromatograph separation and flame photometric or thermal conductivity detection. Alternate methods may be approved by the cabinet. Clean gas and tail gas flow shall be measured by in-line continuous orifice, venturi or elbow tap flow meters. Compliance testing shall consist of simultaneous measurement of sweet (clean) coke oven gas and sulfur recovery tail gas concentrations and flows. Four (4) samples per hour shall be acquired for concentration and flows during a four (4) hour test period. Compliance shall be determined from the arithmetic average of the sixteen (16) values calculated by using the formula in Appendix A of this regulation.

(3) Determination of visible emissions during the oven charging period.

(a) Principle. The visible emissions emitted from charging systems and oven ports are to be determined visually by an observer who is familiar with coke oven battery operations. Observations for five (5) consecutive charges are to be recorded unless the standard is exceeded before the five (5) charges are completed.

(b) Procedure. The observer is to stand such that he has a good view of the oven being charged. Upon observing any visible emission an accumulative stopwatch is started. The watch is stopped when the visible emission stops and is restarted when the visible emission reappears. The observer is to continue this procedure for the entire charging period. Visible emissions may occur simultaneously from several points during a charge; e.g., from around all drop sleeves at the same time. In this case, the visible emissions are timed collectively, not independently. Also, visible emissions may start from one (1) source immediately after another source stops. This will be timed as one (1) continuous visible emission. The following visible emissions are not to be timed:

1. Visible emissions from burning coal spilled on top of the oven or oven lid during charging;

2. Visible emissions that drift from the top of a larry car hopper, but have already been timed as a visible emission from the drop sleeve below the hopper.

(c) Recording charging emissions. The time recorded on the stop watch is the total time that visible emissions were observed during the charge.

(4) Determination of visible emissions from coke oven topside leaks.

(a) Principle. The visible emissions produced from leaking off-take systems, and topside lids are determined visually by an observer who is familiar with coke oven battery operations.

(b) Procedure. The observer shall inspect the coke oven battery by traveling the length of the battery topside at a steady pace, pausing only to make appropriate entries on the inspection report. Travel at a normal walking pace one (1) length of the coke oven battery shall constitute a run taking approximately four (4) minutes (for a seventy (70) oven battery) to complete. In performing a run to determine oven lid leaks, the observer shall walk the centerline of the battery looking far enough ahead (two (2) or four (4) ovens) of his travel to easily see the oven lids. During one (1) run, the observer shall record the number of total visible emissions from oven lids, and during another run the observer shall determine visible emissions from off-take systems, and collection mains, from the battery centerline or an alternative location (e.g. a catwalk). The total number of leaks from the topside shall be recorded on the inspection report sheet. The following emissions shall not be recorded:

1. Visible emissions from lids and standpipe caps that are opened during a decarbonization period (not to exceed three (3) ovens at any one (1) time) or charging period.

2. Steam emissions; this includes steam caused by the vaporization of wet luting material.

(c) Determination of percent topside leaks. The total number of leaks shall be observed during a run and then the percent of charge port and standpipe leaks shall be determined by using the formulas given in Appendix B to this regulation.

(5) Door inspection procedure.

(a) Observation. The inspector shall make his observations of door emissions from a location as close to the battery as safety and visibility conditions permit, but generally outside of the pusher machine or hot car tracks. The inspector may move to a closer observation point to determine the source of an emission. The inspector shall start the inspection procedure with an oven at either end of the battery and on either the push side or the coke side of the battery. The inspector shall observe and record any visible emission from the door. Visible emissions from the sealing edge around the perimeter of a door, or, in the case of the pusher side, from the door and the chuck door will be considered as door emissions. Visible emissions from structural leaks, such as buckstay or lintel leaks, will not be considered as door emissions. The inspector will then move to the adjacent door and check for door emissions in a like manner. The inspector will continue this procedure down the entire length of the battery. If a temporary machine obstruction occurs blocking his view of a series of ovens, he may bypass those ovens and continue down the remainder of the battery, returning to check the bypassed ovens when he has completed that side of the battery. After the inspector has observed the doors on one (1) side of a battery, he shall then proceed directly to the opposite side of the battery and again start at one (1) end of the battery repeating the same procedure as for the previous side.

(b) Determination of percent leaking doors. The total number of leaking doors shall be observed on both sides of the coke oven battery and then the percent of leaking doors shall be determined using the formula given in Appendix C to this regulation.

(6) Determination of quenching visible emissions. The inspector shall make his observations of quenching emissions from a position where he can observe the quench plume. The inspector observes all emissions from the time the wharf car enters the quench tower until the time it leaves the tower after the quench. The maximum opacity of the plume observed

against a contrasting background is recorded. If water vapor or mist is present, the opacity is determined after the water vapor or mist is no longer visible in the plume.

(7) Determination of pushing visible emissions. The inspector shall make his observation from a position where he can observe emissions from the coke oven door and from the hot car as the emissions rise above the collector main. Emissions shall be observed from the time the door removal has been completed until the hot car has entered the quench tower.

Section 6.Compliance Timetable.

The owner or operator shall have demonstrated compliance with the standard in Section 3(5)(b) of this regulation on or before December 31, 1980. Compliance with the standard in Section 3(2) of this regulation shall be demonstrated on or before December 31, 1982. Compliance with all other provisions of this regulation shall have been demonstrated on or before June 6, 1979.

[SIP Compilation Table Before Appendices]

Effective Date: September 4, 1986

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		OCT 31, 1980	45 FR 72153
		DEC 24, 1980	45 FR 84999
1st Revision	DEC 09, 1982	DEC 04, 198	51 FR 43742
2nd Revision	SEP 19, 1986	JAN 08, 1988	53 FR 501
		MAY 04, 1989	54 FR 19169

APPENDIX A TO 401 KAR 61:140

Formula for determining sulfur compounds (expressed as SO_2) contained in coke oven gas.

$$\text{Sulfur compounds} \quad \text{coke oven gas} = \frac{C_{swg} V_{swg} + C_{tg} V_{tg}}{V_{fg}}$$

Where:

C_{swg} =the concentration of total reduced sulfur in the sweet gas expressed as SO_2;

C_{tg} = the concentration of total reduced sulfur in the tail gas expressed as SO_2; and

V_{swg}, V_{tg}, V_{fg} = flow rates of sweet gas, tail gas and foul gas, respectively.

APPENDIX B TO 401 KAR 61:140

Formula for determining percent charge port leaks.

$$\text{Percent charge port leaks} = \frac{(\text{total number of charging port leaks observed during run})}{(\text{number of charging ports / oven})} \times 100$$

Formula for determining percent standpipe leaks.

$$\text{Percent standpipe leaks} = \frac{\text{total number of standpipe leaks observed during run}}{\text{number of operating ovens} \times \text{standpipes / oven}} \times 100$$

Visible emissions occurring during the decarbonization period as provided in Section 5(4)(b)1 of this regulation shall not be included in the formulas above.

APPENDIX C TO 401 KAR 61:140

Formula for determining the percent door leaks.

$$\textit{Door leaks}\ (\%) = \frac{(\textit{total number of leaking doors observed})}{(2 \times \textit{number of operating ovens the battery})} \times 100$$

401 KAR 61:145. Existing petroleum refineries.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS Chapter 224
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing petroleum refineries.

Section 1. Applicability.

The provisions of this regulation shall apply to each affected facility commenced before the classification date defined below.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Affected facility" means sulfur recovery units, fluid catalytic cracking unit regenerators, fluid catalytic cracking unit incinerator-waste heat boilers and fuel gas combustion devices at a petroleum refinery in any county classified VA with respect to sulfur dioxide.

(2) "Petroleum refinery" means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or reforming of unfinished petroleum derivatives.

(3) "Petroleum" means the crude oil removed from the earth and the oils derived from tar sands, shale and coal.

(4) "Process gas" means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(5) "Fuel gas" means any gas which is generated by a petroleum refinery process unit and which is combusted, including any gaseous mixture of natural gas and fuel gas which is combusted.

(6) "Process upset gas" means any gas generated by a petroleum refinery process unit as a result of startup, shutdown, upset or malfunction.

(7) "Refinery process unit" means any segment of the petroleum refinery in which a specific processing operation is conducted.

(8) "Fuel gas combustion device" means any equipment, such as process heaters, boilers and flares used to combust fuel gas, but does not include fluid coking unit and fluid catalytic cracking unit incinerator-waste heat boilers, facilities combusting coke oven gas in a by-product coke manufacturing plant, or facilities in which gases are combusted to produce sulfur or sulfuric acid.

(9) "Classification date" means June 11, 1973 for any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device; October 4, 1976 for any sulfur recovery unit; and June 6, 1979 for fluid catalytic cracking unit incinerator-waste heat boilers.

Section 3. Standard for Sulfur Dioxide.

(1) No owner or operator subject to the provisions of this regulation shall burn in any fuel gas combustion device any fuel gas which contains hydrogen sulfide in excess of 230 mg/dscm (ten-hundredths (0.10) gr/dscf), except as provided in subsection (2) of this section. The combustion of process upset gas in a flare, or the combustion in a flare of process gas or fuel gas which is released to the flare as a result of relief valve leakage, is exempt from this section.

(2) The owner or operator may elect to treat the gases resulting from the combustion of fuel gas in a manner which limits the release of sulfur dioxide to the atmosphere if it is shown to the satisfaction of the cabinet that this prevents sulfur dioxide emissions as effectively as compliance with the requirements of subsection (1) of this section.

(3) No owner or operator subject to the provisions of this regulation shall discharge or cause the discharge into the atmosphere from any Claus sulfur recovery plant any gases containing in excess of:

(a) 0.025 percent by volume of sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by an oxidation control system, or a reduction control system followed by incineration; or

(b) 0.030 percent by volume of reduced sulfur compounds and 0.0010 percent by volume of hydrogen sulfide calculated as sulfur dioxide at zero percent oxygen on a dry basis if emissions are controlled by a reduction control system not followed by incineration.

Section 4. Monitoring and Reporting.

(1) For any fluid catalytic cracking unit catalyst regenerator which utilizes an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the conversion factors used to convert monitored data (ppm) into units of the standard (lb/hr), the data used to calculate the conversion factor and the hourly emission rate in pounds per hour of sulfur dioxide.

(2) For the purpose of reports under 401 KAR 61:005 periods of excess emissions that shall be reported for sulfur dioxide are defined as follows:

(a) Any three (3) hour period during which the average concentration of hydrogen sulfide in any fuel gas combusted in any fuel gas combustion device subject to Section 3(1) of this regulation exceeds 230 mg/dscm (ten-hundredths (0.10) gr/dscf), if compliance is achieved by removing hydrogen sulfide from the fuel gas before it is burned; or any three (3) hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any fuel gas combustion device subject to Section 3(2) of this regulation exceeds the level specified in Section 3(2) of this regulation if compliance is achieved by removing sulfur dioxide from the combusted fuel gases.

(b) Any twelve (12) hour period during which the average concentration of sulfur dioxide in the gases discharged into the atmosphere from any Claus sulfur recovery plant subject to Section 3(3) of this regulation exceeds 250 ppm at zero percent oxygen on a dry basis if compliance with Section 3(3) of this regulation is achieved through the use of an oxidation control system or a reduction control system followed by incineration; or any twelve (12) hour period during which the average concentration of hydrogen sulfide or reduced sulfur compounds in the gases discharged into the atmosphere of any Claus sulfur plant subject to Section 3(3) of this regulation exceeds ten (10) ppm or 300 ppm, respectively, at zero percent oxygen and on a dry basis if compliance is achieved through the use of a reduction control system not followed by incineration.

(c) Any six (6) hour period during which the average emissions (arithmetic average of six (6) contiguous one (1) hour periods) of sulfur dioxide as measured by a continuous monitoring system for a fluid catalyst cracking unit exceed 640.0 pounds per hour.

Section 5. Test Methods and Procedures (filed by reference in 401 KAR 50:015).

(1) For the purpose of determining compliance with Section 3(1) and (2) of this regulation, Reference Method 11 shall be used to determine the concentration of hydrogen sulfide and Reference Method 6 shall be used to determine the concentration of sulfur dioxide.

(a) If Reference Method 11 is used, the gases sampled shall be introduced into the sampling train at approximately atmospheric pressure. Where refinery fuel gas lines are operating at pressures substantially above atmosphere, this may be accomplished with a flow control valve. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line. The minimum sampling time shall be ten (10) minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two (2) samples of equal sampling time shall constitute one (1) run. Samples shall be taken at approximately one (1) hour intervals. For most fuel gases, sample times exceeding twenty (20) minutes may result in depletion of the collecting solution, although fuel gases containing low concentrations of hydrogen sulfide may necessitate sampling for longer periods of time.

(b) If Reference Method 6 is used, 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 sulfur dioxide concentration by Reference Method 6 shall be the same as for determining volumetric flow rate by Reference Method 2. The sampling point in the duct for determining sulfur dioxide concentration by Reference Method 6 shall be at the centroid of the cross section if the cross-sectional area is less than five (5) square meters (fifty-four (54) square feet) or at a point no closer to the walls than one (1) meter (thirty-nine (39) inches) if the cross-sectional area is five (5) square meters or more and the centroid is more than one (1) 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 (10) minutes and the minimum sampling volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two (2) samples of equal sampling time shall constitute one (1) run. Samples shall be taken at approximately one (1) hour intervals.

(2) For the purpose of determining compliance with Section 3(3) of this regulation, Reference Method 6 shall be used to determine the concentration of sulfur dioxide and Reference Method 15 shall be used to determine the concentration of sulfur dioxide and reduced sulfur compounds.

(a) If Reference Method 6 is used, the procedure outlined in subsection (1)(b) of this section shall be followed except that each run shall span a minimum of four (4) consecutive hours of continuous sampling. A number of separate samples may be taken for each run, provided the total sampling time of these samples adds up to a minimum of four (4) consecutive hours. Where more than one (1) sample is used, the average sulfur dioxide concentration for the run shall be calculated as the time weighted average of the sulfur dioxide concentration for each sample according to the formula in Appendix A of this regulation.

(b) If Reference Method 15 is used, each run shall consist of sixteen (16) samples taken over a minimum of three (3) hours. The sampling point shall be at the centroid of the cross section of the duct if the cross-sectional area is less than five (5) square meters (fifty-four (54) square feet) or at a point no closer to the walls than one (1) meter (thirty-nine (39) inches) if the cross-sectional area is five (5) square meters or more and the centroid is more than one (1) meter from the wall. To insure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least three (3) liters/minute (one-tenth (0.1) cfm). The sulfur dioxide equivalent for each run shall be calculated as the arithmetic average of the sulfur dioxide equivalent of each sample during the run. Reference Method 4 shall be used to determine the moisture content of the gases. The sampling point for Reference Method 4 shall be adjacent to the sampling point for Reference Method 15. The sample shall be extracted at a rate proportional to the gas velocity at the sampling point. Each run shall span a minimum of four (4) consecutive hours of continuous sampling. A number of separate samples may be taken for each run provided the total sampling time of these samples adds up to a minimum of four (4) consecutive hours. Where more than one (1) sample is used, the average moisture content for the run shall be calculated as the time weighted average of the moisture content of each sample according to the formula in Appendix B of this regulation.

Section 6. Compliance Timetable.

(1) The owner or operator of a sulfur recovery plant shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with Section 3(3) of this regulation no later than September 1, 1979.

(b) Award the control system contract no later than December 1, 1979.

(c) Initiate on-site construction or installation of emission control equipment by October 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than May 1, 1981.

(e) Final compliance shall be achieved no later than July 1, 1981.

(2) The owner or operator of a fuel gas combustion device shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with Section 3(1) of this regulation no later than August 1, 1980.

(b) Purchase control equipment no later than September 1, 1980.

(c) Initiate on-site construction or installation of emissions control equipment by October 1, 1980.

(d) On-site construction or installation of emission control equipment shall be completed no later than August 1, 1981.

(e) Final compliance shall be achieved no later than October 1, 1981.

(3) The owner or operator shall be required to demonstrate compliance with all other provisions of this regulation no later than June 6, 1979.

[SIP Compilation Table After Appendices]

APPENDIX A TO 401 KAR 61:145
Time weighted average of SO_2 concentration

$$C_R = \sum_{i=1}^{N} C_{Si} \frac{t_{Si}}{T}$$

Where:

C_R = SO_2 concentration for the run.

N = Number of samples.

C_{Si} = SO_2 concentration for sample i.

t_{Si} = Continuous sampling time of sample i.

T = Total continuous sampling time of all N samples.

APPENDIX B TO 401 KAR 61:145
Equation for the time weighted average of the moisture content.

$$B_{wo} = \sum_{i=1}^{N} B_{Si} \frac{t_{si}}{T}$$

Where:

B_{wo} = Proportion by volume of water vapor in the gas stream for the run.

N = Number of samples.

B_{Si} = Proportion by volume of water vapor in the gas stream for the sample i.

t_{si} = Continuous sampling time for sample i.

T = Total continuous sampling time of all N samples.

Effective Date: January 7, 1981

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	JUN 29, 1979	JAN 25, 1980	45 FR 6092
		OCT 31, 1980	45 FR 72153
		APR 03, 1981	46 FR 20171
1st Revision	JAN 19, 1981	MAR 22, 1983	48 FR 11945

401 KAR 61:150. Existing synthesized pharmaceutical product manufacturing operations.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 42 USC 7401 et. seq., 42 USC 7407, 42 USC 7408, 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing synthesized pharmaceutical product manufacturing operations.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means operations involved in the manufacture of pharmaceutical products by chemical synthesis, but does not include fermentation, extraction, or formulation and packaging.

(2) "Extraction" means the manufacture of botanical and biological products by the extraction of organic chemicals from vegetative materials or animal tissues.

(3) "Fermentation" means the production and separation of medicinal chemicals such as antibiotics and vitamins from microorganisms.

(4) "Formulation and packaging" means the formulation of bulk pharmaceuticals into various dosage forms such as tablets, capsules, injectable solutions, ointments, etc. that can be taken by the patient immediately and in accurate amount.

(5) "Classification date" means February 4, 1981.

(6) "kPa" means kilopascals.

(7) "psi" means pounds per square inch.

Section 2. Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3. Standard for VOCs.

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:

(1) (a) Each vent from reactors, distillation operations, crystallizers, centrifuges, and vacuum dryers that emit 6.8 kg/day (fifteen (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 paragraph (b) of this subsection.

(b) If surface condensers are used, the condenser outlet gas temperature shall not exceed the following temperatures (degrees Celsius) if condensing VOCs with the respective minimum vapor pressures (kilopascals). All vapor pressures are measured to twenty (20) degrees Celsius.

1. Negative twenty-five (-25°C); forty (40) kPa (5.8 psi);
2. Negative fifteen (-15°C); twenty (20) kPa (2.9 psi);
3. Zero (0°C); ten (10) kPa (1.5 psi);
4. Ten (10°C); seven (7) kPa (1.0 psi); and
5. Twenty-five (25°C), 3.5 kPa (0.5 psi).

(2)(a) For air dryers and production equipment exhaust systems that emit 150 kg/day (330 lbs./day) or more of VOCs, emissions shall be reduced ninety (90) percent.

(b) For air dryers and production equipment exhaust systems that emit less than 150 kg/day (330 lbs/day), emissions shall be reduced to fifteen (15) kg/day (thirty- three (33) lbs/day).

(3)(a) For storage tanks storing VOCs with a vapor pressure greater than twenty-eight (28) kPa (4.1 psi) at twenty (20°C) , one (1) liter of displaced vapor shall be allowed to be released to the atmosphere for every ten (10) liters transferred (i.e., a ninety (90) percent effective vapor balance or equivalent) on truck or rail car delivery to all tanks greater than 7,500 l (2,000 gal) capacity unless the tanks are equipped with floating roofs, vapor recovery systems, or their equivalent. This requirement does not apply to transfer of VOCs from one (1) in-plant location to another.

(b) For tanks storing VOCs with a vapor pressure greater than ten (10) kPa (1.5 psi) at twenty (20°C), the pressure or vacuum conservation vents shall be set at plus or minus 0.2 kPa, unless more effective air pollution control is used.

(4) All centrifuges containing VOCs, rotary vacuum filters processing liquid containing VOCs and other filters having an exposed liquid surface if 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 twenty (20)° C.

(5) All in-process tanks containing VOC at any time shall have covers which shall be closed except for short periods when production, sampling, maintenance, or inspection procedures require operator access.

(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 fifteen (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 fifteen (15) days shall be repaired during the next scheduled turnaround. If the cabinet requests it, the owner or operator shall demonstrate to the cabinet's satisfaction why the repairs could not be completed within the initial fifteen (15) day period. If the leak is unable to be brought into compliance, a variance shall be requested and obtained on an individual basis. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision. Leak detection or maintenance and repair procedures shall include maintaining a survey log identifying when the leak occurred and reporting every ninety (90) days those leaks not repaired after fifteen (15) days. The operator shall retain the survey log for two (2) years after the inspection is completed.

Section 4. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on February 4, 1981, shall have achieved final compliance by December 31, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than three (3) months after the date the affected facility becomes subject to this regulation.

(b) Award the control system contract no later than five (5) months after the date the affected facility becomes subject to this regulation.

(c) Initiate on-site construction or installation of emissions control equipment no later than seven (7) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment shall be completed no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than twelve (12) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 5. Compliance Procedures.

Compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency, and other factors that could influence the performance of the system. If requested by the cabinet, performance tests as specified by the cabinet shall be conducted to determine the efficiency of the control device.

Section 6. Monitoring Requirements.

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

(1) For carbon adsorbers, a monitoring device connected to an alarm device, which indicates carbon bed breakthrough;

(2) For condensers, a temperature sensing device located in the exit gas stream;

(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

(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.

Effective Date: June 24, 1992

Date Submitted Date Approved Federal

	to EPA	by EPA	Register
Original Reg	FEB 05, 1981	NOV 24, 1981	46 FR 57486
		MAR 30, 1983	48 FR 13168
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:155. Existing pneumatic rubber tire manufacturing plants.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 42 USC 7401 et. seq., 42 USC 7407, 42 USC 7408, 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing pneumatic rubber tire manufacturing plants.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(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) "Manufacture of pneumatic rubber tires" means the mass production of pneumatic rubber tires.

(3) "Pneumatic rubber tires" means agricultural, airplane, industrial, mobile home, light and medium duty truck, and passenger vehicle tires of bead diameter up to .51 m (twenty (20) in) and cross-sectional dimension up to .33 m (12.8 in).

(4) "Classification date" means February 4, 1981.

(5) "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 2. Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3. Standard for VOCs.

The owner or operator of an affected facility shall install, maintain and operate capture and control equipment to achieve the following:

(1) Emissions from undertread cementers, tread end cementers and bead dip tanks shall be reduced by at least seventy-six (76) percent; and

(2) Emissions from green tire spray booths shall be reduced by at least eighty- one (81) percent. This requirement shall not apply to green tire spray booths using water based sprays.

Section 4. Compliance.

Compliance shall be determined based upon an engineering analysis by the cabinet of the control system design, control device efficiency, control system capture efficiency and any other factors that may influence the performance of the system. If requested by the cabinet, performance tests specified by the cabinet shall be conducted to determine the efficiency of the control device.

Capture efficiency shall be determined by procedures specified in 401 KAR 50:047.

Section 5. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on February 4, 1981, shall have achieved final compliance by December 31, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) A final control plan for achieving compliance with this regulation shall be submitted no later than three (3) months after the date the affected facility becomes subject to this regulation.

(b) The control system contract shall be awarded no later than five (5) months after the date the affected facility becomes subject to this regulation.

(c) On-site construction or installation of emission control equipment shall be initiated no later than seven (7) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment shall be completed no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than twelve (12) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Effective Date: June 24, 1992

	Date Submitted to EPA	Date Approved by EPA	Federal Register
Original Reg	FEB 05, 1981	NOV 24, 1981	46 FR 57486
		MAR 30, 1983	48 FR 13168
1st Revision	OCT 20, 1992	JUN 23, 1994	59 FR 32343

401 KAR 61:160. Existing perchloroethylene dry cleaning systems.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120, 42 USC 7401et. seq., 42 USC 7407, 42 USC 7408, 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from existing perchloroethylene dry cleaning systems.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means dry cleaning systems which use perchloroethylene.

(2) "Dry cleaning system" means a series of equipment or operations which includes, but is not limited to washer, dryer, filter and purification systems, waste disposal systems, holding tanks, pumps, and attendant piping and valves used for the purpose of commercial cleaning of fabrics.

(3) "Classification date" means February 4, 1981.

Section 2. Applicability.

This regulation shall apply to each affected facility commenced before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

Section 3. Standard for VOCs.

The owner or operator of an affected facility shall install, maintain and operate the control equipment such that the following requirements are met:

(1) There shall be no liquid leakage of organic solvents from the system.

(2) The entire dryer exhaust shall be vented through a properly functioning carbon adsorber or equally effective control device.

(3) The maximum organic solvent concentration in the vent from the dryer control device shall not exceed 100 ppm before dilution.

(4) Filter and distillation wastes:

(a) The residue from a diatomaceous earth filter shall be cooked or treated so that wastes shall not contain more than twenty-five (25) kg of solvent per 100 kg of wet waste material.

(b) The residue from a solvent still shall not contain more than sixty (60) kg of solvent per 100 kg of wet waste material.

(c) Filtration cartridges shall be drained in the filter housing for at least twenty-four (24) hours before being discarded. The drained cartridges shall be dried in the dryer tumbler after draining.

(d) Any other filtration or distillation system may be used if equivalency to these requirements is demonstrated. A system reducing waste losses below one (1) kg solvent per 100 kg clothes cleaned shall be considered equivalent.

Section 4. Compliance.

(1) Liquid leakage shall be determined by visual inspection of the following sources:
(a) Hose connections, unions, couplings and valves;
(b) Machine door gasket and seating;
(c) Filter head gasket and seating;
(d) Pumps;
(e) Base tanks and storage containers;
(f) Water separators;
(g) Filter sludge recovery operations;
(h) Distillation units;
(i) Diverter valves;
(j) Saturated lint from lint basket; and
(k) Cartridge filters.

(2) Dryer exhaust concentration shall be determined by the proper installation, operation, and maintenance of approved equipment as determined by the cabinet or by performance tests specified by the cabinet.

(3) The amount of solvent in filter and distillation wastes shall be determined by ASTM D 322-67 (77), and substituting collector C from ASRM E 123-78. ASTM methods have been incorporated by reference in 401 KAR 50:015.

Section 5. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on February 4, 1981, shall have achieved final compliance by December 31, 1982.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall be required to complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than three (3) months after the date the affected facility becomes subject to this regulation.

(b) Award the control system contract no later than five (5) months after the date the affected facility becomes subject to this regulation.

(c) Initiate on-site construction or installation of emission control equipment no later than seven (7) months after the date the affected facility becomes subject to this regulation.

(d) On-site construction or installation of emission control equipment shall be completed no later than eleven (11) months after the date the affected facility becomes subject to this regulation.

(e) Final compliance shall be achieved no later than twelve (12) months after the date the affected facility becomes subject to this regulation.

(f) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) through (d) of this subsection adjusted by the cabinet.

Section 6. Exemptions.
Perchloroethylene dry cleaning facilities which are coin- operated shall be exempt from this regulation.

Section 7. Variances.
Variation with the standards and limitations contained in this regulation, if supported by adequate technical information, may be considered by the cabinet on a case-by-case basis to allow for technological or economic circumstances which are unique to a source. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

Effective Date: June 24, 1992

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Original Reg	FEB 05, 1981	NOV 24, 1981	46 FR 57486
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401 KAR 61:165. Existing primary aluminum reduction plants.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing primary aluminum reduction plants.

Section 1. Applicability.

(1) The provisions of this regulation shall apply to each affected facility which means each potroom group within a primary aluminum reduction plant commenced before the classification date defined below.

(2) A physical change in, or change in the method of operation of, each potroom group within a primary aluminum reduction plant in conformance with the change from this regulation, as effective November 5, 1981, to this regulation, as effective October 1, 1984, shall not be a modification; provided, that the potroom group within a primary aluminum reduction plant was an affected facility at the time of the physical or operational change.

Section 2. Definitions.

As used in this regulation, all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Primary aluminum reduction plant" means any source manufacturing aluminum by electrolytic reduction.

(2) "Potroom" means a building unit which houses a group of electrolytic cells in which aluminum is produced.

(3) "Potroom group" means an uncontrolled potroom, a potroom which is controlled individually, or a group of potrooms or potroom segments ducted to a common control system.

(4) "Roof monitor" means that portion of the roof of a potroom where gases not captured at the cell exit from the potroom.

(5) "Total fluorides" and "gaseous fluorides" means elemental fluorine and all fluoride compounds, as measured and distinguished by reference methods specified in Section 7 of this regulation or equivalent or alternative methods.

(6) "Primary control system" means an air pollution control system designed to remove gaseous and particulate fluorides from exhaust gases which are captured at the cell.

(7) "Classification date" means October 23, 1974.

(8) "Dry scrubbing plant" means each primary aluminum reduction plant with a primary control system which operates in a manner whereby potroom group gases flow through a reaction bed consisting of alumina prior to being treated by dry removal methods for particulate emissions control. The resulting reaction bed products are then used as feed to the potroom group electrolytic reduction cells.

(9) "Startup cell" means an electrolytic reduction cell which is initially devoid of any materials other than carbon cathodes and anodes. Such a cell undergoes a prebake period by passing electrical current through anodes resting on the cathode floor, then has the necessary

electrolyte and aluminum added, such that it will produce aluminum.

(10) "Sick cell" means an electrolytic reduction cell which has lost its proper heat balance, cannot maintain a solid crust, and must be removed from the primary control system to receive corrective attention.

(11) "Normal potroom operations" means any potroom activity and includes uncaptured cell gases resulting from startup cells, cell tapping, anode changing, ore additions, or any other potroom operation but does not include operations due to sick cells.

(12) "State Implementation Plan" means the most recently prepared plan or revision thereof required by Section 110 of the Clean Air Act which has been approved by the U.S. EPA.

Section 3. Standard for Visible Emissions.

On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere:

(1) From any potroom roof monitor any gases which exhibit ten (10) percent opacity or greater during normal potroom operation except startup cells;

(2) From any potroom roof monitor section directly above sick cells or startup cells any gases which exhibit forty (40) percent opacity or greater;

(3) From any dry scrubbing plant primary control system any gases which exhibit ten (10) percent opacity or greater; or

(4) From any primary aluminum reduction plant other than a dry scrubbing plant primary control system any gases which exhibit twenty-five (25) percent opacity or greater.

Section 4. Standard for Fluorides.

(1) On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, the owner or operator subject to the provisions of this regulation shall:

(a) For a dry scrubbing plant cause to be discharged into the atmosphere no gases which contain total fluorides in excess of one and nine-tenths (1.9) lb/ton of aluminum produced except that emissions between one and nine-tenths (1.9) lb/ton and two and five-tenths (2.5) lb/ton will be considered in compliance if the owner or operator demonstrates to the cabinet's satisfaction that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the affected facility during the performance test.

(b) For any primary aluminum reduction plant other than a dry scrubbing plant cause to be discharged into the atmosphere through each potroom roof monitor no gases which contain gaseous fluorides in excess of 3.25 lb/hr.

(c) For a primary aluminum reduction plant other than a dry scrubbing plant cause to be discharged into the atmosphere from any primary control system no gases which contain gaseous fluorides in excess of one and zero-tenths (1.0) lbs/ton of aluminum produced except that any such plant may cause to be discharged into the atmosphere gases which contain gaseous fluorides not exceeding 290 lb/hr providing that a State Implementation Plan allowing such emissions has been approved by the U.S. EPA. The minimum stack height for the primary control system shall be 400 feet.

(2) In the event of a recorded violation of the fluoride standard prescribed in 401 KAR

53:010, the cabinet shall require that remedial measures be initiated from the source(s) responsible for causing said violation.

Section 5. Standard for Particulate Emissions.

On and after the date on which the performance test required to be conducted by 401 KAR 61:005 is completed, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere from any primary aluminum reduction plant other than a dry scrubbing plant primary control system any gases which contain particulate emissions in excess of 0.010 gr/scf. Addition of dilution air shall not constitute compliance.

Section 6. Monitoring of Operations.

(1) The owner or operator of any primary aluminum reduction plant other than a dry scrubbing plant subject to the provisions of this regulation shall install, calibrate, maintain, and operate monitoring devices which can be used to determine daily the weight of the aluminum produced. The weighing devices shall have an accuracy of plus or minus five (5) percent over their operating range.

(2) The owner or operator of any primary aluminum reduction plant other than a dry scrubbing plant shall maintain a record of daily production rates of aluminum, raw material feed rates, and cell or potline voltages.

(3) The owner or operator of any affected facility shall install, use, and maintain ambient air monitoring equipment in accordance with such methods as the cabinet shall prescribe; establish and maintain records of same; and make periodic emission reports at intervals prescribed by the cabinet.

Section 7. Test Methods and Procedures.

(1) Reference methods as defined in Appendix A of 40 CFR 60 or as otherwise specified, filed by reference in 401 KAR 50:015, except as provided for in 401 KAR 50:045, shall be used to determine compliance with the standards prescribed in Section 3, 4 and 5 of this regulation as follows:

(a) For sampling emissions from stacks:

1. Reference Method 13A or 13B for the concentration of total fluoride and the associated moisture content;
2. Reference Method 1 for sample and velocity traverses;
3. Reference Method 2 for velocity and volumetric flow rate;
4. Reference Method 3 for gas analysis; and
5. Reference Method 5 for particulate emissions.

(b) For sampling emissions from roof monitors not employing stacks or pollutant collection systems:

1. Reference Method 14 and Kentucky Method 130 for the concentration of gaseous fluorides and associated moisture content;
2. Reference Method 1 for sample and velocity traverses;
3. Reference Method 2 and Reference Method 14 for velocity and volumetric flow rate; and
4. Reference Method 3 for gas analysis.

(c) For opacity determination. Reference Method 9.

(2) For Reference Method 13A or 13B, 14, and Kentucky Method 130, the sampling time for each run shall be at least eight (8) hours for any potroom sample, and the minimum sample volume shall be six and eight-tenths (6.8) dscm (240 dscf) for any potroom sample except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the cabinet.

(3) The air pollution control system for each affected facility shall be constructed so that volumetric flow rates and total fluoride emissions can be accurately determined using applicable methods specified under subsection (1) of this section.

(4) The rate of aluminum production is determined by dividing 720 hours into the weight of aluminum tapped from the affected facility during a period of thirty (30) days prior to and including the final run of a performance test.

(5) For each run for any plant with an emission limitation expressed in lbs/ton of aluminum produced, potroom group emissions expressed in kg/metric ton of aluminum produced shall be determined using the equation in Appendix A of this regulation.

(6) For any sampling harness which does not comply with Reference Method 14 in Appendix A to 40 CFR 60, as amended on June 30, 1980, the cabinet shall prescribe such sampling procedures as it deems appropriate.

Section 8. Compliance Timetable.

(1) The owner or operator of an affected facility shall be required with respect to startup cell and sick cell emissions to achieve compliance with this regulation no later than February 1, 1982, except as provided for under Section 9 of this regulation.

(2) The owner or operator of an affected facility shall be required with respect to the primary removal system to achieve final compliance no later than February 1, 1981.

Section 9. Variance.

To allow for technological and economic circumstances unique to a source, variation from the visible emission standard for sick or startup cells specified in Section 3(2) of this regulation shall be granted by the cabinet when supported by adequate technical and economic documentation reasonably acceptable to the cabinet.

Effective Date: June 4, 1985

	Date Submitted to EPA	Date Approved by EPA	Federal Register
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1st Revision	MAR 04, 1982	AUG 10, 1982	47 FR 34537
2nd Revision	APR 13, 1986	DEC 02, 1986	51 FR 43395

401 KAR 61:170. Existing blast furnace casthouses.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET

Department for Environmental Protection Division for Air Quality

RELATES TO: KRS Chapter 224
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement, and control of air pollution. This regulation provides for the control of emissions from existing blast furnace casthouses.

Section 1. Applicability.
The provisions of this regulation shall apply to blast furnace casthouses located in, or impacting upon, an area designated nonattainment for total suspended particulates under 401 KAR 51:010 which commenced before the classification date defined below. Blast furnace casthouses located in areas designated as nonattainment which were required to obtain permits prior to the effective date of this regulation shall maintain the permit and any applicable requirements when the area is redesignated in 401 KAR 51:010 or 40 CFR 81.318, unless a state implementation plan which provides for other controls is approved by the U.S. EPA.

Section 2. Definitions.
As used in this regulation all terms not defined herein shall have the meaning given them in 401 KAR 50:010.

(1) "Blast furnace casthouses" means the building or buildings which houses the following operations:

(a) Casting of hot metal from a blast furnace from an opening at the bottom of the furnace through a runner into a torpedo car; and

(b) Casting of the slag from a blast furnace from an opening at the bottom of the furnace through runner(s) into a slag ladle or slag pit.

(2) "Blast furnace" means a furnace producing pig iron by introducing iron-bearing materials, coke, and flux materials into a vessel and introducing heated combustion air to form a reducing gas which is passed counter current to the descending raw materials.

(3) "Classification date" means April 1, 1984.

(4) "Control device" means the air pollution control equipment used to remove particulate matter generated in the blast furnace casthouses from the effluent gas stream.

Section 3. Standard for Particulate Matter.
No owner or operator of a blast furnace casthouse subject to the provisions of this regulation shall cause to be discharged into the atmosphere from the blast furnace casthouse any gases which:

(1) Exhibit an average opacity in excess of twenty (20) percent.

(2) If such gases exit from a gas cleaner, no owner or operator subject to the provisions of this regulation shall cause to be discharged into the atmosphere any gases which:

(a) Contain particulate matter in excess of 0.010 gr/dscf as tested during the casting of hot metal and slag; or

(b) Exhibit an average opacity in excess of twenty (20) percent.

Section 4. Test Methods and Procedures.

Reference methods in Appendix A of 40 CFR 60, except as provided in 401 KAR 50:045, and as supplemented by the procedures in subsection (6) of this section, shall be used to determine compliance with the standards prescribed under Section 3 of this regulation as follows:

(1) Reference Method 5 for the concentration of particulate matter and associated moisture content;

(2) Reference Method 1 for sample and velocity traverses;

(3) Reference Method 2 for velocity and volumetric flow rate;

(4) Reference Method 3 for gas analysis; and

(5) Reference Method 9 for the determination of opacity.

(6) For the purpose of determining compliance with Section 3(1) of this regulation, the following procedures shall be used to supplement Method 9:

(a) A series of consecutive observations taken at fifteen (15) second intervals shall be made during the entire period of time that hot metal and slag are being cast. Compliance shall be based on a comparison of the standard in Section 3(1) of this regulation with the highest average opacity occurring over any six (6) consecutive minutes during the period of observation. If emissions are being emitted from the roof monitor and other discharge points from the building, the reader shall read and record whichever plume is most opaque at the time of each reading.

(b)1. In making observations of roof monitor emissions, the reader shall be positioned within a sector seventy (70) degrees either side of a line perpendicular to the long axis of the roof monitor. Within this sector the reader shall be positioned with the sun behind him and generally perpendicular to the axis of the plume that is being observed. On overcast days or if the plume is in a shadow, the reader need not follow the requirement about positioning his back to the sun.

2. In making observations of emissions from other openings in the building, the reader shall be positioned within a sector seventy (70) degrees either side of a line perpendicular to the side of the building nearest which the emissions occur and with a clear view of the emissions. Within this sector the reader shall be positioned with the sun behind him and generally perpendicular to the axis of the plume that is being observed. On overcast days, the reader need not follow the requirement about positioning his back to the sun.

Section 5. Compliance Timetable.

The owner or operator of a blast furnace casthouse subject to the provisions of this regulation shall demonstrate compliance with Section 3 of this regulation on or before December 31, 1982.

Section 6. Alternate Emission Limitations.

The owner or operator of an affected facility subject to this regulation may propose an alternate plan pursuant to the requirements of 401 KAR 51:055 to meet the emissions limitations required by this regulation.

Effective Date: April 14, 1988

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401 KAR 61:175. Leaks from existing synthetic organic chemical and polymer manufacturing equipment.

NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
Department for Environmental Protection Division for Air Quality

RELATES TO: KRS 224.20-100, 224.20-110, 224.20-120; Appendix A to 40 CFR 60 (Method 21); 42 USC 7410
STATUTORY AUTHORITY: KRS 224.10-100
NECESSITY AND FUNCTION: KRS 224.10-100 requires the Natural Resources and Environmental Protection Cabinet to prescribe regulations for the prevention, abatement and control of air pollution. 42 USC 7410 likewise requires the state to implement standards for national primary and secondary ambient air quality. This regulation provides for the control of volatile organic compound emissions from leaks from existing synthetic organic chemical and polymer manufacturing equipment.

Section 1. Definitions.

As used in this regulation, all terms not defined in this section shall have the meaning given to them in 401 KAR 61:001.

(1) "Affected facility" means each individual component which contacts a process fluid that contains greater than ten (10) percent volatile organic compounds (VOCs) by weight within a synthetic organic chemical manufacturing plant or polymer manufacturing plant.

(2) "Component" means a piece of equipment, including but not limited to pumps, valves, compressors, and pressure relief valves, which has the potential to leak (VOCs).

(3) "Synthetic organic chemical manufacturing plant" means facilities which operate equipment in process units to manufacture methyl tert-butyl ether or one (1) or more of the synthetic organic chemicals listed in 401 KAR 59:305.

(4) "Polymer manufacturing plant" means a facility which operates equipment in process units to manufacture polyethylene, polypropylene, or polystyrene.

(5) "Leak" means the presence of a VOC concentration exceeding 10,000 ppm by volume if tested in the manner referenced in Section 5 of this regulation.

(6) "Gas service" means that the VOC is gaseous at conditions that prevail in the component during normal operations.

(7) "In light liquid service" means that the component contacts a liquid with a concentration greater than twenty (20) percent by weight of VOCs having a vapor pressure greater than three-tenths (0.3) kilopascals at twenty (20) degrees Celsius.

(8) "Light liquid" means a liquid with a concentration greater than twenty (20) percent by weight of VOCs having a vapor pressure greater than three-tenths (0.3) kilopascals at twenty (20) degrees Celsius.

(9) "Heavy liquid" means a fluid which is not in the gaseous state at operating conditions or which is not a light liquid.

(10) "Process unit" means components assembled to manufacture, as intermediate or final products, one (1) or more of the chemicals referenced in subsections (3) and (4) of this section. A process unit can operate independently if it is supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

(11) "Classification date" means January 5, 1981.

Section 2. Applicability.

(1) This regulation shall apply to each affected facility commenced on or before the classification date defined in Section 1 of this regulation which is located in a county or portion of a county which is designated ozone nonattainment, for any nonattainment classification except marginal, under 401 KAR 51:010.

(2) This regulation shall not apply to components within a petroleum refinery complex. Leaks from new and existing petroleum refinery equipment shall be regulated by 401 KAR 59:049 and 401 KAR 61:137, respectively.

Section 3. Standard for VOCs.

(1) If an affected facility within the manufacturing plant is found to be leaking, the owner or operator shall repair the leak within fifteen (15) days. A component recheck shall be made within five (5) days 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 by volume).

(2) Any time a valve is located at the end of a pipe or line containing VOCs, the owner or operator shall seal the end of the line with a second valve, a blind flange, a plug, or a cap. This sealing device may be removed only when a sample is being taken or during maintenance operations. This requirement shall not apply to safety pressure relief valves.

Section 4. Monitoring and Reporting Requirements.

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

(1) The operator shall perform component monitoring using the method referenced in Section 5 of this regulation as follows:

(a) Monitor with a portable VOC detection device four (4) times per year (quarterly) pumps in light liquid service, compressors, valves in light liquid service, valves in gas service, and pressure relief valves in gas service.

(b) Monitor visually fifty-two (52) times per year (weekly) pumps in light liquid service. Each pump shall be repaired within fifteen (15) days after visual inspection indicates it is leaking.

(c) Monitor with a portable VOC detection device a pressure relief valve within five (5) days after it has vented to the atmosphere. Pressure relief devices which are tied in to either a flare header or vapor recovery device shall be exempt from the monitoring requirements.

(d) Monitor with a portable VOC detection device within five (5) days of discovery, a component whose sight, smell, or sound indicates that it might be leaking.

(e) Difficult or unsafe-to-monitor components shall be exempt from this subsection, however these components shall meet the requirements for difficult or unsafe-to-monitor valves as specified in 401 KAR 59:305.

(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 operator performing the monitoring and the cabinet.

(3) 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 detector 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 (2) years after the inspection is completed. The survey log shall be made available to the cabinet upon request.

(4) After quarterly monitoring has been performed the operator shall submit a report to the cabinet listing all leaks that were located but not repaired within the fifteen (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 fifteen (15) days shall be repaired during the next scheduled turnaround. If the cabinet requests it, the owner or operator shall demonstrate to the cabinet's satisfaction why the repairs could not be completed within the initial fifteen (15) day period. If the leak is unable to be brought into compliance, a variance shall be requested which the cabinet may grant on an individual basis, based upon a showing which is satisfactory to the cabinet. Case-by-case alternatives approved by the cabinet, but not previously authorized by the U.S. EPA, shall be submitted to the U.S. EPA as a SIP revision.

Section 5. Test Methods and Procedures.

(1) Except as provided for in 401 KAR 50:045, Appendix A to 40 CFR 60, Method 21, which has been incorporated by reference in 401 KAR 50:015, shall be used to determine compliance with the standard prescribed in Section 3 of this regulation and the monitoring requirements in Section 4 of this regulation.

(2) The owner or operator may elect to use alternate monitoring methods if it can be demonstrated to the cabinet's satisfaction that the alternate methods shall achieve equivalent control efficiency.

Section 6. Compliance Timetable.

(1) Affected facilities which were subject to this regulation as in effect on December 2, 1986, shall have achieved final compliance by January 1, 1988.

(2) The owner or operator of an affected facility that becomes subject to this regulation on or after the effective date of this regulation shall complete the following:

(a) Submit a final control plan for achieving compliance with this regulation no later than six (6) months after the date the affected facility becomes subject to this regulation.

(b) Final compliance shall be achieved no later than twelve (12) months after the date the affected facility becomes subject to this regulation.

(c) If an affected facility becomes subject to this regulation because it is located in a county previously designated nonurban nonattainment or redesignated in 401 KAR 51:010 after November 15, 1990, final compliance may be extended to May 31, 1995, and the schedule in paragraphs (a) and (b) of this subsection adjusted by the cabinet.

Section 7. Exemptions.

(1) Process units which process only heavy liquid VOC shall be exempt from Section 4 of this regulation.

(2) Equipment operating under a vacuum shall be exempt from provisions of] this regulation.

(3) Affected facilities within a process unit that has the design capacity to manufacture less than 1,000 megagrams per year of polyethylene, polypropylene, polystyrene, methyl tert-butyl ether, or one (1) or more of the synthetic organic chemicals listed in 401 KAR 59:305, shall be exempt from this regulation.

(4) Affected facilities within a process unit that manufactures beverage alcohol shall be exempt from this regulation.

Section 8. Modifications.

(1) If, after at least one (1) complete annual check, the operator determines that modifications of the monitoring requirements are in order, he may request in writing to the cabinet that a revision to the monitoring requirements be made. The submittal shall include data that have been developed to justify modifications in the monitoring schedule. The cabinet may grant this revision to the monitoring requirements based upon a showing which is satisfactory to the cabinet.

(2) An owner or operator may elect to comply with the alternative standards for valves contained in 401 KAR 59:305. In 401 KAR 59:305 under skip period leak detection and repair alternative for valves, the phrase "60.482-7" shall be read as "Section 4 of this regulation."

[SIP Compilation Table Before Appendix]

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Original Reg	DEC 29, 1986	JUL 05, 1988	53 FR 25176
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APPENDIX A TO 401 KAR 61:175

EQUATION FOR POTROOM GROUP EMISSIONS

$$E_P = \frac{(CQ)_1\ 10^{-6} + (CQ)_2\ 10^{-6}}{M}$$

Where:

E_P = Primary control system emissions of gaseous fluorides in kg/metric ton of aluminum produced at any plant other than a dry scrubbing plant.

= Potroom group emissions of total fluorides in kg/metric ton of aluminum produced at dry scrubbing plants.

C = For dry scrubbing plants, concentration of total fluorides in mg/dscm as determined by Reference Method 13A or 13B, or Reference Method 14 as applicable.

= For plants other than dry scrubbing plants, concentration of gaseous fluorides as determined by Kentucky Method 130.

Q = Volumetric flow rate of the effluent gas stream in dscm/hour as determined by Reference Method 2 and/or Reference Method 14, as applicable.

10^{-6} = Conversion factor for mg to kg.

M = Rate of aluminum production in metric ton/hour as determined by Section 7(4) of this regulation.

$(CQ)_1$ = Product of C and Q for measurements of primary control system effluent gas streams.

$(CQ)_2$ = Product of C and Q for measurements of roof monitor effluent gas stream at dry scrubbing plants. $(CQ)_2$ shall be equal to zero for any plant other than a dry scrubbing plant.