

## Chapter 129 -- Standards for Sources

### STATIONARY SOURCES OF NO<sub>x</sub> AND VOCs

#### § 129.91. Control of major sources of NO<sub>x</sub> and VOCs.

(a) This section applies to both the owner and the operator of a major NO<sub>x</sub> emitting facility or major VOC emitting facility for which no RACT requirement has been established in §§ 129.51, 129.52, 129.54 – 129.72, 129.81 and 129.82 (relating to sources of VOCs; and mobile sources). This section applies to the owner and operator of a major VOC emitting facility for which requirements have been established in § 129.52 Table I (11) (relating to surface coating processes).

(b) The owner and the operator shall, jointly, provide the Department with the following information on or before May 16, 1994.

(1) An identification of each facility including individual sources to which this section applies.

(2) A determination through emission testing of the following:

(i) The total potential to emit and the actual emissions of VOCs for the 1990 calendar year from each source at the facility.

(ii) The total potential to emit and actual emissions of NO<sub>x</sub> for the 1990 calendar year from each source at the facility.

(c) Alternative methods which accurately characterize the emissions for the 1990 calendar year may be used to determine potential and actual emissions under subsection (b) if emission test data are not available and the Department has approved the alternative method in writing.

(d) The owner and the operator of a major NO<sub>x</sub> emitting facility or major VOC emitting facility shall, jointly, on or before July 15, 1994, provide to the Department and the EPA, Chief, Air Programs Branch, United States EPA, Region III, 841 Chestnut Building, Philadelphia, Pennsylvania 19107 a written proposal for RACT for each source of VOCs and NO<sub>x</sub> at the facility. The RACT proposal shall include, at a minimum, the information contained in § 129.92 (relating to RACT proposal requirements).

(e) The Department will approve, deny or modify each RACT proposal.

(f) Upon receipt of notice of the Department's approval of the RACT proposal, the facility shall begin implementation of the measures necessary to comply with the approved or modified RACT proposal. Implementation of the RACT program shall be completed according to the schedule established in the approved RACT program and shall be as expeditious as practicable

but no later than May 31, 1995.

(g) Where the installation of a new source, modification or change in operation of an existing source will result in the source or facility meeting the definition of a major NO<sub>x</sub> emitting facility or a major VOC emitting facility, the owner and the operator shall jointly submit a RACT proposal to the Department and the EPA that meets the requirements of this section, and complete implementation of the RACT proposal as approved or modified by the Department prior to the installation, modification or change in operation of the existing source.

(h) Except for sources which elect to comply with the presumptive RACT emission limitations in § 129.93 (relating to presumptive RACT emission limitations), the Department will submit each RACT determination to the EPA for approval as a revision to the SIP. A major NO<sub>x</sub> emitting facility or major VOC emitting facility shall bear the costs of public hearings and notification required for EPA approval.

(i) Following the implementation of the RACT requirements, the owner and operator of a combustion unit with a rated heat input of 250 million Btus per hour or greater and subject to §123.51 shall, through the use of a Department approved continuous emission monitoring system, determine the rate of emissions of NO<sub>x</sub> from the combustion unit. Following the implementation of the RACT requirements, the owner and operator of a combustion unit with a rated heat input greater than 100 million Btus per hour and not subject to §123.51, shall, through the use of either a Department approved periodic source testing program or predictive modeling program, determine the rate of emissions of NO<sub>x</sub> from the combustion unit unless the owner and operator elects to use a Department approved continuous monitoring system.

(j) Based on the results of the emission monitoring conducted in accordance with subsection (i), the Department will determine the RACT emission limitations for the source and the Department will submit the emission limitations to the EPA as a Federally enforceable permit.

#### **§129.92. RACT proposal requirements.**

(a) Each RACT proposal shall, at a minimum, include the following information:

- (1) A list of each source subject to the RACT requirements.
- (2) The size or capacity of each affected source and the types of fuel combusted or the types and quantities of materials processed or produced in each source.
- (3) A physical description of each source and its operating characteristics.
- (4) Estimates of the potential and actual NO<sub>x</sub> and VOC emissions from each affected source and associated supporting documentation.
- (5) A RACT analysis which meets the requirements of subsection (b), including

technical and economic support documentation for each affected source.

(6) A schedule for completing implementation of the RACT proposal as expeditiously as practicable but not later than May 31, 1995, including interim dates for the issuance of purchase orders, start and completion of process, technology and control technology changes and the completion of compliance testing.

(7) The testing, monitoring, recordkeeping and reporting procedures proposed to demonstrate compliance with RACT.

(8) A plan approval application that meets the requirements of this article if required under § 127.11 (relating to plan approval requirements).

(9) An application for an operating permit amendment or application to incorporate the provisions of the RACT proposal.

(10) Additional information requested by the Department that is necessary for the evaluation of the RACT proposal.

(b) The RACT analysis required under subsection (a)(5) shall include:

(1) A ranking of the available control options for the affected source in descending order of control effectiveness. Available control options are air pollution control technologies or techniques with a reasonable potential for application to the source. Air pollution control technologies and techniques include the application of production process or methods, control systems for VOCs and NO<sub>x</sub> and fuel combustion techniques for the control of NO<sub>x</sub>. The control technologies and techniques shall include existing controls for the source category and technology transfer controls applied to similar source categories.

(2) An evaluation of the technical feasibility of the available control options identified in subsection (b)(1). The evaluation of technical feasibility shall be based on physical, chemical and engineering principles. A determination of technical infeasibility shall identify technical difficulties which would preclude the successful use of the control option on the affected source.

(3) A ranking of the technically feasible control options in order of overall control effectiveness for NO<sub>x</sub> or VOC emissions. The list shall present the array of control options and shall include, at a minimum, the following information:

(i) The baseline emissions of VOCs and NO<sub>x</sub> before implementation of each control option.

(ii) The estimated emission reduction potential or the estimated control efficiency of each control option.

(iii) The estimated emissions after the application of each control option.

(iv) The economic impacts of each control option, including both overall cost effectiveness and incremental cost effectiveness.

(4) An evaluation of cost effectiveness of each control option consistent with the "OAQPS Control Cost Manual" (Fourth Edition), EPA 450/3-90-006 January 1990 and subsequent revisions. The evaluation shall be conducted in accordance with the following requirements:

(i) The cost effectiveness shall be evaluated in terms of dollars per ton of NOx or VOC emissions reduction.

(ii) The cost effectiveness shall be calculated on average and incremental bases for each option. Average cost effectiveness is calculated as the annualized cost of the control option divided by the baseline emissions rate minus the control option emission rate, as shown by the following formula:

$$\text{Average cost effectiveness} = \frac{\text{Control option total annualized cost (\$/yr)}}{\text{Base emission rate} - \text{Control option rate (tons/yr)}}$$

(\\$/ton removed)

(iii) For purposes of this paragraph, baseline emission rate represents the maximum emissions before the implementation of the control option. The baseline emissions rate shall be established using either test results or approved emission factors and historic operating data.

(iv) For purposes of this paragraph, the incremental cost effectiveness calculation compares the costs and emission level of a control option to those of the next most stringent option, as shown by the following formula:

$$\text{Incremental cost (dollars) per incremental ton removed} = \frac{\text{Control option total annualized cost (\$/yr)} - \text{Total annualized cost of next most stringent control option}}{\text{Next most stringent control option emission rate} - \text{Control option emission rate}}$$

(c) The RACT analysis, including the technical and economic documentation required by subsections (a)(5) and (b), will not be required for the sources which comply with the presumptive RACT emission limitations in §129.93 (relating to presumptive RACT emission limitations).

**§129.93. Presumptive RACT emission limitations.**

(a) The owner and operator of a major NO<sub>x</sub> emitting facility listed in this section and subject to § 129.91 (relating to control of major sources of NO<sub>x</sub> and VOCs) may elect to comply with the emission limitations of this section as an alternative to developing and implementing a RACT emission limitation on a case-by-case basis.

(b) The owner and operator shall develop and implement the following presumptive RACT emission limitations:

(1) For a coal-fired combustion unit with a rated heat input equal to or greater than 100 million Btu/hour, presumptive RACT shall be the installation and operation of low NO<sub>x</sub> burners with separate overfire air.

(2) For a combustion unit with a rated heat input equal to or greater than 20 million Btu/hour and less than 50 million Btu/hour presumptive RACT shall be the performance of an annual adjustment or tuneup on the combustion process. This adjustment shall include, at a minimum, the following:

(i) Inspection, adjustment, cleaning or replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.

(ii) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NO<sub>x</sub>, and to the extent practicable minimize emissions of CO.

(iii) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

(3) For combustion units subject to paragraph (2), the owner and operator of the adjusted equipment shall record each adjustment conducted under the procedures in paragraph (2) in a permanently bound log book or other method approved by the Department. This log shall contain, at a minimum, the following information:

(i) The date of the tuning procedure.

(ii) The name of the service company and technicians.

(iii) The final operating rate or load.

(iv) The final CO and NO<sub>x</sub> emission rates.

(v) The final excess oxygen rate.

(vi) Other information required by the applicable operating permit.

(4) For oil, gas and combination oil/gas units, the owner and operator shall maintain records including a certification from the fuel supplier of the type of fuel and for each shipment of distillate oils number 1 or 2, a certification that the fuel complies with ASTM D396-78 "Standard Specifications for Fuel Oils." For residual oils, minimum recordkeeping includes a certification from the fuel supplier of the nitrogen content of the fuel, and identification of the sampling method and sampling protocol.

(5) For oil and gas and combination oil/gas fired units subject to paragraph (2), the owner and operator shall make the annual adjustment in accordance with the EPA document "Combustion Efficiency Optimization Manual for Operators of Oil and Gas-fired Boilers," September 1983 (EPA-340/1-83-023) or equivalent procedures approved in writing by the Department.

(c) For the following source types, presumptive RACT emission limitation are the installation, maintenance and operation of the source in accordance with manufacturers specifications:

(1) Boilers and other combustion sources with individual rated gross heat inputs less than 20 million Btu/hour of operation.

(2) Combustion turbines with individual heat input rates less than 25 million Btu/hour which are used for natural gas distribution.

(3) Internal combustion engines rated at less than 500 bhp (gross) which are set and maintaining 4° retarded relative to standard timing.

(4) Incinerators or thermal/catalytic oxidizers used primarily for air pollution control.

(5) Any fuel-burning equipment, gas turbine or internal combustion engine with an annual capacity factor of less than 5%, or an emergency standby engine operating less than 500 hours in a consecutive 12-month period.

(6) [Not in SIP]

(7) [Not in SIP]

#### **§129.94. NO<sub>x</sub> RACT emission averaging general requirements.**

(a) The owners and operators of major NO<sub>x</sub> emitting facilities may submit a written proposal to the Department as part of an application for operating permits to average emissions to meet the RACT requirements of § 129.91 (relating to control of major sources of NO<sub>x</sub> and VOCs). Emission averaging which complies with applicable EPA requirements and is approved as an SIP revision, and which meets the criteria in subsection (b) and is approved by the Department

shall satisfy the requirements of § 129.91. The Department will approve, deny or modify each averaging proposal.

(b) The Department will not approve an emission averaging proposal unless the proposal demonstrates compliance with the following requirements to the Department's satisfaction:

(1) The proposal shall demonstrate that the aggregate emissions achieved through the RACT averaging proposal are less than the sum of emissions that would be achieved by complying with the RACT requirement on a source specific basis.

(2) The averaging proposal shall include a tons per year emission cap and an emission rate such as pounds/million Btus for each source in the averaging proposal that provide for verification and enforcement of the averaging proposal.

(3) Emission reductions attributed to the shutdown or curtailment of operation of a source may not be included in an averaging proposal.

(4) The proposal shall demonstrate that the ambient air quality impact resulting from implementation of the averaging proposal is less than or equivalent to the impact from each source complying with the RACT requirements in § 129.91 and §§ 129.92 and 129.93 (relating to RACT proposal requirements; and presumptive RACT emission limitations) individually. The demonstration shall consider the area of emissions impact and the periods of time of emissions impact except as follows:

(i) For emission averaging involving sources located within the same nonattainment area, the demonstration shall only consider the periods of time of emissions impact.

(ii) For emission averaging involving sources not located within the same nonattainment area which are located less than 200 kilometers from another source involved in the averaging proposal, the demonstration shall only consider the periods of time of emissions impact.

(5) The proposal shall provide that each source involved in the averaging proposal shall be required to use continuous emission monitors and record emissions following the requirements of Chapter 139 (relating to sampling and testing). The participating sources are required to establish telemetry links between the sources and to provide real time emission data to all sources affected by the averaging proposal. For an averaging proposal involving sources at a single facility, the Department may approve alternate requirements provided the proposal demonstrates that the alternate methodologies are credible, workable, replicable and fully enforceable and adequately quantify emissions from all sources participating in the averaging program.

(c) An averaging proposal shall be approved by the EPA as an SIP revision before the

averaging proposal may be implemented.

(d) Every source or facility involved in the approved averaging proposal is in violation of its operating permit when a source or facility subject to the averaging proposal exceeds an emission limitation or averaging requirement established under this section.

(e) Additional emission reductions required under the act or the Clean Air Act or the regulations adopted under either the act or the Clean Air Act shall be in addition to and not a substitute for the emission reductions required by the averaging proposal.

**§129.95. Recordkeeping.**

(a) The owner and operator of a major NO<sub>x</sub> emitting facility or a major VOCs emitting facility shall keep records to demonstrate compliance with §§129.91– 129.94.

(b) The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §§129.91– 129.94 are met.

(c) Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.

(d) The records shall be retained for at least 2 years and shall be made available to the Department on request.

(e) An owner or operator claiming that a facility is exempt from the RACT requirements of §§129.91– 129.94, based on the facility's potential to emit, shall maintain records that clearly demonstrate to the Department that the facility or source is not subject to §§129.91– 129.94.