

3745-110-01 Definitions.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (C) of this rule titled "Referenced materials."]

(A) Except as otherwise provided in this rule, the definitions in rule 3745-15-01 of the Administrative Code apply to this chapter.

(B) As used in this chapter:

- (1) "Affected facility" means any facility that meets the applicability requirements in rule 3745-110-02 of the Administrative Code.
- (2) "Affected source" means any source which is located at any affected facility and is not exempt under paragraph (K) of rule 3745-110-03 of the Administrative Code.
- (3) "Auxiliary boiler" means either a boiler that produces steam and operates at a capacity factor of less than ten per cent or a boiler at a nuclear electrical generating facility that produces steam for the facility during either emergency periods or atypical extended periods of nuclear plant outage.
- (4) "Black start unit" means any electric generating unit operated only in the event of a complete loss of facility power to test reliability, or for maintenance.
- (5) "British thermal unit" or "Btu" means the amount of heat needed to raise one pound of water one degree Fahrenheit.
- (6) "Capacity factor" means either the ratio of gross actual output to the gross rated output or the ratio of actual heat input to potential heat input for the calendar year, expressed as a percentage.
- (7) "Cell burner" means burner cells that consist of two or three circular burners combined into a vertically oriented assembly that creates a compact, intense flame.
- (8) "Coal" means all solid fuels classified as anthracite, bituminous, sub-bituminous or lignite, as defined by ASTM D388, "Standard Classification for Coals by Rank."
- (9) "Cyclone-fired boiler" means a boiler that combusts fuel in a horizontal water-cooled cylinder before releasing the combustion gases into the boiler.
- (10) "Diesel fuel" means a low sulfur fuel oil of grades 1-D or 2-D, as defined by ASTM D975, "Standard Specification for Diesel Fuel Oils."
- (11) "Distillate oil" means fuel oil that complies with the specifications for fuel oil number one or two, as defined by ASTM D396, "Standard Specification for Fuel Oils."
- (12) "Dry bottom" means a boiler design in which the coal-fired unit is equipped with an ash disposal hopper bottom with sufficient cooling surface so that the ash particles impinging on the furnace walls or hopper bottom can be removed in a dry state.

- (13) "Dual fuel" means a mixture of diesel fuel or distillate oil and gaseous fuels.
- (14) "Engine testing operation" means the activities, or the apparatus used in conducting testing of an internal combustion engine for the purpose of quality assurance/quality control in the manufacturing process of the engine, or for evaluating the pollutant emissions emitted by the engine.
- (15) "Gaseous fuels" means natural gas, blast furnace gas, coke oven gas or refinery fuel gas.
- (16) "Industrial boiler" means a steam generating unit that generates steam to supply power or heat to an industrial, institutional, or commercial operation. This term does not include boilers that serve electrical generating units and cogeneration facilities.
- (17) "Internal combustion engine" means any engine in which power, produced by heat and/or pressure developed in the engine cylinder by burning a mixture of air and fuel (including diesel fuel), is subsequently converted to mechanical work by means of one or more pistons.
- (18) "Lb per mmBtu" or "lb/mmBtu" means pound per million British thermal units.
- (19) "Large boiler" means an industrial boiler with a maximum heat input capacity greater than one hundred mmBtu/hr and equal to or less than two hundred fifty mmBtu/hr.
- (20) "Lean burn engine" means an internal combustion engine where the amount of oxygen in the exhaust gases is one per cent or more, by weight.
- (21) "Low NO_x burner" means a burner designed to reduce flame turbulence by the mixing of fuel and air and by establishing fuel-rich zones for initial combustion, thereby reducing the formation of NO_x.
- (22) "Mid-size boiler" means an industrial boiler with a maximum heat input capacity greater than fifty mmBtu/hr and equal to or less than one hundred mmBtu/hr.
- (23) "MmBtu/hr" means million British thermal units per hour.
- (24) "Municipal solid waste" means household, commercial/retail, or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and similar establishments or facilities. Institutional waste includes material discarded by schools, hospitals, non-manufacturing facilities and other similar establishments or facilities. Household, commercial/retail, and institutional wastes do not include sewage, wood pallets, construction and demolition wastes, or motor vehicles (including motor vehicle parts or vehicle fluff). Municipal solid waste does include motor vehicle maintenance materials, limited to vehicle batteries, used motor oil, and tires. Municipal solid waste does not include wastes that are

solely segregated medical wastes. However any mixture of segregated wastes which contain more than thirty per cent medical waste discards is considered to be municipal solid waste.

- (25) "Municipal waste combustor" means any device that combusts any solid, liquid, or gasified municipal solid waste.
- (26) "N/A" means not applicable.
- (27) "Natural gas" means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.
- (28) "Nitrogen oxides" or "NO_x" means all oxides of nitrogen which are determined to be ozone precursors, including, but not limited to, nitrogen oxide and nitrogen dioxide, but excluding nitrous oxide, collectively expressed as nitrogen dioxide.
- (29) "Oil" means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.
- (30) "Overfeed stoker-fired" means a boiler design that employs a moving grate assembly where the coal is fed into a hopper and then onto a continuous grate that conveys the coal into the furnace. As coal moves through the furnace, it passes over several air zones for staged burning.
- (31) "Peaking unit" means any electric generating unit that operates at a capacity factor of less than ten per cent between April first and October thirty-first of any calendar year.
- (32) "Potential to emit" means the maximum capacity of a facility or stationary source to emit NO_x under its physical and operational design. Any physical or operational limitation on the capacity of the facility or stationary source to emit NO_x, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, is treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable.
- (33) "Ppmvd" means parts per million by volume on a dry basis.
- (34) "RACT" means the lowest emissions limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.
- (35) "Reheat furnace" means a furnace in which metal ingots, billets, slabs, beams, blooms and other similar products are heated to the temperature needed for hot-working.
- (36) "Research and development sources" means a research or laboratory facility the primary purpose of which is to conduct research and development into new processes and products, that is operated under the close supervision of technically trained personnel, and that is not engaged in the manufacture of products for sale or

exchange for commercial profit, except in a de-minimis manner.

- (37) "Residual oil" means crude oil, fuel oil that does not comply with the specifications under the definition of "distillate oil," and all fuel oil numbers four, five, or six, as defined by ASTM D396, "Standard Specification for Fuel Oils."
- (38) "Rich burn engine" means an internal combustion engine where the amount of oxygen in the engine exhaust gases is less than one per cent, by weight.
- (39) "Small boiler" means an industrial boiler with a maximum heat input capacity greater than twenty mmBtu/hr and equal to or less than fifty mmBtu/hr.
- (40) "Space heating unit " means any fuel burning equipment that is used only for space heating purposes during the period from November first through March thirty-first or during other periods of cold weather conditions.
- (41) "Spreader stoker-fired" means a boiler design where mechanical or pneumatic feeders distribute coal uniformly over the surface of a moving grate.
- (42) "Stand-by fuel burning equipment" means any fuel burning equipment which is used only as a direct substitution for other fuel burning equipment for a limited period due to unpredictable breakdown or failure, or routine scheduled maintenance of such other fuel burning equipment or its associated air pollution control system. Stand-by fuel burning equipment includes engines that meet the definition of emergency stationary internal combustion engine under 40 CFR Part 60, Subpart IIII and 40 CFR Part 60, Subpart JJJJ or the definition of emergency stationary RICE under 40 CFR Part 63, Subpart ZZZZ.
- (43) "Start-up unit" means a unit operated only to start up larger electric generating units.
- (44) "Stationary combustion turbine" means any simple cycle combustion turbine, regenerative cycle combustion turbine, or any combustion turbine portion of a combined cycle steam/electric generating system that is not self-propelled, but which may be mounted on a vehicle for portability.
- (45) "Stationary internal combustion engine" means any reciprocating internal combustion engine that is not self propelled, but which may be mounted on a vehicle for portability.
- (46) "Tangential-fired" means a furnace firing design where the burners are mounted at the corners of the furnace chamber.
- (47) "Tune-up" means adjustments made to a burner or boiler in accordance with procedures supplied by the manufacturer (or approved specialist) to optimize the combustion efficiency.
- (48) "Very large boiler" means an industrial boiler with a maximum heat input capacity greater than two hundred fifty mmBtu/hr.
- (49) "Wall-fired" means a furnace firing design in which the burners are mounted in an

array on one or more vertical walls, including:

- (a) Opposed firing, where the burners are mounted on two opposite walls; and
- (b) Single-wall firing, where the burners are mounted on only one wall.

[Comment: Wall-fired does not include cell burner configurations.]

- (50) "Wet bottom" means a furnace design in which the coal-fired unit is equipped for slag disposal with a two-stage arrangement consisting of a chamber in the lower part of the furnace where the slag is deposited in a liquid state onto a collection surface, and a tank, containing water, into which the liquid slag is tapped.
- (C) Referenced materials. This chapter includes references to certain matter or materials. The text of the referenced materials is not included in the rules contained in this chapter. Information on the availability of the referenced materials as well as the date of, or the particular edition or version of the material is included in this rule. For materials subject to change, only the specific versions specified in this rule are referenced. Material is referenced as it exists on the effective date of this rule. Except for subsequent annual publication of existing (unmodified) Code of Federal Regulation compilations, any amendment or revision to a referenced document is not applicable unless and until this rule has been amended to specify the new dates.
- (1) Availability. The referenced materials are available as follows:
- (a) American Society for Testing Materials (ASTM). Information and copies of documents may be obtained by writing to: "ASTM International, 100 Bar Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19426-2959." These documents are also available for purchase at www.astm.org. ASTM documents are also available for inspection and copying at most public libraries and "The State Library of Ohio."
 - (b) Code of Federal Regulations (CFR). Information and copies may be obtained by writing to: "Superintendent of Documents, Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954." The full text of the CFR is also available in electronic format at <http://www.ecfr.gov>. The CFR compilations are also available for inspection and copying at most public libraries and "The State Library of Ohio."
 - (c) Federal Register (FR). Information and copies may be obtained by writing to: "Superintendent of Documents, Attn: New Orders, PO Box 371954, Pittsburgh, PA 15250-7954." Online access to the Federal Register is available at <http://www.gpo.gov/fdsys/>. A copy of the Federal Register is also available for inspection and copying at most public libraries and "The State Library of Ohio."
 - (d) "EPA Air Pollution Control Cost Manual;" United States Environmental Protection Agency. Information and copies of this document may be obtained by writing to: "United States Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina

27711." This document is also available for viewing at <https://www.epa.gov/economic-and-cost-analysis-air-pollution-regulations/cost-reports-and-guidance-air-pollution#cost%20manual>

- (e) "Federal Consent Decree:" Civil Action No. 5:14-cv-00884. Copies may be obtained upon written request to: Consent Decree Library, U.S. DOJ-ENRD, P.O. Box 7611, Washington, DC 20044–7611. Electronic copies may be examined and downloaded at the following web address: http://www.usdoj.gov/enrd/Consent_Decrees.html
- (f) "Guidance for Estimating Capital and Annual Costs of Air Pollution Systems;" Ohio environmental protection agency "Engineering Guide 46." Information and copies of this document may be obtained by writing to: "Ohio environmental protection agency, division of air pollution control, 50 West Town Street, Suite 700, Columbus, Ohio, 43215." This document is also available for viewing at <http://www.epa.ohio.gov/dapc/engineer/eguides.aspx>

(2) Referenced materials.

- (a) 40 CFR Part 60; "Standards of Performance for New Stationary Sources"; as published in the July 1, 2021 Code of Federal Regulations.
- (b) 40 CFR Part 60, Appendix F; "Quality Assurance Procedures"; as published in the July 1, 2021, Code of Federal Regulations.
- (c) 40 CFR Part 60, Subpart III, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines," as published in the July 1, 2021 Code of Federal Regulations.
- (d) 40 CFR Part 60, Subpart JJJJ, "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines" as published in the July 1, 2021 Code of Federal Regulations.
- (e) 40 CFR Part 60.13, "Monitoring Requirements" as published in the July 1, 2021 Code of Federal Regulations.
- (f) 40 CFR Part 63, Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" as published in the July 1, 2021 Code of Federal Regulations.
- (g) 40 CFR Part 75; "Continuous emission monitoring"; as published in the July 1, 2021 Code of Federal Regulations.
- (h) 40 CFR Part 97, Subpart AAAAA, "CSAPR NO_x Annual Trading Program" as published in the July 1, 2021 Code of Federal Regulations.
- (i) 40 CFR Part 97, Subpart BBBBB, "CSAPR NO_x Ozone Season Group 1 Trading Program" as published in the July 1, 2021 Code of Federal Regulations.
- (j) 40 CFR Part 97, Subpart EEEEE, "CSAPR NO_x Ozone Season Group 2 Trading

Program" as published in the July 1, 2021 Code of Federal Regulations.

- (k) ASTM D388-19; "Standard Classification of Coals by Rank"; updated 2018.
- (l) ASTM D396-19 "Standard Specifications for Fuel Oils"; updated 2019.
- (m) ASTM D975-19a; "Standard Specification for Diesel Fuel Oils"; updated 2019.
- (n) "EPA Air Pollution Control Cost Manual"; EPA/452/B-02-001, Sixth Edition, January 2002.
- (o) "Federal Consent Decree": Civil Action No. 5:14-cv-00884, as published on July 14, 2014.
- (p) "Guidance for Estimating Capital and Annual Costs of Air Pollution Systems"; Ohio environmental protection agency Engineering Guide 46; March 1983.
- (q) Performance Specification 2; contained in 40 CFR Part 60, Appendix B; "Specifications and Test Procedures for SO₂ and NO_X Continuous Emission Monitoring Systems in Stationary Sources"; as published in the July 1, 2021 Code of Federal Regulations.
- (r) Performance Specification 3; contained in 40 CFR Part 60, Appendix B; "Specifications and Test Procedures for O₂ and CO₂ Continuous Emission Monitoring Systems in Stationary Sources"; as published in the July 1, 2021 Code of Federal Regulations.
- (s) Performance Specification 16; contained in 40 CFR Part 60, Appendix B; "Specifications and Test Procedures for Predictive Emission Monitoring Systems in Stationary Sources"; as published in the July 1, 2021 Code of Federal Regulations.
- (t) USEPA method 7; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources"; as published in the July 1, 2021 Code of Federal Regulations.
- (u) USEPA method 7a; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources-Ion chromatographic method"; as published in the July 1, 2021 Code of Federal Regulations.
- (v) USEPA method 7c; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources-Alkaline-permanganate/colorimetric method"; as published in the July 1, 2021 Code of Federal Regulations.
- (w) USEPA method 7d; contained in 40 CFR Part 60, Appendix A; "Determination of nitrogen oxide emissions from stationary sources-Alkaline-permanganate/ion chromatographic method"; as published in the July 1, 2021 Code of Federal Regulations.

- (x) USEPA method 7e; contained in 40 CFR Part 60, Appendix A; "Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Procedure)"; as published in the July 1, 2021 Code of Federal Regulations.

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3745-110-02 Applicability.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (C) of rule 3745-110-01 of the Administrative Code titled "Referenced materials."]

(A) Unless exempted under paragraph (K) of rule 3745-110-03 of the Administrative Code, the requirements of this chapter apply to any stationary source of NO_x emissions that meets one of the following conditions:

(1) Existing sources.

(a) The source is, as defined in rule 3745-110-01 of the Administrative Code, a very large boiler, large boiler, mid-size boiler, small boiler, stationary combustion turbine, stationary internal combustion engine, or reheat furnace, or the source is located at a facility that emits or has the potential to emit a total of more than one hundred tons per year of NO_x emissions from all sources at that facility, including all sources that are exempt under rule 3745-110-03 of the Administrative Code.

(b) The source is located in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, or Summit county as of December 22, 2007 or the date of initial startup of the source, whichever is later.

(c) The source is located in Butler, Clermont, Hamilton or Warren county as of the effective date of this rule or the date of the initial startup of the source, whichever is later.

(2) New or modified sources, as defined in rule 3745-31-01 of the Administrative Code.

(a) The source is, as defined in rule 3745-110-01 of the Administrative Code, a very large boiler, large boiler, mid-size boiler, small boiler, stationary combustion turbine, stationary internal combustion engine, or reheat furnace.

(b) Except where the emissions limitations and requirements of an applicable new source performance standard under 40 CFR Part 60 are more stringent than the emissions limitations and requirements of this chapter, any new or modified source issued a permit-to-install after January 1, 2008, shall comply with the requirements of this chapter.

[Comment: If a new source performance standard is determined to be more stringent than the requirements of this chapter, the new source described under this paragraph is subject to the new source performance standards in lieu of the requirements of this chapter].

(B) Any owner or operator of a stationary source of NO_x emissions that no longer meets an applicable exemption under paragraph (K) of rule 3745-110-03 of the Administrative Code immediately becomes subject to the provisions of this chapter.

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3745-110-03 RACT requirements and/or limitations for emissions of NOx from stationary sources.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (C) of rule 3745-110-01 of the Administrative Code titled "Referenced materials."]

(A) Small boilers.

The owner or operator of a small boiler shall annually perform a tune-up and maintain, in a permanently bound log book, or other format approved in writing by the director the following information:

- (1) The date of the last tune-up.
- (2) The name, title and affiliation of the person who performed the tune-up and made any adjustments.
- (3) Any other information which the Ohio environmental protection agency may require as a condition of approval of any permit for the boiler.

(B) Mid-size boilers.

Except as otherwise provided in paragraphs (J) to (L) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a mid-size boiler shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

Emissions limitations [pounds of NOx emissions per mmBtu]

Fuel Type	Tangential-fired	Wall-fired	Cyclone-fired	Spreader Stoker-fired	Overfeed Stoker-fired
Gas Only	0.08	0.08	N/A	N/A	N/A
Distillate Oil	0.10	0.10	0.10	N/A	N/A
Residual Oil	0.20	0.20	0.20	N/A	N/A
Coal (Wet Bottom)	0.30	0.30	0.30	N/A	N/A
Coal (Dry Bottom)	0.30	0.30	0.30	0.30	0.30

(C) Large boilers.

Except as otherwise provided in paragraphs (J) to (L) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a large boiler shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

Emissions limitations [pounds of NOx emissions per mmBtu]

Fuel Type	Tangential-fired	Wall-fired	Cyclone-fired	Spreader Stoker-fired	Overfeed Stoker-fired
Gas Only	0.08	0.08	N/A	N/A	N/A
Distillate Oil	0.10	0.10	0.10	N/A	N/A
Residual Oil	0.20	0.20	0.20	N/A	N/A
Coal (Wet Bottom)	0.30	0.30	0.30	N/A	N/A
Coal (Dry Bottom)	0.30	0.30	0.30	0.30	0.30

(D) Very large boilers.

Except as otherwise provided in paragraphs (J) to (L) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a very large boiler shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

Emissions limitations [pounds of NOx emissions per mmBtu]

Fuel Type	Tangential-fired	Wall-fired	Cyclone-fired	Spreader Stoker-fired	Overfeed Stoker-fired
Gas Only	0.08	0.08	N/A	N/A	N/A
Distillate Oil	0.10	0.10	0.10	N/A	N/A
Residual Oil	0.20	0.20	0.20	N/A	N/A
Coal (Wet Bottom)	0.30	0.30	0.30	N/A	N/A
Coal (Dry Bottom)	0.30	0.30	0.30	0.30	0.30

(E) Stationary combustion turbine.

Except as otherwise provided in paragraphs (J) to (L) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a stationary combustion turbine shall allow or permit the discharge into the ambient air of any NOx emissions in excess of the following:

(1) Simple cycle turbines.

(a) Less than 3.5 megawatts.

(i) 150.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical

generation.

- (ii) 200.0 ppmvd corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel, for both mechanical drive and electrical generation.

(b) 3.5 megawatts up to, and including 25.0 megawatts.

- (i) 25.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical generation.
- (ii) 65.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel, for both mechanical drive and electrical generation.

(c) Greater than 25.0 megawatts and less than 50.0 megawatts.

- (i) 25.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.
- (ii) 65.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.

(d) Equal to or greater than 50.0 megawatts.

- (i) 25.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.
- (ii) 65.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.

(2) Combined cycle turbines.

(a) Less than 3.5 megawatts.

- (i) 150.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical generation.
- (ii) 200.0 ppmvd corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel, for both mechanical drive and electrical generation.

(b) 3.5 megawatts up to, and including 25.0 megawatts.

- (i) 25.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel, for both mechanical drive and electrical generation.
- (ii) 65.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines

firing distillate oil or diesel fuel, for both mechanical drive and electrical generation.

- (c) Greater than 25.0 megawatts and less than 50.0 megawatts.
 - (i) 25.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.
 - (ii) 65.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.
- (d) Equal to or greater than 50.0 megawatts.
 - (i) 25.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing only natural gas fuel.
 - (ii) 65.0 ppmvd, corrected to fifteen per cent oxygen, for combustion turbines firing distillate oil or diesel fuel.

(F) Stationary internal combustion engine.

Except as otherwise provided in paragraphs (J) to (L) of this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a stationary internal combustion engine shall allow or permit the discharge into the ambient air of any NO_x emissions in excess of the following:

- (1) For rich burn engines which burn only gaseous fuels, 3.0 grams per horsepower-hour for engines which are greater than five hundred horsepower.
- (2) For lean burn engines which burn only gaseous fuels, 3.0 grams per horsepower-hour for engines which are greater than five hundred horsepower.
- (3) For engines which burn only diesel fuel or distillate oil, 3.0 grams per horsepower-hour for engines which are greater than five hundred horsepower.
- (4) For engines which burn dual fuels, 3.0 grams per horsepower-hour for engines which are greater than five hundred horsepower.

(G) Reheat furnaces.

Except as otherwise provided in paragraphs (J) to (L) of this rule, and excluding furnaces subject to a source-specific NO_x emissions limitation established in this rule, on and after the compliance deadline specified by rule 3745-110-04 of the Administrative Code, no owner or operator of a reheat furnace with a maximum heat input capacity of greater than 50.0 mmBtu/hr shall allow or permit the discharge into the ambient air of any NO_x emissions in excess of 0.09 lb/mmBtu.

(H) The emissions limitations specified in paragraphs (A) to (G) of this rule or pursuant to paragraph (J) of this rule shall be based on one or more of the following:

- (1) The average of three one-hour stack test runs if stack testing is used to demonstrate

compliance in accordance with paragraph (A) of rule 3745-110-05 of the Administrative Code.

- (2) A twenty-four-hour daily heat input-weighted average if a permanent continuous emissions monitor is used to demonstrate compliance in accordance with paragraph (A) of rule 3745-110-05 of the Administrative Code. A thirty-day rolling heat input-weighted average emission rate may be used to demonstrate compliance with the appropriate emissions limitation from October first to April thirtieth.

Determine the twenty-four-hour daily heat input-weighted average NO_x emission rate based on the heat input-weighted average of the block hourly arithmetic average emission rates during each twenty-four-hour daily period from twelve a.m. to twelve a.m. the following day using continuous emissions monitor data . The block hourly heat input-weighted average emission rate shall be calculated for each one-hour period starting with the period twelve a.m. to one a.m. and continuing through until the last period eleven p.m. to twelve a.m.; or, starting with the period twelve p.m. to one p.m. and continuing through the last period eleven a.m. to twelve p.m. The thirty-day rolling heat input-weighted average shall be the average of the twenty-four-hour daily heat input-weighted NO_x emission rate.

- (3) A thirty-day heat input-weighted average emission rate based on the twenty-four-hour daily heat input-weighted averages if a temporary continuous emissions monitor is used to demonstrate compliance in accordance with paragraph (C) of rule 3745-110-05 of the Administrative Code.

Determine the twenty-four-hour daily heat input-weighted average NO_x emission rate based on the heat input-weighted average of the block hourly arithmetic average emission rates during each twenty-four-hour daily period from twelve a.m. to twelve a.m. the following day using continuous emissions monitor data. The block hourly heat input-weighted average emission rate shall be calculated for each one-hour period starting with the period twelve a.m. to one a.m. and continuing through until the last period eleven p.m. to twelve a.m.; or, starting with the period twelve p.m. to one p.m. and continuing through the last period eleven a.m. to twelve p.m.

- (4) A daily, twenty-four-hour arithmetic average of all the block hourly mass emission rates (in pounds per hour) or concentrations (in parts per million by volume) during each calendar day, if a permanent continuous emissions monitor is used to demonstrate compliance in accordance with paragraph (A) of rule 3745-110-05 of the Administrative Code. The block hourly mass emission rate or concentration shall be calculated for each one-hour period starting with the period twelve a.m. to one a.m. and continuing through until the last period eleven p.m. to twelve a.m.; or, starting with the period twelve p.m. to one p.m. and continuing through the last period eleven a.m. to twelve p.m.

(I) Emission averaging programs.

- (1) An owner or operator of a source which is subject to this chapter may propose an emission averaging program in lieu of the applicable emissions limitations specified

in paragraphs (A) to (G) of this rule or established in accordance with paragraph (J) of this rule. Both affected sources under rule 3745-110-02 of the Administrative Code and non-affected sources are allowed to be utilized in the averaging program, to the extent that reductions are real, quantifiable and enforceable and are in excess of any state or federal requirements. Any proposed emission averaging program shall comply with all of the following requirements:

- (a) Specify the RACT emissions limitation for each affected source in rule 3745-110-02 of the Administrative Code involved in the emission averaging program.
 - (b) Specify a clearly enforceable proposed emissions limitation for each source or group of sources involved in the emission averaging program.
 - (c) Result in actual reductions in NO_x emissions that are equal to or greater than the actual emission reductions that would be required by this rule if an emission averaging program were not employed.
 - (d) Achieve compliance with the proposed emissions limitation in accordance with the compliance deadlines in rule 3745-110-04 of the Administrative Code.
 - (e) Reductions allowed under the emission averaging program are those reductions that are real, quantifiable and enforceable and are in excess of any state or federal requirements. For purposes of determining the reductions, the actual emissions in tons per year, from all sources included in the averaging program, are subtracted from the lesser of either the actual annual average emissions prior to when the actual reduction occurs or the allowable emissions. A shutdown is creditable only to the extent that the owner or operator can demonstrate to the satisfaction of the director that the shutdown does not correspond to load-shifting or other activity which results in or could result in an equivalent or greater emission increase and that the reduction accounts for any increase in NO_x emissions from other sources as a result of the shutdown.
 - (f) Owners or operators must submit a report to the director by March thirty-first of each year demonstrating that the equivalent reduction requirement in paragraph (I)(1)(c) of rule 3745-110-03 of the Administrative Code has been achieved for the previous calendar year.
- (2) Any emission averaging program approved by the director shall be submitted to and approved by the United States environmental protection agency as a revision of the Ohio state implementation plan. An emission averaging program shall not be federally enforceable until the United States environmental protection agency approves the program as part of the Ohio state implementation plan.
- (J) RACT studies for stationary sources.
- (1) For any affected source of NO_x emissions at an affected facility that is not subject to the emissions limitations specified in paragraphs (A) to (G) of this rule and is not exempt under paragraph (K) of this rule, or that is subject to the emissions

limitations specified in paragraphs (A) to (G) of this rule but the owner or operator claims that an applicable emissions limitation is technically infeasible or economically unreasonable (not cost-effective) to achieve, the owner or operator shall conduct a detailed engineering study to determine the technical and economic feasibility of reducing the NO_x emissions and to define RACT for the source. The detailed engineering study shall be conducted by an engineering consulting firm or other person or persons experienced in the field of air pollution control, and provide the following information:

- (a) The complete facility name, Ohio EPA air program facility identification number, and address.
- (b) The name, title, address and telephone number of the owner or operator's representative within the company who is the contact person for this facility regarding the engineering study and affected sources.
- (c) The name, title, address and telephone number of the official who is responsible for approval of the engineering study.
- (d) The standard industrial classification code and source classification code numbers which are applicable to the facility's operation.
- (e) The following general information for each affected source:
 - (i) Ohio environmental protection agency application number.
 - (ii) Company identification and Ohio EPA emissions unit identification number.
 - (iii) Source description.
 - (iv) Month and year installed.
 - (v) Normal operating schedule (hours per day, days per week, and weeks per year).
 - (vi) Annual production rates for each of the three full calendar years preceding the effective date of this rule.
 - (vii) Average and maximum daily production rates for each of the three full calendar years preceding the effective date of this rule.
 - (viii) The type of control equipment employed and the date installed.
- (f) A plot plan which shows the general layout of the facility and the affected source.
- (g) The following emissions data for each affected source:
 - (i) Average daily NO_x emissions (pounds per day of operation) based upon the highest average daily production rate for each of the three full calendar years preceding the effective date of this rule or any other year that may be representative of the highest average daily emissions.

[Comment: The average daily production rate for a calendar year may be calculated in the following manner:

Average daily production rate = [(total production rate during the calendar year) / (number of days production occurred during the calendar year)]

Repeat the calculation for each of the three calendar years preceding the effective date of this rule. The highest value of these three years is the representative value used to calculate the average daily NO_x emissions per year.]

- (ii) Maximum daily NO_x emissions (pounds per day of operation) based upon the highest maximum daily production rate for each of the three full calendar years preceding the effective date of this rule or any year that may be more representative of the highest maximum daily emissions.
- (iii) Annual NO_x emissions (tons per year) based upon the highest annual production rate for each of the three full calendar years preceding the effective date of this rule or any year period that may be more representative of the annual production rate.
- (iv) Documentation of the efficiency of the existing control equipment.
- (v) Documentation of any emissions testing which has been performed.
- (h) A detailed discussion of the technical feasibility of employing each of the following types of control measures for each affected source (or combination of sources):
 - (i) Low-NO_x burners.
 - (ii) Close coupled or separated over-fire ports.
 - (iii) Flue gas recirculation.
 - (iv) Low NO_x burners with external flue gas recirculation.
 - (v) Burners out of service.
 - (vi) Steam/water injection.
 - (vii) Dry low-NO_x burners.
 - (viii) Ignition timing retard.
 - (ix) Separate circuit after-cooling.
 - (x) Fuel emulsification.
 - (xi) Selective noncatalytic reduction.
 - (xii) Nonselective catalytic reduction.

- (xiii) Selective catalytic reduction using urea ammonia and methane as reducing agents.
- (xiv) Incineration (for sources other than boilers).
- (xv) Scrubbing (for sources other than boilers).
- (xvi) Process modification.
- (xvii) Fuel switching.
- (xviii) Adjustment of air/fuel ratio (for internal combustion engines only).
- (xix) Low excess air.
- (xx) Mid-kiln firing.
- (xxi) Mid-kiln air injection.
- (xxii) Gaseous fuels reburn.
- (xxiii) Any other such RACT alternatives not listed in paragraph (J)(1)(h) of this rule that may be applicable to an affected source, or as are proposed by the owner or operator.

A detailed engineering discussion is not required for those control measures which are not applicable to a particular source.

- (i) For each type of control measure that is determined to be technically feasible, an estimate of the control efficiency that can be achieved.
- (j) For each control measure that is determined to be technically feasible, an estimate of the capital cost, annualized cost (including capital and operating costs), and the cost-effectiveness (annual dollars per ton of NO_x removed annually).
- (k) A comparison and discussion of the advantages and disadvantages of the control options that are determined to be technically feasible.
- (l) A recommended definition of RACT for the source, including one or more of the following:
 - (i) Enforceable production limitations.
 - (ii) Emissions limitations.
 - (iii) Control efficiencies.
 - (iv) Operating requirements.
- (m) An expeditious schedule for implementing the recommended definition of RACT, including milestones for awarding contracts, initiating construction, completing construction, and performing emissions testing, if necessary, to

demonstrate compliance with the approved definition of RACT.

- (n) Clean and detailed documentation of all calculations of the NO_x emissions, including all assumptions made.
 - (o) Capital and operating costs and the cost-effectiveness estimates calculated in a manner consistent with the most recent edition of the "United States environmental protection agency air pollution control cost manual."
- (2) For any source that is subject to an emissions limitation contained in paragraphs (A) to (G) of this rule, if the director approves a definition of RACT and a schedule of compliance for the source pursuant to paragraph (J) of this rule, the source shall no longer be subject to the emissions limitations contained in paragraphs (A) to (G) of this rule.

For any source that is subject to an emissions limitation contained in paragraph (A) to (G) of this rule, if the director disapproves a definition of RACT and a schedule of compliance for the source pursuant to paragraph (J) of this rule, or if the RACT study determines the applicable NO_x emissions limitations contained in paragraphs (A) to (G) of this rule is technically feasible and economically reasonable (i.e., cost-effective) to achieve, or if the director disapproves of a variance application pursuant to paragraph (L) of this rule, the source remains subject to the emissions limitations contained in paragraphs (A) to (G) of this rule and the applicable compliance deadline specified in paragraph (B) of rule 3745-110-04 of the Administrative Code.

- (3) If, within the five years prior to December 22, 2007 for sources located in Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage, or Summit county, or within the five years prior to the effective date of this rule for sources located in Butler, Clermont, Hamilton or Warren county, the Ohio environmental protection agency has defined best available technology, pursuant to section 3704.01 of the Revised Code, for NO_x emissions from a source which is subject to paragraph (J) of this rule, and the owner or operator is employing or has committed to employ the best available technology, the owner or operator may provide the following information to the director in satisfaction of paragraph (J)(1) of this rule:
- (a) All information required by paragraphs (J)(1)(a), (J)(1)(b), (J)(1)(d), (J)(1)(e) and (J)(1)(g) of this rule.
 - (b) Copies of the documents and technical information that support the existing best available technology determination.
 - (c) The name, title, address and telephone number of the official who is responsible for the information submitted in accordance with paragraph (J)(4) of this rule.

If upon review of this information, the director determines that the information does not or may not indicate that the definition of best available technology satisfies the requirements of this chapter, the director shall so notify the owner or operator, and the owner or operator shall conduct a full RACT engineering study in accordance

with paragraph (J)(1) of this rule.

- (4) Any definition of RACT and schedule of compliance for an affected source that are approved by the director shall be submitted to the United States environmental protection agency as a revision of the Ohio state implementation plan.

(K) Paragraphs (A) to (G) of this rule shall not apply to the following sources:

- (1) Any industrial boiler having a maximum heat input of less than or equal to twenty mmBtu/hr.
- (2) Any standby boiler, stationary internal combustion engine, or stationary combustion turbine which operates less than five hundred hours during any consecutive twelve-month period. However, the owner or operator of the standby engine, boiler, or turbine shall maintain for a period of not less than three years, in a bound log book, or other format acceptable to the director, a list of the dates and number of hours the standby engine, boiler, or turbine operated.
- (3) Any stationary internal combustion engine having an energy output capacity of less than five hundred horsepower.
- (4) Any stationary combustion turbine having an energy input capacity of less than twenty mmBtu/hr.
- (5) Any start-up unit located at an electric generating facility.
- (6) Any black start unit located at an electric generating facility.
- (7) Any peaking unit.
- (8) Any space heating unit.
- (9) Any auxiliary boiler.
- (10) Any CO boiler.
- (11) Any research and development source.
- (12) Any jet engine test cell.
- (13) Any engine testing operation.
- (14) Any air pollution control device.
- (15) Any municipal waste combustor.
- (16) Any source other than a boiler, gas turbine or internal combustion engine that has the potential to emit less than twenty-five tons per year of NO_x.
- (17) Any affected source issued a valid air operating permit by Ohio environmental protection agency that restricts such affected source to twenty-five tons per year or less of NO_x emissions.

- (18) Any affected source that is has been issued a permit-to-install that is subject to best available control technology or lowest achievable emission rate standards.
- (19) Any affected source whose utilization in less than ten per cent of its capacity factor on an annual average basis over a three-year rolling period and less than twenty per cent of its capacity factor in any year of the three-year rolling period.
- (L) Any affected facility that cannot comply with the applicable requirements set forth in this rule because of extraordinary reasons beyond the affected facility's reasonable control may apply in writing to the director for a variance. The variance application shall be prepared in accordance with the provisions specified in rule 3745-31-09 of the Administrative Code and shall only be granted provided the requirements of paragraph (C)(1)(b) of rule 3745-31-09 of the Administrative Code are met. No variance may be granted under this paragraph that does not provide for eventual compliance with this rule.
- (M) [Reserved].
- (N) On and after May 12, 2011, "ArcelorMittal Cleveland Inc." (13-18-00-1613) or any subsequent owner or operator of the "ArcelorMittal Cleveland Inc." facility located at 3060 Eggers avenue, Cleveland, Ohio shall comply with the following NOx emissions limitations:

Emissions Unit	Description	NOx Emissions Limitations
P049	Anneal - North	0.10 lb/mmBtu
P050	Anneal - South	0.10 lb/mmBtu
P071	Continuous Galvanizing Line	0.23 lb/mmBtu
P903	C5 Blast Furnace: Stoves	0.06 lb/mmBtu
P904	C6 Blast Furnace: Stoves	0.06 lb/mmBtu
P905 and P906	No. 1 BOF: Ladle Preheaters	0.10 lb/mmBtu
P925 and P926	No. 2 BOF: Ladle Preheaters	0.10 lb/mmBtu
P046	Slab-Pusher Reheat Furnace No. 1 rated at 602.6 mmBtu/hr	0.35 lb/mmBtu
P047	Slab-Pusher Reheat Furnace No. 2 rated at 602.6 mmBtu/hr	0.35 lb/mmBtu
P048	Slab-Pusher Reheat Furnace No. 3 rated at 602.6 mmBtu/hr	0.35 lb/mmBtu

- (O) On and after May 12, 2011, "Republic Engineered Products" or any subsequent owner or operator of the "Republic Engineered Products" facility located at 1807 East 28th street, Lorain, Ohio shall comply with the following NOx emissions limitations:

Emissions Unit	Description	NOx Emissions Limitations
P071	Walking beam furnace, rated at two hundred six mmBtu/hr	0.15 lb/mmBtu
P081	Bloom reheat furnace, rated at 421.6 mmBtu/hr	0.132 lb/mmBtu

(P) "United States Steel Lorain Tubular Operations" or any subsequent owner or operator of the "United States Steel Lorain Tubular Operations" facility located at 2199 East 28th street, Lorain, Ohio shall comply with the NOx emission limitations as follows:

Compliance date	Emissions Unit	Description	NOx Emissions Limitations
On or after May 12, 2011	P003	Number 3 seamless mill Q and T tempering furnace, rated at one hundred twelve mmBtu/hr	0.068 lb/mmBtu
On or after May 12, 2011	P037	Number 3 seamless mill number 2 reheat furnace, rated at 58.8 mmBtu/hr	0.15 lb/mmBtu
On or after May 12, 2011	P040	Number 4 seamless mill reheat furnace, rated at 50.9 mmBtu/hr	0.15 lb/mmBtu
On or after the effective date of this rule	P039	Number 4 seamless mill rotary reheat furnace, rated at 195.4 mmBtu/hr	0.08 lb/mmBtu
On or after the effective date of this rule	P035	Number 3 seamless mill rotary reheat furnace, rated at 296.0 mmBtu/hr	0.12 lb/mmBtu, compliance with this emissions limitation shall be demonstrated in accordance with the test methods and procedures specified in paragraphs (C) and (H)(3) of this rule or rule 3745-110-05 if the Administrative Code.

(Q) On and after July 18, 2013, "Charter Steel" or any subsequent owner or operator of the "Charter Steel" facility located at 4300 East 49th street, Cuyahoga Heights, Ohio : NOx emissions for bar mill reheat furnace PO29, rated at 165.0 mmBtu/hr, shall not exceed 0.11 lb/mmBtu.

(R) "BASF Corporation" or any subsequent owner or operator of the "BASF Corporation" facility located at 120 Pine Street, Elyria, Ohio; shall comply with the NOx emission limitations as follows:

(1) On and after July 18, 2013, up to the effective date of this rule:

Emissions Units	NOx Emissions Limitations
Calciners P009, P010, P080, P102, and P103	1.86 lbs/hr (200.0 ppmvd) when operating the selective catalytic reduction (SCR) system
Calciners P009, P010, P080, P102, and P103	3.4 lbs/hr (250.0 ppmvd) when operating the caustic/chemical Tri-Mer scrubber

(2) On and after the effective date of this rule, the NOx emissions from calciners P009, P010, P080, P092, P102, and P103, shall be vented to either of the following:

- (a) The TriMer caustic scrubber, the emissions from which shall not exceed a controlled NOx emissions limitation of 250.0 ppmvd, as a three-hour block average, based on the average of three, one-hour stack test runs, if stack testing is used to demonstrate compliance.
- (b) A selective catalytic reduction system, the emissions from which shall not exceed a controlled NOx emissions limitation of 200.0 ppmvd, as a three-hour block average, except that if a continuous emission monitoring system, which complies with the requirements of 40 CFR Part 60, is employed by the owner or operator to demonstrate ongoing compliance with the allowable NOx emissions limitation, the averaging time for the NOx emissions limitation shall be a twenty-four-hour arithmetic average for each calendar day. The arithmetic average shall be based upon CEMS data for only those hours during which one or more emissions units are operating and, as a result, could be based upon less than twenty-four hours. (If a CEMS is employed, pursuant to 40 CFR Part 60.13(h), at least one valid data point in each fifteen-minute quadrant of the hour in which the emissions unit operates is required to calculate the hourly average emission rate. Also, if more than one valid data point is obtained during a fifteen-minute quadrant, all of the valid data points obtained shall be used to calculate the hourly average emission rate.)

[Comment: The above-mentioned NOx emissions limitations do not include the NOx emissions from the combustion of natural gas for the indirect heating of each calciner. The NOx RACT study approved by Ohio EPA on February 11, 2010 contained calculations supporting the conclusion that NOx emissions from the combustion of natural gas for the indirect heating of each calciner to be less than ten pounds per day.]

- (S) On and after July 18, 2013, "Carmeuse Lime, Inc., Grand River Operation" or any subsequent owner or operator of the "Carmeuse Lime, Inc., Grand River Operation" facility located at 15 Williams street, Grand River, Ohio : NOx emissions for Rotary lime kilns P001 and P002 (kilns #4 and #5), with a maximum process weight rate of 54.5 tons/hr of limestone per kiln, shall not exceed a rate of 6.0 lbs/ton of lime produced.
- (T) On and after July 18, 2013, "Ross Incineration Services, Inc.," or any subsequent owner or operator of the "Ross Incineration Services, Inc.," facility located at 36790 Giles road,

Grafton, Ohio : NO_x emissions for Hazardous waste incinerator N001, with a rated maximum capacity of 26,057.0 lbs/hr of waste materials, shall not exceed 158.1 lbs/hour, based on a rolling twenty-four hour average.

(U) [Reserved.]

(V) On and after the effective date of this rule, "The University of Akron," or any subsequent owner or operator of the "The University of Akron," facility located at 145 Hill Street, Akron, Ohio shall comply with the following NO_x emissions limitations when burning number two fuel oil, and shall not burn number two fuel oil for more than a maximum of fourteen days per calendar year:

Emissions Unit	Description	NO _x Emissions Limitations
B031	Boiler, rated at 89.1 mmBtu/hr	0.18 lb/mmBtu
B033	Boiler, rated at 89.1 mmBtu/hr	0.20 lb/mmBtu

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3745-110-04 Compliance deadlines.

(A) Certification and permit application requirements.

- (1) Within one hundred twenty days of becoming subject to this chapter, any owner or operator of a source subject to paragraphs (A) to (G) of rule 3745-110-03 of the Administrative Code and which is not subject to paragraph (A)(2) of this rule shall do one of the following:
 - (a) Certify in writing to the director that such source is in compliance with all requirements of rule 3745-110-03 of the Administrative Code. Such certification shall include: equipment description, Ohio environmental protection agency permit application number(s) (if assigned), and all necessary data (consistent with the appropriate permit application appendices) and calculations which confirm the compliance status. The certification shall also include an application for a permit-to-operate such source if such source does not possess an effective permit.
 - (b) Submit an application for a permit-to-operate or an application for a modification to a permit-to-operate in accordance with either rule 3745-31-02 of the Administrative Code or Chapter 3745-77 of the Administrative Code. Such application shall include a compliance program which will bring the source into compliance with all the requirements of rule 3745-110-03 of the Administrative Code as expeditiously as practicable, but in no event later than the date specified in paragraph (B) of this rule.
- (2) Within one year of becoming subject to this chapter, any owner or operator of a source subject to paragraph (J) of rule 3745-110-03 of the Administrative Code shall submit a complete RACT study to the Ohio environmental protection agency.
- (3) Any source located in Butler, Clermont, Cuyahoga, Geauga, Hamilton, Lake, Lorain, Medina, Portage, Summit, or Warren county for which the director has established a site-specific definition of RACT in accordance with paragraph (J) of rule 3745-110-03 of the Administrative Code shall submit an updated RACT study to the Ohio environmental protection agency within one year of the effective date of this rule.

(B) RACT compliance deadline.

Any owner or operator of a source which is subject to the requirements of rule 3745-110-03 of the Administrative Code, including any source for which the director approves a definition of RACT pursuant to paragraph (J) of rule 3745-110-03 of the Administrative Code and has not approved an alternative schedule for implementing the RACT, shall achieve and demonstrate compliance with said emissions limitations and control requirements as expeditiously as practicable, but in no event later than the following, and maintain compliance thereafter:

- (1) For facilities conducting a RACT study in accordance with paragraph (A)(2) of this rule, or updating a RACT study in accordance with paragraph (A)(3) of this rule, one of the following:

- (a) By not later than two years after approval by the director of the RACT study, if combustion modifications are required to demonstrate compliance with the applicable NO_x emissions limitations.
 - (b) By not later than three years after approval by the director of the RACT study, if add-on controls are required to demonstrate compliance with the applicable emissions limitations.
- (2) For facilities not conducting a new or updated RACT study, one of the following:
- (a) By not later than two years of becoming subject to this chapter or becoming subject to an emissions limitation that was revised as of the effective date of this rule, if combustion modifications are required to demonstrate compliance with the applicable emissions limitations.
 - (b) By not later than three years of becoming subject to this chapter or becoming subject to an emissions limitation that was revised as of the effective date of this rule, if add-on controls are required to demonstrate compliance with the applicable emissions limitations.

[Comment: Several emissions limitations in this chapter were revised as of the effective date of this rule. Facilities that were subject to this chapter prior to the effective date of this rule are required to comply with the emissions limitations in the previously effective versions of this rule until such time as a new compliance deadline is applicable in accordance with paragraph (B) of this rule.]

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3745-110-05 Compliance methods.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see paragraph (C) of rule 3745-110-01 of the Administrative Code titled "Referenced materials."]

Any owner or operator of a source which is subject to the requirements of rule 3745-110-03 of the Administrative Code shall demonstrate compliance with the applicable emissions limit(s) limitations in accordance with one of the following:

- (A) Installing a permanent continuous emissions monitoring system for NO_x and, if necessary, a diluent (carbon dioxide or oxygen) that is employed to ensure ongoing compliance with an applicable emissions limitation. The permanent continuous emissions monitoring system shall meet the requirements of performance specification 2 and performance specification 3, 40 CFR Part 60, Appendix B and quality assurance procedures contained in 40 CFR Part 60, Appendix F or 40 CFR Part 75.
- (B) Perform emission tests in accordance with USEPA method 7, 7a, 7c, 7d, or 7e, and any additional approved USEPA methods as applicable. The owner or operator shall obtain any additional test data (such as flow rates, oxygen concentrations, moisture contents, etc.), continuous diluent monitoring data (carbon dioxide or oxygen), or source fuel usage or horsepower data, concurrent with the compliance demonstration in order to convert the emission test results or monitoring data to the units of the applicable emissions limitation. Compliance demonstrations shall be performed that are representative of the normal operating modes, including fuel types or fuel blends employed and shall exclude periods of startup, shutdown, malfunction, and low load operating conditions as follows:
 - (1) For paragraphs (B), (C), and (D) of rule 3745-110-03 of the Administrative Code, compliance demonstrations shall be performed while the affected boiler is operating at or as close as possible to its maximum permitted operating capacity.
 - (2) For paragraph (E) of rule 3745-110-03 of the Administrative Code, compliance demonstrations shall be performed while the affected stationary combustion turbine is operating at or as close as possible to its maximum permitted operating capacity.
 - (3) For paragraph (F) of rule 3745-110-03 of the Administrative Code, compliance demonstrations shall be performed while the affected internal combustion engine is operating at or as close as practically possible to its maximum permitted operating capacity.
 - (4) For paragraph (G) of rule 3745-110-03 of the Administrative Code, compliance demonstrations shall be performed while the affected reheat furnace is operating at or as close as practically possible to its maximum permitted operating capacity.
- (C) For a source not installing a permanent continuous emissions monitoring system in accordance with paragraph (A) of this rule, installing a temporary continuous emissions monitoring system for thirty operating days that is capable of measuring and recording

NO_x and, if necessary, a diluent (carbon dioxide or oxygen) concentration in addition to calculating NO_x lb/mmBtu data in an ongoing basis. The continuous emissions monitoring system shall do the following:

- (1) Be temporarily installed, calibrated, maintained and operated in an approved manner and location where representative emissions measurements from the stack can be made. Prior to installation, the owner or operator shall submit, for approval by the director, a continuous emissions monitoring protocol that includes, at a minimum, the location of, and specifications for, each instrument or device, as well as procedures for calibration, operation, data recording, data evaluation, and data reporting.
 - (2) Meet the requirements of performance specification 2 and performance specification 3, 40 CFR Part 60, Appendix B, and quality assurance procedures contained in 40 CFR Part 60, Appendix F, procedure 1 (including relative accuracy test audit and cylinder gas audit requirements).
 - (3) Operate for a thirty-day period under normal operating modes. The thirty-days do not have to be consecutive.
- (D) An owner or operator of a source subject to this rule may request to monitor NO_x emissions for compliance determination purposes using a predictive emission monitoring system (PEMS) in accordance with the requirements of 40 CFR 60, subpart A and appendix B, performance specification 16, with written approval of the director, provided the source is not otherwise required to operate a continuous emissions monitoring system under another legal authority.

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